

**State of Rhode Island and Providence Plantations
DEPARTMENT OF BUSINESS REGULATION**

Division of Design Professionals

1511 Pontiac Avenue, Building 68

Cranston, Rhode Island 02920

**RULES AND REGULATIONS
FOR PROFESSIONAL LAND SURVEYING
IN THE STATE OF RHODE ISLAND**

Effective Date: November 25, 2015

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1. PURPOSE, AUTHORITY AND APPLICABILITY

- 1.1 Purpose. These Rules and Regulations are promulgated under the authority of R.I. Gen. Laws § 5-8.1-4(b). They are established for the purpose of describing the practices and procedures of the Board of Registration for Professional Land Surveyors, which is one component of the Division of Design Professionals within the Department of Business Regulation (DBR) and to delineate application, registration, professional responsibilities, and procedural and technical standards for the practice of Professional Land Surveying in the State of Rhode Island. It is the function of the Board of Registration for Professional Land Surveyors to regulate the Practice of Land Surveying within the State of Rhode Island as defined by the General Laws.

These Rules and Regulations shall supersede any and all previous *Administrative Rules* of the Board that have been filed with the Secretary of State.

- 1.2 Authority. These rules and regulations are promulgated pursuant to the requirements of R.I. Gen. Laws § 5-8.1-1 *et seq.* These rules and regulations have also been prepared in accordance with the provisions of R.I. Gen. Laws § 42-35-1 *et seq.*, entitled “Administrative Procedures Act”.

1.3 Construction

1.3.1 Sections of the “Rules” are referred to sequentially by numbers at the left side of the page.

1.3.2 The terms “rules” and “rules and regulations” are used interchangeably.

1.4 References to the Rhode Island General Laws

1.4.1 All statutory references to the Rhode Island General Laws are to the Rhode Island General Laws of 1990, as amended and Chapter 73, Article 3, Section 13(a), of the 2007 Public Laws and further amended by Chapter 100, Article 9 Substitute A as Amended, Section 13(a), of the 2008 Public Laws. The Rhode Island General Laws also referred to within as the “General Laws of Rhode Island” or “R.I. Gen. Laws §”.

1.4.2 References to the Board shall also be interpreted to include staff of the Board when designated to perform specific functions.

2. DEFINITIONS

- 2.1. “Act” – Refers to the enabling legislation for the Act entitled “Professional Land Surveyors”, contained in Rhode Island General Laws Chapter 5-8.1-1 *et seq.* and Chapter 73, Article 3, Section 13(a), of the 2007 Public Laws and further amended by Chapter 100, Article 9 Substitute A as Amended, Section 13(a), of the 2008 Public Laws, and as may have been amended from time to time thereafter.

- 2.2 “Active” means a registered Professional Land Surveyor authorized to currently practice land surveying by the Board and who has complied with the continuing education requirements prescribed herein.

- 2.3 “Biennium” (for Continuing Education purposes) means a period of two years, commencing on July 1st and terminating on June 30th.
- 2.4 The term "Board" wherever used in these rules and regulations shall be deemed to refer to the Board of Registration for Professional Land Surveyors or, when the context permits, to the relevant administration or personnel thereof.
- 2.5 “Certificate of Authorization” – Is defined in R.I. Gen. Laws § 5-8.1-13(b)(2) and is further referred to in Rule 6.2 within.
- 2.6 The term "Chair" shall be deemed to be referred to as the Chair of the Board of Registration for Professional Land Surveyors wherever used in these rules and regulations.
- 2.7 “Department” means the Department of Business Regulation.
- 2.8 “Division of Design Professionals” – Is a single administrative division within the Department of Business Regulation (DBR), comprised of the four (4) Boards, the State Board of Registration for Professional Land Surveyors, the Board of Registration for Professional Engineers, Board of Examination and Registration of Architects, and the Board of Examiners of Landscape Architects.
- 2.9 “Entity” - any organization or being which has a separate legal existence, which engages in the Practice of Land Surveying. Entity includes but is not limited to corporations, partnerships, sole proprietorships, state agencies, municipalities, and municipal agencies
- 2.10 "Experience" and "Training" are interchangeable and mean satisfactory land surveying related employment as required by the Board and NCEES.
- 2.11 “Inactive” means a registered Professional Land Surveyor who has obtained inactive status from the Board and is not required to comply with the continuing education requirements prescribed herein. An Inactive Registrant may not engage in the Practice of Land Surveying in the State of Rhode Island.
- 2.12 “Issued” – when used with a plan, drawing, plat or other work product, means when the work product is presented to the client, federal state or municipal board / agency, etc. for acceptance or action.
- 2.13 “Land Surveyor Emeritus” - Upon application, an honorary title issued to a retired Professional Land Surveyor who is prohibited from practicing land surveying in the State of Rhode Island.
- 2.14 “NCEES” – The National Council of Examiners for Engineering and Surveying.
- 2.15 “Practice of Land Surveying”. As defined in R.I. Gen. Laws § 5-8.1.
- 2.16 A person practices as a “Principal” if the person is a Professional Land Surveyor, is in responsible control of the organization’s land surveying practice either alone or in concert

with other Professional Land Surveyor(s), is responsible for the profits and losses of the firm, is legally liable for the acts of the firm, and holds one of the following positions:

- 2.16.1 Sole proprietor if the practice is through a sole proprietorship.
- 2.16.2 Officers and Directors if the practice is through a corporation.
- 2.16.3 General partner if the practice is through a partnership.
- 2.16.4 General Partner if the practice is through a limited liability partnership.
- 2.16.5 Members or Managers if the practice is through a limited liability company.
- 2.17 “Professional Development Hour (PDH)” means 50 minutes of in-class instruction or 50 minutes of participation in other forms of continuing education, in each case found acceptable by the Board.
- 2.18 "Professional Land Surveyor" – or “Registrant” as defined in R.I. Gen. Laws § 5-8.1-2(14), means a person who has been duly registered as a professional land surveyor by the board established under this chapter, and who is a professional specialist in the technique of measuring land, educated in the basic principles of mathematics, the related physical and applied sciences and the relevant requirements of law for adequate evidence and all to surveying of real property and engaged in the Practice of Land Surveying as defined in this section..
- 2.19 “Responsible Charge” – That amount of control over and detailed knowledge of the content of technical submissions during their preparation as is ordinarily exercised by Professional Land Surveyors applying the required professional standard of care.
- 2.20 “Sponsor” means a person or Entity providing a technical meeting, seminar, tutorial, short course, correspondence course, college/university course or other activity constituting continuing education hereunder and approved by the Board.
- 2.21 “Stamp” – Is the instrument to apply a seal evidencing registration of a Professional Land Surveyor pursuant to R.I. Gen. Laws § 5-8.1.

3. BY-LAWS

- 3.1 Name. The name of this Board shall be the "Board of Registration for Professional Land Surveyors" and shall be hereinafter referred to as the “Board”.
- 3.2 Procedure. The latest edition of Robert's Rules of Order is adopted as the rules for conducting the business of this Board at its meetings, except where Robert’s Rules of Order differs from the Rules and Regulations of this Board or the General Laws of Rhode Island.
- 3.3 Complaint, Hearings. It is the function of the Board to regulate the Practice of Land Surveying within the State of Rhode Island as defined by the General Laws. The Board shall administer this function and investigate complaints and conduct hearings in accordance with Rule 10.

- 3.4 Office. The chief place of business shall be at the office of the “Board of Registration for Professional Land Surveyors of the Division of Design Professionals within the Department of Business Regulation (DBR). The current address of that office is:

1511 Pontiac Avenue, Building 68-2
Cranston, Rhode Island 02920
(401) 462-9530
(401) 462-9532 fax

In the event that the current address or telephone number changes, such change shall not preempt any provision of these rules and regulations.

3.5 Meetings

3.5.1 Posting of Meetings. All meetings shall be publicly posted as required by law.

3.5.2 Regular Meetings. Board meetings shall be held no less than ten (10) times a year. Special meetings may be called at the direction of the Chair. Monthly meetings will be held on the second Tuesday of the month at 1:00 P.M. at the Board headquarters unless otherwise directed by the Chair

3.6 Quorum. A quorum of the Board shall consist of not less than three (3) members.

3.7 Voting. All members of the board, including the chair, are entitled to vote and to make or to second motions. A majority vote of the attending members of the Board is required to pass a motion.

3.8 Order of Business. The Board shall establish and publish an agenda for each business meeting. The order of business will be set according to the published agenda.

3.9 Board Organization / Election of Officers. Annually, the Board shall elect a Chair, a Vice Chair and a Secretary at its November meeting. Officers shall assume office immediately after adjournment of the meeting at which they are elected. The Chair may not serve more than two (2) consecutive terms, and may be elected by succession.

3.10 Duties of Officers

3.10.1 The Chair. The Chair shall, when present, preside at all meetings and shall appoint all committees. The Chair shall otherwise perform all duties pertaining to the office of Chair and shall sign all certificates, vouchers, and other official documents. The Chair may also add ad-hoc committees when required. The Chair shall be "Ex-Officio" member of all committees.

3.10.2 The Vice Chair. The Vice Chair shall, in the absence or incapacity of the Chair, exercise the duties and shall possess all the powers of the Chair.

3.10.3 The Secretary. The Secretary shall conduct and care for all correspondence in the name of the Board and shall record and file all applications, certificates of registration, examinations, registrations and revocations; be in possession of the official seal and

affix same to all official documents upon order of the Chair and Board: sign all certificates; and keep a record of all meetings in a form approved by the Board. The Secretary shall prepare annually a roster showing the names and places of business of all registered Professional Land Surveyors. The Secretary shall keep all records of the Board in a manner reasonably safe from all fire hazards. The Secretary shall supervise the Board's administrative office activities through the administrative assistant and properly advise the Board of matters requiring its attention. These tasks may be delegated by the Board and Director to appropriate staff within the Department of Business Regulation.

- 3.11 Vacancies. On an annual basis, the Chair will fill any vacancies for whichever committees he or she feels is appropriate to the Board business. If, for any reason, vacancies shall occur in the offices of Chair, Vice Chair, or Secretary, the Office shall be filled by an election of the Board members either at a regular meeting or a special meeting called for that purpose. For election, any candidate for an office shall receive not less than three (3) affirmative votes.
- 3.12 Finance. All monies shall be paid out as provided by the Laws of the State.
- 3.13 Rules & Regulations. A member of the Board shall be appointed to consider and recommend to the Board such modifications of the rules and regulations governing examinations, registrations and other procedures as will give the best operating results on an as needed basis.
- 3.14 Examination Coordination. A member of the Board shall be appointed to coordinate with the National Council of Examiners of Engineering and Surveying on the nature and scope of the examinations to be held by the Board and verify examination scores. The Board member shall also be charged with the organization of the State portion of the examination and shall invoke the help of the Board in approving questions and answers.
- 3.15 Complaint Investigation. The Board shall appoint an investigator and he or she shall, with the Secretary, screen all complaints and decide on the procedure for their treatment. He or she shall act as complaint officer for such complaints. The Board may appoint its legal counsel to fulfill the purpose of this investigator.
- 3.16 Continuing Education. A member of the Board shall be appointed to report, to the Board, all data pertaining to continuing education, including available degree programs, whether instate or in close proximity to Rhode Island. The member may also consult with other individuals or organizations. Any actions taken by the Board regarding the approval or denial of a program for continuing education credits will occur in the public portion of the Board's monthly meetings.
- 3.17 Technical Standards Review. The Board shall appoint a member of the Board to periodically meet with the Rhode Island Society of Professional Land Surveyors and any other professional land surveying organizations in Rhode Island. At least once per year, he or she shall recommend, to the Board, whether changes or updates that should be made to technical standards.
- 3.18 Administrative Assistant

- 3.18.1 Responsibilities. The Board shall employ an individual as administrative assistant. The administrative assistant shall coordinate and direct the activities of all members of the staff and the Board's legal counsel. The administrative assistant shall be responsible for implementing all procedures incident to the examination and registration of applicants for registration as Professional Land Surveyors and/or Land Surveyors-in-Training, and issuance of Certificates of Authorization to practice land surveying in the State of Rhode Island. These procedures include dissemination of application forms, verification of information furnished by applicants, notifications to applicants, administration of examinations, reporting results of investigations and examinations to the Board, and issuance of Certificates. The administrative assistant shall implement the functions herein defined as responsibilities of the Secretary.
- 3.18.2 Coordination. The administrative assistant shall be responsible to the Board's Secretary for implementation of the functions herein defined as responsibilities of the Secretary. The administrative assistant shall maintain liaison with all Board members and the Board's legal counsel.
- 3.18.3 Reports. The administrative assistant shall make a formal report to the Board at each regular Board meeting, of all pertinent administrative, investigative and enforcement activities since the previous meeting. Investigative and enforcement reports may be made at more frequent intervals if circumstances dictate. Investigation and enforcement reports shall normally be prepared in collaboration with the Board's legal counsel.
- 3.18.4 Record. The administrative assistant shall maintain a computer record and hard copy file that contains the name, addresses of each Professional Land Surveyor and of each authorized firm, along with the respective Certificate of Authorization (C.O.A.) number, date of issuing certificate, kind of certificate, record of fees paid, and actions thereon.
- 3.19 National Council of Examiners for Engineering & Surveying. The Board is a member of the National Council of Examiners for Engineering & Surveying (N.C.E.E.S.) and as such is authorized to conduct N.C.E.E.S. examinations. The Board accepts N.C.E.E.S. Certificates as evidence of licensing in other jurisdictions.
- 3.20 Certificates of Registration & Certificates of Authorization
- 3.20.1 All Certificates of Registration issued to Professional Land Surveyors, Certificates for Land Surveyors-in-Training and Certificates of Authorization shall be signed by the Chairperson and the Secretary of the Board.
- 3.21 Sequence
- 3.21.1 The registration numbers for Professional Land Surveyors will be in numerical sequence and not transferable.
- 3.21.2 The Certificate of Authorization serial numbers will be in numerical sequence and not transferable.

3.22 Fees. The fee schedule, outlined below, lists those requests or submissions which typically require an accompanying fee. This list is provided merely for informational purposes as an example of current fees. The dollar amounts shown are the current fees as of this printing, and the fees may change from time to time without further notice in the Board's discretion. One should always verify the amount with the Board's office before submitting a payment. All application fees are non-refundable.

3.22.1 Land Surveyors

3.22.1(a) Fee to accompany the application:

RI Resident	\$100.00
Out of State Resident	\$150.00

3.22.1(b) Registration Fee:

Registration Fee	\$125.00
Annual Registration Renewal	\$125.00 per year

3.22.1(c) Reinstatement Registration

Within one year	2 x \$125.00=\$250.00
In excess of one year	\$125.00 x the number of years and fractions thereof plus a \$100.00 administrative penalty.

3.22.1(d) Initial and Re-examination fee

RI Resident	\$100.00
Out of State	\$100.00

3.22.2 Certificates of Authorization (COA)

3.22.2(a) Certificate of Authorization (COA) \$50.00 per year (\$10.00 per month fee added to delinquent applications)

3.22.2(b) Renewal of COA \$50.00 per year \$10.00 per month fee added to delinquent applications)

3.22.3 Land Surveyor-in-Training

3.22.3(a) Fee to accompany the application

RI Resident	\$100.00
Out of State Resident	\$150.00

4.0. Applications

- 4.1 Licensing Applications & Certificate of Authorization Applications. Application forms for licensing as a Professional Land Surveyor or Land Surveyor in Training and to obtain a Certificate of Authorization may be obtained from the Board's office. All applications shall be completed in accordance with the instructions contained therein and submitted to the Board's office no later than four months prior to the scheduled date of the examination. The eligibility of each applicant to take the examination shall be as established by Rhode Island General Laws, Title 5, Chapter 8, Paragraph 1, Section 9, as amended from time to time.
- 4.2 Application forms for licensing as a Professional Land Surveyor or Land Surveyor in Training may be obtained from the Department's Division of Design Professional office or the Department's website. All applications shall be completed in accordance with the instructions contained therein and submitted to the Department's Division of Design Professional office no later than four months prior to the scheduled date of the examination. The eligibility of each applicant to take the examination shall be as established by R.I. Gen. Laws § 5-8.1-9, as amended from time to time.
 - 4.2.1 Personal appearance before the Board, if required, shall be at a time and place designated by the Board. The Board reserves the right to review and rescind eligibility to the land surveying registration examination.
 - 4.2.2 The Board may request additional evidence or information in writing to further support the application.
 - 4.2.3 Failure to comply, within sixty (60) days from the date of written request by the Board, for additional evidence or information, or to appear before the Board, when such an appearance is deemed necessary by the Board, may be considered as just and sufficient cause for disapproval of the application.
- 4.3 Applications for Certificates of Authorization (COA) must be submitted to the Office of the Board. Allow a minimum of forty (40) days for properly completed applications to be reviewed and acted on by the Board. See also Rule 5.2.
- 4.4 Application for "Land Surveyor Emeritus" status shall be made in writing to the Board. At the time that such application is made, the applicant must surrender the land surveyor's seal that had previously been issued by the Board. Allow a minimum of forty (40) days for the application to be reviewed and acted on by the Board.
- 4.5 Applicants for examination reciprocity or COA must disclose any and all disciplinary action imposed by other professional registration jurisdictions.
- 4.6 Approval of Applications
 - 4.6.1 All applications shall be considered individually and passed or rejected on a roll call vote of the Board.

- 4.6.2 The action taken on each application shall be recorded in the minutes.
- 4.6.3 An outline of the action taken shall be placed with the application.
- 4.6.4 Applicants shall be promptly notified of the Board's actions.

4.7 Land Surveyor-in-Training Designation

- 4.7.1 Eligibility. The Land Surveyor-in-Training (LSIT) designation shall remain valid indefinitely. An applicant who has met the prescribed requirements, except that he or she holds a LSIT certificate issued by another state or political subdivision of the United States, shall be classified as a Land Surveyor Candidate and may be eligible for admission to the "Principles and Practice" and the "Rhode Island Examination" examinations if he or she has obtained the required Training and Experience. Credit for the Fundamentals of Land Surveying, however, shall be granted only if the certificate already held by the applicant is valid and Active, was issued upon successful completion of a written examination with grades satisfactory to the Board by a legally constituted board of examiners, the examination was adjudged by the Board to be the equivalent of that given in Rhode Island at the time, and reciprocal privileges are granted to residents of Rhode Island by the other state or political subdivision

5. EXAMINATIONS & RE-EXAMINATIONS

5.1 Land Surveyors Registration Examination

- 5.1.1 Notification of Examination - Each applicant will receive written notification from the Board of the time and place of any examination for which he or she has applied and is eligible. Each candidate shall promptly notify the Board of his or her intention either to appear or not appear for the examination. Failure to so notify the Board may result in loss of eligibility for that particular examination.
- 5.1.2 Evaluation of education and Experience / Training credits shall be at the discretion of the Board and in general accordance to NCEES criteria.
- 5.1.3 All applicants are required to comply with such requirements for taking the Land Surveyors Registration Examination as shall be established by NCEES and the Board.
- 5.1.4 The Land Surveyors Registration Examination will be given to all applicants qualifying under R.I. Gen. Laws § 5-8.1-9.
- 5.1.5 The Land Surveyors Registration Examination shall be taken and successfully passed by all applicants.
- 5.1.6 The scope, dates, times and location(s) of the Land Surveyors Registration Examination are established by the Board in conjunction with NCEES.
- 5.1.7 The minimum-passing grade in all subjects of the Land Surveyors Registration Examination shall be as established by the Board and NCEES.

- 5.1.8 Anyone who receives a score of less than 50% on any portion of the examination may not apply for re-examination for at least one (1) year from the date of the failed examination. Anyone failing three (3) times shall be interviewed by the Board before he or she is allowed to retake the exam. No person who fails the exam more than five times will be allowed to be reexamined for a period of five (5) years from the date of the last failed exam.
- 5.1.9 Any candidate who fails over a period of two (2) years to appear for an examination or which he or she is eligible, for whatever reasons, shall have his or her application canceled and his or her application form so marked with the reason therefore. Should he or she desire examination thereafter he or she shall be required to submit a new application.
- 5.2 Land Surveyors Registration Examination Content
The examination will consist of three separate written exams.
- 5.2.1 Fundamentals of Land Surveying - This portion of the examination will be prepared and scored by the National Council of Examiners for Engineering and Surveying (NCEES).
- 5.2.2 Principles and Practice of Land Surveying - This portion of the examination will be prepared and scored by the National Council of Examiners for Engineering and Surveying (NCEES).
- 5.2.3 Rhode Island Examination – This portion of the examination will be a two (2) hour written legal portion and will be prepared by the Board. The exam will include, but not be limited to, questions on boundary law, land use, procedures and practices pertaining to the Practice of Land Surveying within the State of Rhode Island, regulatory permitting, and Rhode Island General Laws pertaining to Land Surveying. All applicants must be familiar with R.I. Gen. Laws § 5-8.1-1 *et seq.* as it pertains to Land Surveying in the State of Rhode Island.
- 5.3 Conduct of the Examination
Examinations shall be conducted under the following general rules:
- 5.3.1 No candidate shall communicate during the examinations with any other candidate in any way without the direct permission of the Proctor.
- 5.3.2 All papers handed in by a candidate shall bear an assigned code number and shall not bear any other identification which can identify the applicant.
- 5.3.3 Textbooks, bound notes and standard printed references may be used as aids during the Rhode Island examination and during any open book portion of an NCEES examination. No solution manuals or booklets are permitted at the exam.
- 5.3.4 Calculators - Silent, non-programmable, self-powered, electronic calculators may be used. The actual calculators used shall be consistent with the current NCEES testing standards at the time the examination is given.

5.4 Examination Review

- 5.4.1 Policy - It is the policy of the Board to utilize review of old examinations administered pursuant to these Rules and Regulations to applicants as a mechanism to assist the applicant to better understand his or her shortcomings and to help that applicant prepare for future examinations. It is not, however, the policy of this Board to permit extensive review of previous exams so that an applicant may become "test wise".
- 5.4.2 Procedure - With the aforementioned policy in effect, the Board will strictly adhere to the following procedures in regards to any requests for review of Land Surveying Fundamentals or Principals and Practice examinations failed by particular applicants. In all cases, the NCEES standards for examination review shall be followed.
- 5.4.3 Any applicant wishing to review his or her prior examination must make a written request for this, to the Board, within fifteen (15) days of the date of mailing of the exam results (Pass/Fail) to the applicant. Such requests must be postmarked within fifteen (15) days of the date appearing on the letter of notification, advising the applicant of his or her exam result. Each applicant requesting a review should include a daytime phone number where they may be reached to schedule an appointment.
- 5.4.4 Upon receipt, by the Board, of a timely request for review of an examination, the Board will assign the particular request to a Board member who will then schedule a review date. Said review date shall be at the convenience of the Board member.
- 5.4.5 All reviews will be conducted in the Department's Division of Design Professionals' offices. An applicant may not receive copies of any examination materials nor may the applicant make copies of or write down examination questions or answers.
- 5.4.6 The duration of each review will be determined by the Board-appointed reviewer.
- 5.4.7 All reviews of prior exams must be completed within seventy-five (75) days of the issuance of the exam results for that examination. There shall be no reviews scheduled, by the Board, of any previous examination within the sixty (60) day period immediately preceding the administering of a Land Surveying Fundamentals or Principles and Practice examination.
- 5.4.8 The Board shall limit the number of times that it reviews previous examinations for an individual applicant to a maximum of two (2), unless the National Council requests the Board to limit the reviews conducted for any particular applicant(s) to one (1) or none (0). In that case, the National Council's request shall govern the Board's policy.

5.5 Re-Examination

- 5.5.1 Professional Land Surveyor

Applicants for registration as a Professional Land Surveyor who have failed the written examination may be given a re-examination upon request and payment of the appropriate re-examination fee.

5.5.2 Land Surveyor-in-Training

Applicants for certification as a Land Surveyor-in-Training who have failed the Fundamentals of Land Surveying examination may be given a re-examination on any future, regularly scheduled, examination date upon request and payment of appropriate re-examination fee. Applications for all examinations and reexaminations must be received by the Board by no later than four months preceding the scheduled examination date.

5.5.3 Requirement for Re-Examination. Registrants are required to be re-examined under the following circumstances:

5.5.4 Individuals who have been suspended from the Practice of Land Surveying by this Board for a period of time in excess of three (3) years, regardless of the reason, shall be required to be re-examined in accordance with Board procedures prior to being re-admitted to the Practice of Land Surveying.

5.5.5 Individuals who have been suspended from the Practice of Land Surveying by this Board for any period of time as a result of a finding by the Board of professional incompetence, professional misconduct and/or professional negligence, may be required to be re-examined in accordance with Board procedures prior to being re-admitted to the Practice of Land Surveying.

5.5.6 Individuals who have been disciplined by this Board (regardless of the length or duration of any suspension or revocation) for reasons of fraud, deceit and/or who has been disciplined by reason of conviction of any felony or crime involving moral turpitude may, in the discretion of the Board, be required to be re-examined in accordance with Board procedures prior to being re-admitted to the Practice of Land Surveying.

5.5.7 Individuals who have been found to be incompetent to continue in the Practice of Land Surveying due to a medical reason shall be required to be re-examined in accordance with Board procedure prior to re-admission to the Practice of Land Surveying unless the individual presents two (2) medical certificates from physicians registered to practice medicine in this state which certificates state that the condition which was the cause or basis of the incompetence has, to a reasonable degree of medical certainty, been removed or has abated to the point that it will not prevent the individual from engaging in the competent Practice of Land Surveying. The Board may, even after the presentation of such certificates, require re-examination, if, in the opinion of the Board, the individual does not appear to be capable of resuming the Practice of Land Surveying.

5.5.8 Individuals who have not re-registered for a period of time in excess of three (3) years, regardless of the reason, shall be required to be re-examined in accordance with Board procedures prior to being re-admitted to the Practice of Land Surveying.

5.5.9 All costs and expenses associated with the re-examination process shall be borne by the individual applying for re-admission.

6. PRACTICE

6.1 An applicant (or firm), who has established eligibility to practice land surveying under the requirements of R.I. Gen. Laws § 5-8.1-1 *et seq.* will, upon payment of the stipulated fee, receive a Certificate of Registration (or Authorization).

6.2 Certificate of Authorization (COA)

6.2.1 Definition. As stated in Rule 2 the terms "Certificate of Authorization" means the certificate issued by the Board which indicates that the sole proprietor, partnership, limited liability partnership, corporation, or Limited Liability Company named in the certificate is permitted to practice land surveying, to offer to practice land surveying, and to solicit and/or broker land surveying services in the State of Rhode Island.

6.2.2 Application for Certificate of Authorization (COA) shall be made as referred to herein.

6.2.3 Eligible Applicants. As provided in R.I. Gen. Laws § 5-8.1-13(b)(1), a sole proprietorship, partnership, limited liability partnership, corporation or limited liability company, subsequently referred to as the "firm", through individuals is permitted; provided that the individuals are in direct control of that practice; exercise personal supervision of all personnel who act in behalf of the firm in professional and technical matters; and are registered under the provisions of R.I. Gen. Laws § 5-8.1-1 *et seq.*; and provided, that the firm has been issued a Certificate of Authorization by the Board.

6.2.4 Every firm must obtain a Certificate of Authorization from the Board and those individuals in direct control of the practice and who exercise direct supervision of all personnel who act in behalf of the firm in professional and technical matters must be registered with the Board.

6.2.5 It is the intent of the Board to establish that the professional land surveyor is responsible for land surveying services.

6.2.6 Every firm desiring a Certificate of Authorization must file with the Board an application for the certificate on a form provided by the Board. A separate form provided by the Board shall be filed with each renewal of the Certificate of Authorization and within thirty (30) days of the time any information previously filed with the Board has changed, is no longer true or valid, or has been revised for any reason. If, in its judgment, the information contained on the application and renewal form is satisfactory and complete, the Board shall issue a Certificate of Authorization for the firm to practice land surveying in this state.

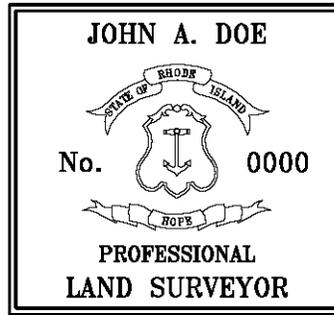
6.2.7 No firm that has been granted a Certificate of Authorization by the Board of land surveyors is relieved of responsibility for the conduct or acts of its agents, employees, partners (if a partnership or a limited liability partnership), officers or directors (if a corporation), or members or managers (if a limited liability company) because of its compliance with the provisions of this section. No individual practicing land surveying

under the provisions of this chapter is relieved of responsibility for land surveying services performed by reason of his or her employment or other relationship with a firm holding a Certificate of Authorization as subsequently described. In the event of unexpected death, retirement, dismissal or any other occasion where an Entity has one person who is a registered land surveyor, and that person no longer can continue in the operation of the Entity, then the Board of registration may waive certain requirements for a Certificate of Authorization, for a period of not longer than forty-five (45) days, provided that the Entity retains a person who is a registered Professional Land Surveyor to review and pursue the duties of surveying that are required under this chapter.

- 6.2.8 A land surveyor may not, for the purposes of this section, be designated as being in Responsible Charge on more than two (2) Certificates of Authorization.
- 6.2.9 Certificates of authorization shall be treated for all purposes hereunder, including, but not limited to, renewal, expiration and lapsing, as previously provided for certificates of registration in R.I. Gen. Laws § 5-8.1-10; provided, however, that renewal may be affected at any time prior to or during the month of June of each even-numbered year (meaning biennially) commencing in year 2004.
- 6.2.10 Limited liability partnerships, corporations and limited liability companies shall submit a copy of their articles of incorporation, articles of organization or certificate of registration in order to obtain a Certificate of Authorization from the Board.
- 6.2.11 The secretary of state shall not issue a certificate of incorporation or certificate of organization or certificate of registration to any applicant, or a registration as a foreign corporation, limited liability partnership or limited liability company, to any firm, which includes among the objectives for which it is being established any of the words "surveyor", "surveying" or any modification or derivation of those words, unless the Board has issued for the applicant a Certificate of Authorization or a letter indicating the eligibility of the applicant to receive the certificate. The firm applying shall supply the certificate or letter from the Board with its application for incorporation or registration as a foreign corporation, limited liability partnership or limited liability company.

6.3 Professional Land Surveyor's Seal & Stamp

- 6.3.1. SEAL and/or Stamp - The seal and/or Stamp shall be approximately 1-½ square. The State emblem and Professional Land Surveyor's registration number shall appear in the center. The Professional Land Surveyor's name shall appear above the State Emblem / Registration Number and words 'Professional Land Surveyor' shall appear below the State Emblem / Registration Number per the following example;



- 6.3.2 The Board shall loan each Professional Land Surveyor the right to purchase an individual stamp capable of imprinting the seal to be used, as hereinafter directed in the following paragraph, on all documents prepared by the Professional Land Surveyor or under the Professional Land Surveyor's responsible control, for use in the State of Rhode Island, for the purpose of properly imprinting the drawings, reports and other documents. A digital facsimile of the seal may be used in lieu of the hand Stamp. (See Rule 2.21).
- 6.3.3 The seal shall be applied on documents so as to produce legible reproduction on all copies or prints made from the documents. After application of the seal, the Professional Land Surveyor's name shall be hand signed in ink across the imprinted seal, and dated below the seal. Electronic signature and dating is not permitted.
- 6.3.4 The Professional Land Surveyor shall imprint the seal only if in responsible control of the project.
- 6.3.5 Upon revocation or suspension of his or her certificate of registration, or upon expiration of the certificate without renewal, a Professional Land Surveyor shall surrender his or her Stamp to the Board.
- 6.3.6 Upon the death of any Professional Land Surveyor registered under this chapter, that person(s) appointed to administer the estate of the decedent shall surrender the Stamp of the deceased Professional Land Surveyor to the Board.

7. CONTINUING EDUCATION

- 7.1 Purpose & Scope. In order to safeguard life, health, and property, and to promote the public welfare, the practice of Professional Land Surveying in Rhode Island requires continuing education in accordance with this document. The Board is authorized pursuant to R.I. Gen. Laws § 5-8.1-4(b) to establish continuing education requirements and standards as it deems appropriate, and in furtherance thereof promulgates the within rules and regulations concerning continuing education (the "CE Regulations").
- 7.2 Each in-state and out-of-state registrant shall be required to meet the continuing educational requirements of these CE Regulations for professional development as a condition for registration renewal. Continuing education should maintain and develop new and relevant skills and knowledge.

7.3 As of July 1, 2003 all applicants for renewal for registration shall satisfy these minimum requirements.

7.4 Basic Requirements

7.4.1 Commencing on July 1, 2003, and each Biennium thereafter, a Registrant seeking renewal of Active registration must, as a prerequisite to renewal, submit satisfactory evidence to the Board of having obtained Twenty (20) PDH's during the Biennium immediately preceding application for renewal.

7.4.2 Commencing on July 1, 2017, and each Biennium hereafter, a registrant seeking renewal of Active registration must, as a prerequisite to renewal, submit satisfactory evidence to the Board of having obtained a minimum of ten (10) PDH's during the previous Biennium from activities which do not include correspondence courses, internet courses, or courses available from online sources.

7.4.3 A new Registrant is not required to satisfy the continuing education requirements prescribed herein until the registration renewal occurring on the Three (3) year anniversary of his or her date of initial registration.

7.4.4 A maximum of ten (10) PDHs may be carried over with full credit to the next Biennium.

7.5 Conversion Table

Conversions from the other measures of continuing education activities to PDH's are as follows:

7.5(a) Fifty (50) minutes of approved and acceptable professional seminar activity = 1 PDH

7.5(b) One (1) semester credit of approved and acceptable college/university course work = 5 PDH

7.5(c) Fifty (50) minutes of approved and acceptable professional activity pursuant to Section 7.6 = 1 PDH

7.6 Types of Acceptable Continuing Education / Approval of Programs for Registrants

7.6.1 Continuing education activities for which PDH credits may be considered for approval by the Board include: college and university courses which directly relate to the Practice of Land Surveying as determined by the Board successfully completed with a grade of "C" or better, or the equivalent, and those portions of technical meetings, seminars, tutorials, short courses and correspondence course that are directly related to the Practice of Land Surveying as determined by the Board.

7.6.2 The Board will grant credit for only such continuing education activities that the Board determines to satisfy the following criteria:

- 7.6.2(a) There is clear purpose and objectivity for each activity;
 - 7.6.2(b) The content of each presentation is well organized and presented in a sequential manner, and the content thereof is sufficiently advanced in nature as pertaining to the Practice of Land Surveying;
 - 7.6.2(c) There is evidence of pre-planning which may include the opportunity for input by the target group to be served;
 - 7.6.2(d) The presentation will be made by persons who are well-qualified by reason of education or Experience; and
 - 7.6.2(e) There is provision for individual participant registration which will include information required for record keeping and reporting.
- 7.6.3 The Board will grant no credit to a Registrant for a course, technical meeting, seminar, tutorial, short course, or correspondence course repeated by that Registrant within Two (2) years (if credit was originally granted), unless, in the Board's opinion, there is a substantial change in the content of such course, technical meeting, or the subject matter warrants award of additional credit.
- 7.6.4 Other activities which may be used to satisfy continuing education requirements in the Board's discretion are:
- 7.6.4(a) Approved programs conducted by corporations, government agencies or other organizations;
 - 7.6.4(b) Authorship of published papers, articles or books; and
 - 7.6.4(c) First-time preparation for and presentation at technical meetings, short courses or seminars;
 - 7.6.4(d) The preparation for and presentation of approved credit courses at Board approved educational institutions.
- 7.6.5 PDH credits will be awarded for memberships and service in societies and associations as follows:
- 7.6.5(a) Verified membership in a Rhode Island land surveying society or association recognized as having valid, objective, and independent existence by the Board shall receive 4 PDH's per year, with a maximum of 8 PDH's per Biennium, provided that the Registrant attend at least 50% (fifty percent) of the organization's meetings; or 1 PDH per year with a maximum of 2 PDH's per Biennium for membership in such organization without meeting said 50% attendance requirement;
 - 7.6.5(b) Verified membership and participation in any other national, regional or state land surveying society or association recognized as having valid,

objective and independent existence by the Board shall receive 2 PDH's per year, with a maximum of 4 PDH's per Biennium;

7.6.5(c) Serving as an officer, director, or committee chairperson in any national, regional or state land surveying society or association recognized as having valid, objective and independent existence by the Board shall receive 2 PDH's per year, not to exceed 6 PDH's per Biennium;

7.6.5(d) Serving on a State Board of Licensure for Land Surveyors shall receive 4 PDH's per year, with a maximum of 8 PDH's per Biennium;

7.6.5(e) Serving as a chairperson, vice chairperson, or secretary of a State Board of Licensure for Land Surveyors shall receive 1 PDH per year, with a maximum 2 PDH's per Biennium;

7.6.6 A Registrant seeking to take a course or program which has not been previously approved by the Board may apply in writing to the Board for pre-approval or post-approval of the course or program offering. Any such request for pre-approval shall require that the course materials and information be provided to the Board no less than Sixty (60) days prior to the date of such course or program. Any such request for post-approval shall require that all applicable course materials and information as well as proof of attendance be provided to the Board within Ninety (90) days of the date of such course or program. Failure of the Board to act on such written application within Ninety (90) days of receipt by the Board shall constitute approval of such course or program as submitted.

7.6.7 All activities submitted to the Board for PDH's are subject to approval by the Board in its discretion.

7.6.8 The Board may seek advice and consultation concerning its determination of acceptable continuing education activities from the Rhode Island Society of Professional Land Surveyors, from educational institutions offering courses or programs concerning land surveying, and from such other sources as the Board may from time to time determine.

7.7 Reports & Records

7.7.1 At the time of application for registration renewal, each Registrant shall report, on a form provided by the Board, the continuing education activities undertaken during the preceding Biennium along with appropriate supporting documents concerning attendance and/or participation.

7.7.2 All Registrants shall maintain a file, in which records of continuing education activities are kept, including dates, subjects, duration of programs, printed program schedules, registration receipts or other proof of participation, and other appropriate documentation, for a period of Four (4) years after the date of the program or activity.

7.8 Sponsors. Any Sponsor that offers an organized continuing education program contemplated

by these CE Regulations, for which credit will be requested from the Board, shall keep a record of attendees at each session and shall furnish the Board a copy of said record of attendees within Ninety (90) days of the conclusion of the program.

7.9 Approval of Programs for Sponsors

7.9.1 Pre-approval of any program intended to be offered by a Sponsor may be granted to the Sponsor if the following information is submitted to the Board no less than Sixty (60) days prior to the date of such course or program:

7.9.1(a) Instructors and their qualifications; and

7.9.1(b) Synopsis of course material.

7.9.1(c) Such other information as the Board may request.

7.9.2 Upon completion of any approved course, the Sponsor shall submit to the Board the record of attendees and the time, place, and schedule of activities within Ninety (90) days of the date of such course or program.

7.10 Audits. The Board may conduct audits of continuing education activities and Registrants' participation therein in its discretion. Should deficiencies be discovered, Registrants will be notified of the same and have Six (6) months to correct the deficiencies, except where such audits reveal fraudulent misrepresentations to have been made by a Registrant.

7.11 Reciprocity. The Board will deem a Registrant to have met the continuing education requirements provided herein if such Registrant, when making annual renewal of Rhode Island registration, certifies in writing the following:

7.11.1 The Registrant resides in another state or territory which has been recognized by the Board as having continuing education requirements both equivalent to the within CE Regulations and acceptable to the Board.

7.11.2 The Registrant has currently satisfied all continuing education and registration requirements of that state or territory. Otherwise, a Registrant residing in another state or territory must satisfy the requirements specified in these CE Regulations.

7.12 Noncompliance. Unless a request for Inactive status is made, any Registrant failing to furnish the required continuing education form prepared and/or adopted by the Board, properly completed and signed, shall not be granted renewal of registration by the Board and shall lose the right to practice land surveying in the State of Rhode Island upon the expiration of registration.

7.13 Hardships. Notwithstanding any other provisions of these CE Regulations to the contrary, the Board may exempt a Registrant from complying with all or part of the continuing education requirements herein for a given year in the following cases:

7.13.1 A Registrant affected by physical disability, illness, or other extenuating circumstances

as reviewed and approved by the Board on a case-by-case basis; provided that adequate supporting documentation is furnished to the Board; or

7.13.2 A non-career military Registrant serving on active duty in the armed forces of the United States for a period of One Hundred Twenty (120) consecutive days in a calendar year; provided that the adequate supporting documentation is furnished to the Board.

7.14 Inactive Registrants / Reinstatement to Active Registration

7.14.1 A registered Professional Land Surveyor may request, in writing, to be placed on the Board's Inactive role, thereby obtaining inactive status.

7.14.2 An Inactive Registrant will be permitted to retain that Registrant's original certificate of registration without submitting proof of complying with the continuing education requirements prescribed herein.

7.14.3 An Inactive Registrant may not engage in the Practice of Land Surveying in the State of Rhode Island. Any practice or offer to practice land surveying in the State of Rhode Island by an Inactive Registrant shall constitute misconduct and shall be cause for revocation or suspension of certificate by the Board, or such other remedies as are provided by R.I. Gen. Laws § 5-8.1 *et seq.*

7.14.4 An Inactive Registrant seeking to reinstate an Inactive registration of one (1) year or more must submit a request, in writing, to the Board accompanied by the required fee and must satisfy one (1) of the following requirements:

7.14.4(a) Satisfaction of One-Half (1/2) the Biennium PDH requirements multiplied by the number of the years of Inactive status up to a maximum of Forty-Five (45) PDH's subject to review and approval by the Board; or

7.14.4(b) Successful completion of the NCEES examination of Principles and Practice of Land Surveying within one (1) year immediately prior to application for reinstatement.

7.14.5 An Inactive Registrant seeking to reinstate an Inactive registration of less than One (1) year must meet One-Half (1/2) the Biennium PDH requirement.

8. PROFESSIONAL STANDARDS AND CONDUCT

8.1 Preamble

8.1(a) To comply with the purpose of the R.I. Gen. Laws § 5-8-1 *et seq.* as amended, which is to safeguard life, health and property, to promote the public welfare and to establish and maintain a high standard of integrity and practice, the State Board of Registration for Professional Land Surveyors has developed the following "Rules of Professional Conduct" as a Code of Ethics.

8.1(b) The Rules of Professional Conduct as promulgated herein are an exercise of the police power granted to the Board by virtue of the acts of the Rhode Island General Assembly. The Rules of Professional Conduct shall be binding on all corporations, municipalities, state agencies, partnerships, sole proprietorships or other legal entities authorized to practice land surveying services in the State of Rhode Island.

8.1(c) All persons registered under R.I. Gen. Laws § 5-8-1 *et seq* are charged with having knowledge of the existence of these Rules of Professional Conduct, and shall be deemed to be familiar with their provisions. Each registrant is charged with the responsibility of adhering to standards of high ethical, moral and professional conduct in all aspects of the Practice of Land Surveying.

8.1(d) In these Rules of Professional Conduct, the word “registrant” shall mean any person or Entity holding either a registration or a Certificate of Authorization issued by this Board to practice land surveying.

8.2 Fundamental Canons

Registrants, in the fulfillment of their professional duties, shall abide by the following fundamental canons:

8.2.1 Duty to the Public. Registrants shall at all times recognize that their primary obligation is to protect the life, health, and property, and to promote the public welfare. If their professional judgment is overruled under circumstances where the life, health, and public welfare are endangered, they shall notify their employer or client and such other authority as may be appropriate. Registrants 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.

8.2.2 In engaging in the Practice of Land Surveying, a registrant shall act with reasonable care and competence, and shall apply the technical knowledge and skill which are ordinarily applied by Professional Land Surveyors of good standing, practicing in the same locality.

8.2.3 Registrants may express publicly a professional opinion on technical subjects only when that opinion is founded upon adequate knowledge of the facts and competence in the subject matter.

8.2.4 Registrants shall avoid improper solicitation of professional employment.

8.2.5 A registrant shall comply with the registration laws and regulations governing his or her professional practice in any jurisdiction. A registrant may be subject to disciplinary action if, based on grounds substantially similar to those which may form the basis for disciplinary action in this jurisdiction, the Professional Land Surveyor was disciplined in any other jurisdiction.

8.3 Use of Seal

- 8.3.1 Registrants shall approve, seal and certify only those plats, documents, and reports that conform to current land surveying standards adopted by this Board, which safeguard the life, health, and property, and to promote the public welfare.
 - 8.3.2 The application of a Professional Land Surveyor's seal shall indicate that the registrant has exercised direct control and personal supervision over the work to which the seal is affixed. Therefore, no registrant shall affix a name, seal, or certification to a plat, drawing, specification, design, or other work constituting the Practice of Land Surveying which has been prepared by an unregistered or uncertified person or firm unless such work was performed under the direct control and supervision of the Professional Land Surveyor.
 - 8.3.3 A registrant shall apply a seal to final and complete plans, drawings, plats, reports, designs, and specifications, prepared by him/her. All seal imprints on final documents shall also bear a signature and date.
 - 8.3.4 Uncompleted or preliminary documents shall be clearly marked and identified as such and need not be sealed or signed.
 - 8.3.5 Application of the seal and signature indicates acceptance of responsibility by the registrant sealing said documents for all work shown thereon unless clearly indicated in writing on each sheet.
 - 8.3.6 The failure to conform to the above requirements shall constitute the failure to seal a document.
- 8.4 Duty to Avoid Conflicts of Interest
- 8.4.1 Registrants shall act in professional matters for each employer or client as faithful agents or trustees, and shall avoid conflicts of interest.
 - 8.4.2 Registrants shall disclose all known potential conflicts of interest to their employers or clients by promptly informing them of any business association, interest, or other circumstances which could influence their judgment or the quality of their services.
 - 8.4.3 Registrants 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 to, and agreed to, by all interested parties.
 - 8.4.4 Registrants in public service as members, advisors or employees of a governmental body or department shall not participate in decisions with respect to professional services solicited or provided by them to their organizations.
 - 8.4.5 Except upon public disclosure of all pertinent facts and circumstances and consent of appropriate authority, Registrants shall neither solicit nor accept a

professional contract from a governmental body on which a Principal or officer of their organization serves as a member.

- 8.4.6 Registrants shall not falsify or permit misrepresentation of their, or their associate's, 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 incident to the solicitation of employment shall not misrepresent pertinent facts concerning employers, employees, associates, joint ventures, or past accomplishments with the intent and purpose of enhancing their qualifications and their work.
- 8.4.7 Registrants shall not offer, give, solicit, or receive, either directly or indirectly, any commission, gift, or other valuable consideration in order to secure work, and shall not make any political contribution in an amount intended to influence the award of a contract.
- 8.4.8 Registrants shall issue no statements, criticisms, or arguments on technical matters which are inspired or paid for by interested parties, unless the registrants 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 registrants may have in the matters.

8.5 Other Ethical Proscriptions

It shall be considered unprofessional for a Professional Land Surveyor:

- 8.5.1 To act for his or her client or employer in professional matters other than as a faithful agent or trustee.
- 8.5.2 To injure, maliciously or falsely, directly or indirectly, the professional reputation, prospects, practice, or employment of other registrants, nor indiscriminately criticize other registrants' work, nor issue statements regarding the practice or works of other registrants, public or otherwise, which could reasonably be construed to harm the reputation or business prospects of another registrant excepting therefrom any obligation of a registrant to report misconduct when required hereunder or when otherwise required by applicable law, code or regulation.
- 8.5.3 To attempt to supplant another Professional Land Surveyor or professional service provider after that professional's services have been retained.
- 8.5.4 To advertise in self-laudatory language or other manner derogatory to the dignity of the profession.
- 8.5.5 To attempt to circumvent Rhode Island General Laws by reviewing and stamping plans when not the Professional Land Surveyor in direct "responsible charge" as defined by Law.

- 8.5.6 To assist in filing an application for “Certificate of Authorization” by appearing as the Professional Land Surveyor in “Responsible Charge” when he or she does not meet the requirements for “Responsible Charge.”
- 8.5.7 To review or continue the work of another surveyor for the same client or subsequent client except by notifying such surveyor in writing. In cases where it is explicitly clear that the surveyor has been terminated and notified by his or her client, the provisions of this paragraph are exempted.
- 8.5.8 To review or continue the work of another surveyor for the same client or subsequent client when fees remain outstanding except by notifying such surveyor and the client in writing.
- 8.5.9 To Stamp or modify another surveyor's plans without his or her prior written consent or without specifying the nature and the extent of the revisions. All revisions, additions, and deletions are to be duly noted and characterized upon or within the report, document or plan, and shall be consistent with all other precepts regarding “responsible charge” contained in the Rules.
- 8.5.10 To willfully and knowingly violate the provisions of R.I. Gen. Laws § 5-8.1 as amended or to assist any person or Entity seeking to do so.

9. PROCEDURAL AND TECHNICAL STANDARDS

New projects commencing January 1, 2016 or thereafter shall conform to the Procedural and Technical Standards set forth in this Section 9. Projects ongoing at the time of the adoption of these new standards shall come into conformance with these new standards no later than June 30, 2016. During the transition period, the prior Procedural and Technical Standards attached as Exhibit A shall apply.

9.1 Types of Surveys

9.1.1 General

The *type of survey* identifies the purpose and the content of the survey. The selection of a *type of survey* is made based on the reason for conducting the surveying services and/or for developing the final mapping products.

The *class of survey* identifies the measurement standards employed to collect data in the field. The *class of survey* (e.g. the measurement standards of precision, accuracy, methods and instrumentation employed) shall be consistent with the *type of survey* conducted.

9.1.2 Types of Surveys

Types of surveys include Boundary Surveys, Data Accumulation Surveys, Construction Surveys, Control Surveys and Compilation Plans. Types are defined and described in Section 9.2 through 9.6 following.

9.2 Boundary Surveys

9.2.1 General

A *boundary survey* is defined as the process of investigating, collecting and evaluating real property evidence from recorded, field, and other relevant sources, in order to formulate a professional opinion regarding the location of property boundaries. That opinion may be reported or published in different formats. The quality of the data and analysis sufficient to render the opinion, as well as to prepare any plan or report, shall meet the minimum standards set forth herein.

SECTIONS 9.2-3 through 9.2.9 are intentionally excluded and reserved.

9.2.10 Comprehensive Boundary Surveys

9.2.11 General

A. Definition

1. A *comprehensive boundary survey* is a type of survey that formulates a professional opinion and reports the position of boundaries with respect to:

- (a) substantial physical improvements and features, including buildings;
- (b) recorded easements and observed evidence of their use;
- (c) recorded and observed means of ingress and egress; and
- (d) lines of physical occupation, including fences, walls, hedges and other such features;

2. A plan which summarizes the results of a comprehensive boundary survey shall depict or note:

- (a) conflicts with recorded deed descriptions and/or plans;
- (b) observed encroachments; and
- (c) monuments recovered and/or set.

9.2.12 Procedural Standards for Comprehensive Boundary Surveys

A. Research and Preliminary Analysis.

The Professional Land Surveyor (PLS) shall:

1. Review legal description(s) of the property to be surveyed.
2. Review legal descriptions of abutting properties.
3. Where appropriate, conduct records research to analyze related senior and junior rights.
4. Review recorded (land evidence) documents affecting the survey.
5. Where appropriate, search for unrecorded survey information.
6. Review plans, documents and field notes affecting the survey that may be available from utility companies, State and municipal agencies, and other relevant private and public sources.
7. Where applicable, review state and municipal ordinances which pertain to the survey.
8. Evaluate and analyze the data.
9. Form preliminary conclusions as to the completeness of data and identify inconsistencies in the record information.

10. Formulate procedure for performing the field investigations and field data collection.

B. Field Investigation.

The PLS shall:

1. Search for and locate physical evidence and monuments and weigh their reliability.
2. Investigate parole and written evidence which impacts the positions of control monuments.
3. Where feasible, the survey shall be referenced to the Rhode Island State Plane Coordinate System.
4. Make observations and measurements to correlate existing evidence.
5. Take sufficient check measurements to verify the observations.
6. Locate substantial physical features, observed evidence of easements, observed means of ingress and egress, lines of physical occupation, and observed encroachments.
7. All field notes, measurements and observations made during the course of the survey shall be recorded in an appropriate form, and in a manner that is intelligible to other surveyors. These notes should indicate site location, street names, personnel, instrument identifications, date of observations, and weather conditions affecting measurements. Nothing herein shall preclude the use of electronic data collectors for the recordation of field notes.

C. Computations, Analysis of Data and Formation of Conclusions.

The PLS shall:

1. Calculate the position of the field evidence and analyze its consistency with record evidence.
2. In the event of substantial conflict with the work of another professional, the PLS shall make reasonable efforts to contact that professional and investigate the conflict.
3. Evaluate the data in accordance with professional principles, the law and/or precedent, and formulate a professional opinion regarding the location of property lines.
4. Provide monumentation of the survey on the ground in accordance with Section 9.2.13-B.
5. Retain all records that may be used to substantiate conclusions.

9.2.13 Technical Standards for Comprehensive Boundary Surveys

A. Measurements

1. Measurements shall be taken to a precision that is compatible with the relevance of the located feature to the boundary report.
2. Measurements shall be taken with properly calibrated instruments.
3. Any parcel of land that has an irregular boundary or a mathematically indefinable boundary shall have a closing “tie line” in the vicinity of the irregular boundary.

B. Monuments for Comprehensive Boundary Surveys

1. Monuments shall be established at not less than seventy percent (70%) of all corners in the boundary which define a deflection angle that exceeds sixty degrees (60°), and no point on a boundary shall be located more than five hundred (500) feet from a monument.
2. Monuments shall be established in accordance with Section 9.8.

C. Plans for Comprehensive Boundary Surveys

When a plan for a Comprehensive Boundary Survey is prepared, the elements identified in Section 9.7.1 and 9.7.2 shall be included on the plan.

D. Certification for Comprehensive Boundary Surveys

When a plan for a Comprehensive Boundary Survey is prepared, the certification identified in Section 9.7.3 shall be included on the plan.

9.2.20 Limited Content Boundary Surveys

9.2.21 General

A. Definition

A *Limited Content Boundary Survey*, as with a Comprehensive Boundary Survey, involves the process of investigating, collecting and evaluating real property evidence from recorded, field and other relevant sources in order to formulate a professional opinion regarding the location of boundaries. It differs from a Comprehensive Boundary Survey in that its scope is designed to meet a specific need of a client or regulating authority. That need can be met by a plan, report or field outcome that is less all-inclusive than would result from a Comprehensive Boundary Survey.

B. Examples of Limited Content Boundary Surveys

1. Building Location Survey

A survey that depicts or notes the position of existing or proposed buildings on the property with respect to boundaries, record easement lines and pertinent municipal setback requirements and deed restrictions. No other improvements or features need be depicted.

2. Dimensional Conformance Survey

A survey that depicts or notes the position of existing or proposed improvements with respect to boundary lines. The purpose of this survey is to enable a determination as to the conformity with municipal dimensional requirements. Only those portions of the boundaries pertinent to the issues being addressed must be depicted. No other improvements need be depicted.

3. Feature Location Survey

A survey that depicts or notes the position, horizontally and/or vertically, between existing and proposed improvements. No other improvements or features need be depicted.

4. Easement Survey

A survey that depicts and notes the position of an existing or proposed easement with respect to:

- a. boundary monumentation found or set;
- b. physical improvements and features;
- c. other record easements and visible evidence of the use thereof; and
- d. unresolved conflicts with record deed descriptions and maps.
- e. all visible encroachments.
- f. where boundaries are intersected by the easement lines, a statement of their type and class shall be made.

5. Boundary Stake-Out Survey

A survey that marks or monuments a parcel's boundary corners or lines.

6. Perimeter Survey

A survey that maps only a strip of land along the boundaries. Within such limited area, this survey documents the boundary location and the evidence of occupation on the subject parcel (and where practical on adjoining parcels) by depicting and noting the boundary position with respect to:

- a. substantial physical improvements and features;
- b. easements and visible evidence of the use thereof;
- c. record and apparent means of ingress and egress;
- d. lines of occupation, including fences, walls, hedges and other such features;
- e. conflicts with record deed descriptions and plans;
- f. apparent boundary encroachments, and
- g. monumentation recovered and/or set.

9.2.22 Procedural Standards for Limited Content Boundary Surveys

A. Research and Preliminary Analysis.

The PLS shall:

1. Review legal description(s) of the property to be surveyed.
2. Review legal descriptions of all abutting properties.
3. Where relevant, perform deed research so as to analyze related senior and junior rights for the property to be surveyed and for all abutting properties.
4. Review copies of recorded (land evidence) documents affecting the survey.
5. Where feasible, search for abutting/adjoining unrecorded survey information.
6. Review from utility companies, state and municipal offices, title companies and other appropriate sources of information, including known private, and other public sources, the available plans, documents and field notes affecting the survey.

7. Where applicable, obtain copies of the state and municipal ordinances that pertain to the area of the survey.
8. Examine and analyze the data.
9. Form preliminary conclusions as to the completeness of data and identify inconsistencies in the record information.
10. Formulate procedure for performing the field investigations and field survey.

B. Field Investigation.

The PLS shall:

1. Search for and locate physical monuments and weigh their reliability.
2. Investigate possible parole and written evidence (e.g. unrecorded deeds) supporting positions of lost control monuments.
3. Take measurements to correlate existing evidence.
4. Whenever feasible, connect the survey to the Rhode Island State Plane Coordinate System.
5. Take sufficient check measurements to verify the observations.
6. Locate physical occupation lines (e.g. fences, hedges, walls, etc.) between abutting properties. Where applicable, advise client to review with legal counsel matters pertaining to adverse possession, the laws of acquiescence and other unwritten rights.
7. All field notes, measurements and observations made during the course of the survey shall be recorded in an appropriate form, and in a manner that is intelligible to other surveyors. These notes should indicate site location, street names, personnel, instrument identifications, date of observations, and weather conditions affecting measurements. Nothing herein shall preclude the use of electronic data collectors for the recordation of field notes.

C. Computations, Analysis of Data and Formation of Conclusions.

The PLS shall:

1. Calculate the position of the field evidence and analyze its consistency with record evidence.
2. In the event of substantial conflict with the work of another professional, the surveyor shall make reasonable efforts to contact that professional and investigate the matter.
3. Evaluate the data in accordance with professional principles, the law and/or precedent, and draw conclusions regarding the location of property lines.
4. Retain all records that may be used to substantiate conclusions.

9.2.23 Technical Standards for Limited Content Boundary Surveys

A. Measurements

1. Measurements shall be taken to a precision that is compatible with the relevance of the located feature to the boundary report.
2. Measurements shall be taken with properly calibrated instruments.
3. Any parcel of land that has an irregular boundary or a mathematically indefinable boundary shall have a closing “tie line” in the vicinity of the irregular boundary.

B. Monuments for Limited Content Boundary Surveys

1. The density of monuments shall be consistent with the purpose of the Limited Content Boundary Survey.

2. A sufficient number of monuments must be provided to enable the reproduction of the surveyed lines on the ground. Such monumentation shall not consist of fewer than two (2) monuments.
3. Monuments shall be established in accordance with Section 9.8. See especially 9.8.1.9.

C. Plans for Limited Content Boundary Surveys

When a plan for a Limited Content Boundary Survey is prepared, the elements identified in Section 9.7.1 and 9.7.2 shall be included on the plan.

D. Certification for Limited Content Boundary Surveys

When a plan for a Limited Content Boundary Survey is prepared, the certification identified in Section 9.7.3 shall be included on the plan.

9.3 Data Accumulation Surveys.

9.3.1 General

A. Definition

A *data accumulation survey* is designed to collect measurement data by field surveys and to depict and report the relative positions of existing physical objects and existing site conditions.

B. Examples of Data Accumulation Surveys

1. A *topographic survey* is a survey of the natural and man-made features of a part of the earth's surface by remote sensing and/or ground measurements in order to determine horizontal and vertical spatial relations.
2. A *hydrographic survey* is a survey of water bodies that may include the depth of water and the configuration of the bottom, directions and force of current, heights and times and water stages, and location of fixed objects for survey and navigation purposes.
3. A *planimetric survey* is a survey that presents the relative horizontal positions for features only, distinguished from a topographic survey by the omission of relief or elevations.
4. An *as-built survey* is a survey performed to obtain horizontal and vertical dimensional data about constructed improvements in order to depict and report their positions for the record.
5. Such *other surveys* designed to collect and report data as may be described in a statement regarding the purpose of the data accumulation survey.

C. Property Lines

If a *data accumulation survey plan* depicts the location of property boundary lines or aims to show the relative positions (especially by dimensioning) between proposed or constructed improvements and boundaries, then a separate certification of the type of boundary survey shall be made.

9.3.2 Procedural Standards for Data Accumulation Surveys.

A. Research and Preliminary Analysis.

The PLS shall:

1. Determine the purpose of the survey, the specific items of data to be accumulated and the degree of completeness and accuracy necessary.
2. Obtain from public agencies and utility companies, and local land evidence records copies of available deeds, maps and plans pertinent to the survey.
3. Review the available descriptions of monuments referencing the horizontal and vertical datums upon which the work is to be based.
4. Examine and analyze the data.
5. Form preliminary conclusions as to the completeness of data and identify inconsistencies in the record information.
6. Plan procedure for performing the field survey.

B. Field Investigation.

The PLS shall:

1. Search for and locate and verify monuments referencing horizontal and vertical datums.
2. Establish, adjust and monument necessary control lines to which the survey is to be referenced.
3. Extend the survey a reasonable distance beyond the limits of the project to include physical characteristics that may affect the site.
4. Take sufficient check measurements to verify the observations.
5. All field notes, measurements and observations made during the course of the survey shall be recorded in an appropriate form, and in a manner that is intelligible to other surveyors. These notes should indicate site location, street names, personnel, instrument identifications, date of observations, and weather conditions affecting measurements. Nothing herein shall preclude the use of electronic data collectors for the recordation of field notes.

C. Computations, Analysis of Data and Formation of Conclusions.

The PLS shall:

1. Make any reductions and compilations necessary.
2. Make necessary computations to verify correctness of measurements.
3. Evaluate and edit collected data, where applicable.
4. Prepare in an appropriate form, the results of the survey in a concise manner to minimize misinterpretation.

9.3.3 Technical Standards for Data Accumulation Surveys.

A. Measurements

1. Measurements shall be taken to a precision that is compatible with project needs and with the size and geometric shape of the parcel involved.
2. Measurements shall be taken with properly calibrated instruments.
3. Vertical
 - a. Where feasible, elevations shall be referenced to the National American Vertical Datum of 1988 [NAVD 88] or other locally recognized datum.
 - b. A statement shall be made on all associated mapping as to the Class Standard of the leveling survey.
 - c. A minimum of two (2) project benchmarks shall be established on each site, and their locations, elevations and datum base shall be shown on the final plan. The reference benchmark upon which the project benchmarks are based shall also be indicated.
4. Topographic (manual):
 - a. Measurements shall be taken with a precision compatible with the nature and specifications of the project.
 - b. Vertical measurements shall be taken to the nearest hundredth of a foot when locating such “hard” features as building floor elevations, manholes, curbing, pipe inverts, pavement, etc.
 - c. Vertical measurements shall be taken to the nearest tenth of a foot when locating such “soft” features as natural ground, water levels, etc.
5. Topographic (aerial):
 - a. Photogrammetric surveys shall conform to the standards published by the Federal Geographic Data Committee found in “Geospatial Positioning Accuracy Standards Part 3: National Standard for Spatial Data Accuracy” (FGDC – STD – 007.3 – 1998), as may be amended.
 - b. The square root of the miles is intentionally omitted from V-3
 - c. The maximum sight distance is suggested to ensure repeatability.

B. Monuments for Data Accumulation Surveys

1. The control lines or points to which the survey is referenced shall be marked with physical monuments set in a manner providing a degree of permanence consistent with the terrain, physical features and purpose of the survey
2. Monuments shall be established in accordance with Section 9.8.

C. Plans for Data Accumulation Surveys.

1. The client may be furnished the results of the survey in an appropriate form (e.g. plans, sketches, cross-sections, diagrams, tabulations, electronic files, etc.)

When a plan is prepared, in addition to the requirements of Section 9.7.1, it shall include the following:

- a. A statement describing the data accumulation methods employed (e.g. field survey, aerial photogrammetry, etc.) shall be included.
- b. If a portion of the data is compiled from secondary sources, those sources must be disclosed, together with a statement clarifying the extent to which the accuracy of such data was verified. Compiled data is subject to the restrictions set forth in Section 9.6.
- c. Identification of the horizontal and vertical datums to which the measurements are referenced.
- d. If property boundaries are shown, a statement of their Type per Section 9.1 and their Class per Section 9.9 shall be made.

D. Certification for Data Accumulation Surveys

When a plan for a Data Accumulation Survey is prepared, the certification identified in Section 9.7.3 shall be included on the plan.

9.4 Construction Surveys.

9.4.1 General

A. Definition.

A construction survey is a survey whereby the PLS locates and identifies the horizontal and vertical positions of proposed construction or improvement. A PLS shall approach a construction survey in the same manner as other surveys in which a high degree of positional accuracy is required.

9.4.2 Procedural Standards for Construction Surveys

A. Research and Preliminary Analysis for Construction Surveys.

The PLS shall:

1. Obtain from the client the approved specifications and plans setting forth the project for which the layout survey is to be conducted.
2. Review from known private and public sources available copies of data affecting the project.
3. Determine the appropriate number of control points to be established and the relationship of said points to the proposed construction.
4. Examine and analyze the data.
5. Form preliminary conclusions as to the completeness of data and identify inconsistencies in the record information.
6. Plan the procedure for performing the construction layout.

B. Field Procedures for Construction Surveys.

The PLS shall:

1. Search for, locate, and verify monuments, lines or objects indicated by the construction documents as the intended references for the project's horizontal and vertical datums.

2. When appropriate, establish, adjust and monument control points and lines required for the final layout surveys.
3. Take sufficient check measurements to verify the observations.
4. All field notes, measurements and observations made during the course of the survey shall be recorded in an appropriate form, and in a manner that is intelligible to other surveyors. These notes should indicate site location, street names, personnel, instrument identifications, date of observations, and weather conditions affecting measurements. Nothing herein shall preclude the use of electronic data collectors for the recordation of field notes.
5. Immediately bring to the attention of the client and the author of the design plan such inconsistencies as may be disclosed by examination of the plans.

C. Computations, Conclusions for Construction Surveys.

The PLS shall:

1. Make necessary computations to verify the accuracy of measurements.
2. In the event of the discovery of any discrepancies between the construction documents and the layout as surveyed, notify the client, and indicate the corrective measures that were taken, if any.

9.4.3 Technical Standards for Construction Surveys.

A. Measurements

1. Measurements shall be taken to a precision compatible with the particular problem involved and with the size and nature of the project involved.
2. All linear measurements shall be taken with a properly calibrated instrument.

B. Monuments

1. Construction layout monuments shall be of a type and character and set in a manner providing a degree of permanency consistent with the terrain, physical features and intended use.
2. Sufficient monuments and offset information shall be provided to enable the user to check the accuracy of any points or lines established therefrom.
3. Monuments shall be witnessed in a manner that shall be easily discoverable. Any stakes that show offsets and/or cut and fill data shall also show sufficient information to identify the horizontal position of the referenced point.

C. Plans for Construction Surveys.

1. The client may be furnished the results of the survey in an appropriate form (e.g. plans, sketches, diagrams, cross-sections, electronic files, etc.)

When a plan is prepared, in addition to the requirements of Section 9.7.1, it shall include the following:

- a. Identification of horizontal and vertical datums to which the measurements are referenced.

- h. If property boundaries are shown, a statement of their Survey Type per Section 9.1 and their Class per Section 9.9 shall be made.

D. Certification for Construction Surveys

When a plan for a Construction Survey is prepared, the certification identified in Section 9.7.3 shall be included on the plan.

9.5 Control Surveys

9.5.1 General

A. Definition

A *control survey* is a high-accuracy survey typically required for large-scale geodetic control networks or construction projects such as bridges, tunnels and other complex urban area improvements. Their complicated methodology and high cost are factors that generally render control surveys unnecessary for private boundary purposes.

B. Control Surveys shall conform to a Class II measurement standard.

9.5.2 Procedural Standards for Control Surveys

A. Research and Preliminary Analysis

The PLS Shall:

1. Arrive at a project scope through meetings with the client and gain an understanding of the project and the appropriate densification of monuments required to meet the client's needs.
2. Agree upon an elevation datum with the client. If a local datum is used, suggest to the client that the project be referenced to the NAVD 88 adjustment.
3. Research local National Geodetic Survey (NGS) control within and adjacent to the project area.
4. Review the project limits and design a network that is suitable.

B. Field Investigation

The PLS Shall:

1. Set out primary control monuments and tie them into a local project network using methods sufficient to meet the requirements of Section 9.9.
2. Prepare field sketches of the monument locations to enable future recovery of the monuments.

C. Computations, Conclusions

The PLS shall:

1. Make necessary computations to verify the accuracy of measurements.
2. In the event of the discovery of any discrepancies between the construction documents and the layout as surveyed, notify the client, and indicate the corrective measures that were taken, if any.

9.5.3 Technical Standards for Control Surveys

A. Measurements

1. Measurements shall be taken to a precision that is compatible with project needs and with the size and nature of the project involved.
2. Measurements shall be taken with properly calibrated instruments.

B. Monuments for Control Surveys

1. Monuments shall be of a type and character and set in a manner providing a degree of permanency consistent with the terrain, physical features and intended use.
2. Sufficient monuments and offset information shall be provided to enable the user to check the accuracy of any points or lines established therefrom.
3. Monuments shall be witnessed in a manner that shall be easily discoverable. Any stakes that show offsets and/or cut and fill data shall also show sufficient information to identify the horizontal position of the referenced point.

C. Plans for Control Surveys

1. The client may be furnished the results of the survey in an appropriate form (e.g. plans, sketches, cross-sections, diagrams, tabulations, electronic files, etc.)

When a plan is prepared, in addition to the requirements of Section 9.7.1, it shall include the following:

- a. Identification of horizontal and vertical datums to which the measurements are referenced.
- ~~b.~~ If property boundaries are shown, a statement of their Type per Section 9.1 and their Class per Section 9.9 shall be made.

D. Certification for Control Surveys

When a plan for a Control Survey is prepared, the certification identified in Section 9.7.3 shall be included on the plan.

9.6. Compilation Plans

9.6.1 General

A. Definition

1. A *compilation plan* is a plan based upon other plans, survey maps, deeds, aerial photos, resource maps, GIS data, and other secondary sources. Such a plan may be supplemented by field investigations and measurements. A compilation plan is always subject to such changes as an authoritative field survey may disclose.

2. The accuracy of a compilation plan will vary with the quality of the data from which it has been compiled. Sources and quality of data shall be noted.
3. A compilation plan is not a boundary survey, and is never suitable for use in the conveyancing of land. Such plans are used for conceptual design, tax maps, overlay maps, mortgage loan inspections, geographic information systems (GIS) databases, or similar presentations of information which are derived from secondary sources, and which are not the result of a boundary or other authoritative field survey.
4. In addition to the required elements outlined in Section 9.7.1, a compilation plan shall prominently display the following disclaimer within the plan certification:

“This compilation plan has been prepared from sources of information and data whose positional accuracy and reliability has not been verified. The property lines depicted hereon do not represent a boundary opinion, and other information depicted is subject to such changes as an authoritative field survey may disclose.”

9.7 Plan Requirements, Certifications, and Seals

9.7.1 General

Whenever a plan for any type of survey is prepared, it shall include the following:

- a) A title block containing the type of survey, the location (Assessors Plat and Parcel Number, street name, town/city) of the parcel surveyed, month/day/year, scale, graphic scale and name and address of the firm or surveyor responsible for the survey. Revisions shall be noted near the title block with date and description.
- b) All lines and lettering sizes for plans shall be of such dimension and width as to be clear and legible when the plan is reproduced at one-half size.
- c) A vicinity map.
- d) North arrow and notation as to its reference (e.g. State Plane Coordinates, Magnetic or Assumed) shall be shown on each sheet. Magnetic bearings shall show the date of the observation.
- e) A legend indicating the definitions of all abbreviations and symbols used.
- f) Streets, roads, easements of record and/or usage (e.g. public, private or right-of-way). Names and route numbers of streets and ways within the plan area shall be indicated. References to State Highway Plats shall be included, where applicable. Stationing and offset ties shall be shown, where applicable.
- g) Location of buildings and other substantial physical features, as appropriate.
- h) Observed cemeteries and burial grounds.
- i) Classifications for both horizontal and vertical measurements shall be indicated. The seal, certification, and signature of the PLS in Responsible Charge shall appear on every plan.

9.7.2 Comprehensive Boundary Surveys and Limited Content Boundary Surveys

In addition to those elements in Section 9.7.1, when a plan for a Boundary Survey is prepared, it shall include the following:

1. All pertinent bearings or angles, linear dimensions and areas shall be indicated to the accuracy of the measurements observed. At least one course of the survey shall be represented with a bearing referenced to the meridian.
2. The minimum data for all curve segments along the perimeter of the parcel is: central angle, radius, and the arc length. When lines are not radial or not tangent, the angle-to-chord or chord bearing and the chord dimension shall be shown.
3. Sufficient data to allow the retracement of all lines and points.
4. Name(s) of record property owner, and names of record abutting property owners. Abutting property identification shall include tax assessor's plat and parcel number and subdivision parcel number, where applicable.
5. When a planimetric or topographic feature controls the location of a line or position, the relationship of the feature to the line or position shall be shown. Benchmarks and datum shall be indicated when vertical control is required or stated.
6. Maps shall mathematically close within acceptable tolerance of rounding errors.
7. Any parcel of land that has an irregular boundary shall have a closing "tie line" in the general vicinity of said irregular boundary. The closing tie line shall be provided with all angular and linear dimensions required to mathematically close the survey.
8. Significant discrepancies between measured or calculated data and record data shall be disclosed on the plan. The plan shall state which of these values has been utilized in the resolution of the conflict.
9. Monumentation of the parcel being surveyed and monumentation of public ways that provide useful reference orientation shall be indicated. External reference monumentation utilized in conducting the survey shall be indicated. Monument notations shall include the character, type and condition of the monument and shall indicate whether the monument was "found" or "set". If known, the origin of found monuments shall be shown.
10. Observed encroachments and record evidence of easements.
11. Substantial physical improvements and features,
12. Lines of physical occupation and evidence of fences, walls, hedges, etc. that appear to indicate a boundary or corner. This evidence may be dimensioned using offset lines from the property line.
13. Recorded and observed means of ingress and egress.
14. Where appropriate and feasible, the corners of the parcel shall be referenced to the Rhode Island State Plane Coordinate System.
15. The area of the parcel(s) shall be shown.
16. The PLS shall recommend that the client file the plan in the Land Evidence Records of the Town or City in which the property is located.

9.7.3 Certification

All plans, reports or other products prepared by the PLS shall bear a certification which complies with the following form:

CERTIFICATION

This survey has been conducted and the plan has been prepared pursuant to Section 9 of the Rules and Regulations adopted by the Rhode Island State Board of Registration for Professional Land Surveyors on November 25, 2015, as follows:

(a)	Type of Boundary Survey:	Measurement Specification:
<i>[Insert one:</i>	<i>Comprehensive Boundary Survey</i>	<i>I</i>
	<i>Limited Content Boundary Survey</i>	<i>I</i>
	<i>If neither, insert: Not a Boundary Survey]</i>	

(b)	Other Type of Survey:	
<i>[Insert as applicable:</i>	<i>Data Accumulation Survey</i> ¹	<i>III</i>
	<i>Construction Survey</i> ¹	<i>I or II</i>
	<i>Control Survey</i>	<i>I or II</i>
	<i>Compilation Plan</i> ²]	<i>IV</i>

¹ Where applicable, also insert:

Vertical Control Standard (Section 9.9.3)
Topographic Survey Accuracy (Section 9.9.4)

² In all cases, insert:

Compilation Plan Disclaimer (Section 9.6.1(A)(4)).

(c) Statement of Purpose:

The purpose for the conduct of the survey and for the preparation of the plan is as follows:
[Insert: Detailed explanation]

By _____ *[Insert PLS Signature]*

_____ *[Insert Printed PLS Name and License No.]*

_____ *[Insert COA No.]*

[Insert Approved Seal]

2. It is presumed that multiple TYPES of surveys, measurement CLASSES, and PURPOSES may be involved in the same survey plan or report. All shall be disclosed in the certification, and the respective content differentiated as appropriate.

9.8. Monuments

9.8.1 General

1. Monuments are physical objects of reasonable longevity and permanence such as:

- a) Stone or concrete bounds with minimum dimensions of four (4) inches square by thirty (30) inches long, with drill holes, crosses or disks marking the point;
 - b) Metallic disks, marked with a cross or punch hole, cemented firmly into an immovable object not subject to short-term deterioration. The disk shall be produced from a material that will not rust or deteriorate from oxidation or atmospheric pollution,
 - c) Drill holes of sufficient depth placed in sound, immovable objects;
 - d) Iron pipes or solid rods produced from ferrous or non-ferrous metals/materials; pipes and rods shall be marked with a cap or tag which identifies the PLS or the firm.
 - e) Foundation and building corners of stone, granite, brick, concrete or similar materials not subject to change or renovation, used as offsets;
2. Markers include nails, wooden and plastic stakes and other materials possessing a similarly limited life span.
 3. In general, a sufficient number of monuments shall be placed that will allow for the convenient and accurate reproduction of the survey.
 4. Streets and lots created in accordance with subdivision regulations shall be monumented in accordance with state and municipal regulations. At a minimum, monuments shall be established at the point of curvature (PC) and point of tangency (PT) of new street lines and at intersections and/or angle points along the boundary of the highway. No point along a highway boundary shall be located more than five hundred (500) feet from a monument.
 5. It is not the intent of these standards to mandate the placement of required subdivision monuments by the PLS if the owner/developer defaults on its contractual obligations with the surveyor.
 6. Markers may be set at any point not requiring a monument. Markers may be set in place of monuments where transitional site conditions dictate these as appropriate.
 7. When a survey is performed which is based on non-record monuments, lines of possession, or other evidence which renders the locations of boundaries uncertain, the surveyor shall inform the client, and shall prepare a plan in accordance with Section 9.7.1 which indicates the basis of the boundary opinion.
 8. When conditions require installation of a monument on an offset rather than at the true corner, the surveyor shall prepare a plan in accordance with Section 9.7.1.
 9. In the event that monuments are not found/set at property corners or angle points, the surveyor shall prepare a plan in accordance with Section 9.7.1 showing the control monuments which reference the boundary location.
 10. Monuments shall be witnessed in such a manner as to be easily discoverable, and may have the name of the firm or the surveyor responsible for the survey affixed thereto.

9.9 Measurement Specifications for Surveys

9.9.1 General

- A. A *Class I* measurement standard is appropriate to collect and report data to a high degree of positional accuracy. It results from the use of equipment and procedures that meet or exceed the tolerances listed in Section 9.9.2. Boundary surveys, subdivisions of land, title surveys, and many construction projects require this level of positional accuracy.
- B. A *Class II* measurement standard is appropriate when an *extremely* high degree of positional accuracy is required. Given the complexity and associated costs of obtaining such results, this standard is typically employed for large-scale geodetic control surveys and large-scale highway, bridge and tunnel projects.
- C. A *Class III* measurement standard is appropriate where a moderate positional accuracy is required. This standard is used for surveys designed to collect and report physical location data, typically for the purpose of evaluating existing conditions and/or the design of proposed improvements. Such surveys and plans tend to measure and depict the relative positions of physical features to a scale that is adequate to meet the purposes for which the survey is designed. If boundaries are depicted, they are *not* to be regarded as reliable unless the plan is also certified to an appropriate boundary standard.
- D. A *Class IV* standard indicates that data is depicted or reported from plans, survey maps, deeds, and other secondary sources, and is not necessarily the product of a field survey. This standard is never suitable for a boundary survey, but may be used for compilation plans, conceptual design plans, tax maps, overlay maps, mortgage loan inspections, geographic information system (GIS) and other presentations of information which have not been verified by an authoritative field survey. All plans prepared to this standard must prominently display the disclaimer listed in Section 9.6.1-D within the certification language.

9.9.2 Specifications for Horizontal Measurements.

DESIGN SPECIFICATIONS: It shall be the responsibility of the Professional Land Surveyor (PLS) in responsible charge to design specifications for field survey procedures sufficient to satisfy the positional accuracy standards for distance and angular measurements for the designated Class of Survey in order to assure that the required nominal positional accuracy (Pn) will be achieved, The specifications shall include the selection of appropriate instrumentation and field observation procedures to be employed. Tables I, II and III are to be used in conjunction with the various positional accuracy standards that may change from time to time such as those prepared by the Federal Geodetic Control Subcommittee entitled “Standards and Specifications for Geodetic Control Networks” and “Geometric Geodetic Accuracy Standards and Specifications for Using GPS Relative Positioning Techniques”. It shall be the responsibility of the PLS to be informed on measurement technologies and methods for achieving repeatable positions within the tolerances stated herein.

**TABLE I
1 SIGMA HORIZONTAL ACCURACY FOR TRAVERSE SURVEYS**

CLASS	NOMINAL POSITIONAL ACCURACY (Pn)	ALLOWABLE PRECISION FOR DISCRETE DIRECT MEASUREMENTS
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	EXPRESSED AS RATIO	LINEAR PRECISION (Ed)1	DIRECTIONAL PRECISION (Ea)2
I	1:10,000	± 0.01 FT	± 10"
II	1:50,000	± 0.01 FT	± 05"
III	1:300	± 1 FT	± 15'
IV	<i>COMPILATION OF EXISTING DATA - NOT A PRODUCT OF FIELD SURVEY</i>		

1. Ed may exceed tabular value for linear precision provided s/Ed expressed as ratio is greater than required nominal positional accuracy (Pn) for class of survey.
2. The tabular values for Ea are sufficient to satisfy the required directional element for the nominal positional accuracy (Pn) for each class of survey. The above notwithstanding it is recommended that Ea be kept in balance with Ed to avoid unnecessary degradation of actual positional accuracy.
3. This standard provides for the same allowable precision for measurements in a traverse circuit (either open or closed) and also any associated side shots.

9.9.3 Specifications for Vertical Measurements.

TABLE II
ACCURACY STANDARDS FOR VERTICAL CONTROL SURVEYS

CLASS	LEVEL LOOP CLOSURE	MAXIMUM SIGHT DISTANCE
V-1	± 0.035' $\sqrt{\text{MILES}}$	300 FEET (see note 3)
V-2	± 0.020' $\sqrt{\text{MILES}}$	250 FEET (see note 3)
V-3	± 0.020' <i>(For local project control where the level loop is less than 1 mile)</i>	300 FEET (see note 2 and 3)
V-4	PHOTOGRAMMETRIC CONTROL - (see note 1)	

Notes:

1. Photogrammetric surveys shall conform to the standards published by the Federal Geographic Data Committee found in "Geospatial Positioning Accuracy Standards Part 3: National Standard for Spatial Data Accuracy" (FGDC – STD – 007.3 – 1998), as may be amended.
2. The square root of the miles is intentionally omitted from V-3
3. The maximum sight distance is suggested to ensure repeatability.

9.9.4 Specifications for Topographic Surveys

TABLE III
Topographic Survey Accuracy

Each topographic survey shall conform to tolerances for topographic accuracy as follows:

Class	Contour Interval Test
T-1	90% within 1/2 contour interval
T-2	80% within 1/2 contour interval
T-3	This class of topographic map applies to photogrammetric maps for which the PLS provides the horizontal and vertical control. See 9.3 for photogrammetric mapping standards.
T-4	The topographical information shown on a T-4 plan has been prepared from sources of information and data whose positional accuracy and reliability has not been verified. The data depicted on a T-4 plan is subject to such changes as an authoritative field survey may disclose.

In using Topographic Accuracy Class T-1 or T-2, the PLS is expressing confidence that, should a test profile be run in the field, a plotted comparison with a profile scaled from the map shall be in agreement with the above criteria and the remainder shall be within the contour interval.

In using Topographic Accuracy Class T-1 or T-2, the horizontal position of features shall conform to Class III Accuracy

9.9.5 Record of Measurement Data & Evaluation

1. The Entity holding the Certificate of Authorization ("COA Holder") issued by the Rhode Island State Board of Registration for Professional Land Surveyors shall maintain records of field measurements. Examples include: field notebooks, data collector raw files, electronic field book files, etc.
2. The COA Holder shall maintain records of the methods used to evaluate accuracy of the measurement evidence. Examples include: statistical testing, compass rule adjustment results, transit rule adjustment results, least squares adjustment results, comparison with values of higher accuracy, repeat measurements, estimation, etc.
3. The COA Holder shall maintain all contractual documentation, research materials, field notes, computation data, data files, original maps, and reports as a permanent record.

9.10 - Deviation From Published Standards

Nothing contained in these Standards shall prohibit reasonable deviations from the specific requirements of a particular Section when, in the prudent professional opinion of the Professional Land Surveyor in Responsible Charge, an alternative approach or methodology will yield equal or better results, or is dictated by the particular circumstances of the survey activity involved, provided that such alternative approach or methodology shall comply with the overall intent of the procedural and technical standards as outlined herein.

10. COMPLAINTS INVESTIGATIVE PROCEDURES, AND HEARINGS

- 10.1 General. Any person or Entity may file a complaint against any applicant, registrant, or person or firm subject to the Board's jurisdiction. In addition, the Board may, on its own motion, investigate the conduct of an applicant, registrant or person or firm subject to the Board's jurisdiction, and may in appropriate cases file a complaint with the Secretary of the Board.
- 10.2 Jurisdiction. At any time after the complaint is received, the Board may vote upon its own motion that the complaint is not subject to the Board's jurisdiction. If the Board votes that the complaint is not subject to its jurisdiction, the appropriate parties shall be so notified.
- 10.3 Complaint. The procedure of filing complaints with the Board shall be as follows: Any person or Entity may file a letter form or other form of complaint. The complaint shall include at a minimum the identity of the complainant, the alleged violator, the specific nature of the alleged violation, supporting documents when appropriate, and a statement identifying against whom the complaint is being made, a statement of fact sufficient to establish that the Board has jurisdiction over the conduct alleged and a statement setting forth the facts which support the allegation(s) that the individual or firm has violated the laws, code of ethics and/or rules and regulations governing the Practice of Land Surveying in this State. Seven copies of all supporting documents shall be submitted with the complaint.
- 10.4 Service of Process
- 10.4.1 By Whom Served. The Board shall cause to be served all complaints, orders, notices, and other papers issued by it, together with any other papers which it is required, or is otherwise allowed by applicable law, to serve. Every paper shall be served at the last address on file with the Board. The initial service of the complaint shall be made either personally or by first class registered or certified mail with return receipt being required or by electronically as consented to by the Professional Land Surveyor. With the complaint, the Board shall serve a covering letter advising applicant, registrant, or person or firm of the number of days within which an answer is due. A copy of the covering letter shall be sent to the complainant which shall serve as an acknowledgment of receipt of the complaint by the Board. If an answer is filed, all future service of process may be by regular mail.
- 10.4.2 When Service Complete. When service is by regular mail, service upon parties shall be regarded as complete, when deposited properly Stamped and addressed in the United States mail.
- 10.4.3 Upon Whom Served. All papers served by a party shall be served upon the counsel of record at the time of such filing but if a party is not represented by counsel, service will be upon the party or its agent designated by them or by law. Any counsel entering an appearance subsequent to the initiation of the proceeding shall do so by sending written notice to the Board. Entering counsel shall also notify all other counsel then of record and all parties not represented by counsel of such fact.

10.4.4 Filing with the Board. Papers required to be filed with the Board shall be deemed filed upon actual receipt by the Board at its Administrative Headquarters, or alternatively, at the address which is the location of the Board at the time of filing.

10.5 Answer. Upon service of the complaint on the alleged violator, such person or Entity which is the subject of the complaint has twenty (20) days in which to respond to the complaint by filing a written answer with the Board. The answer shall set forth all facts and include all supporting documents which the respondent desires the Board to consider in determining whether or not the matter should proceed to hearing under applicable law. Upon receipt, the Board shall mail a copy of the answer to the complaining party.

10.6 Investigative Conference

10.6.1 An informal investigation may be made of alleged violations of rules or laws involving land surveying practice. The Chair of the Board may designate a Board member or Legal Counsel to conduct an investigative conference with the alleged violator. A full report of such a conference shall be made to the Board.

10.6.2 In the matter of informal investigative conferences, the Board member or Attorney conducting the conference shall immediately advise the alleged violator of the informal nature of the proposed proceeding and of the alleged violator's right to refuse to participate in said proceeding, and of the alleged violator's right to a formal hearing as set forth in Rule 10.8

10.7 Conciliation Conference. Either before or after the informal investigation and/or investigative conference, the Board may conduct a conciliation conference upon notice to all concerned parties. Any statements made by any party at said conference shall not be used by any party at any future hearing. If the matter is resolved at the conciliation conference, the parties shall, whenever applicable or appropriate, sign a conciliation or settlement agreement.

10.8 Hearings

All hearings shall be conducted pursuant to Department of Business Regulation Central Management Regulation 2 entitled *Rules of Procedure for Administrative Hearings*.

10.9 Declaratory Judgment

Pursuant to R.I. Gen. Laws § 42-35-8 and Department of Business Regulation Central Management Regulation 3 entitled *Declaratory Rulings and Petitions* the Board will accept requests from any person or Entity for advisory opinions or declaratory rulings on the Practice of Land Surveying.

10.10 Further Notification

In addition to publishing notice, the Secretary of the Board may cause an actual copy of the notice of revocation, suspension, denial or renewal to be sent to the City or Town Clerk of each municipality local in the State of Rhode Island, to the Rhode Island Department of Transportation, to the Rhode Island Department of Environmental Management (OWTS Section and Wetlands Section), Coastal Resource Management Council, the State Building Official, the Massachusetts Board for Professional Engineers and Professional Land Surveyors, the Connecticut Board for Professional Engineers and

Land Surveyors and to N.C.E.E.S. In the case of voluntary non-renewal, once sixty (60) days has passed since the lapsing of the registration or Certificate of Authorization, the Secretary of the Board may send notice of the non-renewal to the City or Town Clerk of each municipality local in the State of Rhode Island, to the Rhode Island Department of Transportation, to the Rhode Island Department of Environmental Management (OWTS Section and Wetlands Section), Coastal Resource Management Council, the State Building Official, the Massachusetts Board for Professional Engineers and Professional Land Surveyors, the Connecticut Board for Professional Engineers and Land Surveyors and to N.C.E.E.S. In regard to N.C.E.E.S., the Board shall also complete a copy of the Disciplinary Action form prescribed by Publication of Disciplinary Action February 17, 1993, Page 2, N.C.E.E.S. and transmit it immediately to that Agency.

10.11 Eligibility to Reapply

In the event that any individual shall have his registration revoked or not renewed for cause, that person shall not be permitted to reapply for registration for a period of not less than five (5) years. Upon re-application, it shall be the burden of the applicant to demonstrate by clear and convincing evidence that sufficient grounds exist to support the applicant's request for registration. The Board may modify this rule on a case by case basis when the registration was not renewed due to a registration suspension of less than five (5) years in duration.

10.12 Public Records.

Public records may be made by written request to the Board pursuant to R.I. Gen. Laws § 38-2-1 et seq. and Department of Business Regulation Central Management Regulation 1 entitled *Access to Public Records*.

11. Severability & Effective Date

11.1 Severability. If any provision of these rules and regulations, or the application thereof, is held invalid by a court of competent jurisdiction, the validity of the remainder of the rules and regulations shall not be affected thereby.

11.2 Superseded Rules and Regulations. On the date that the rules and regulations take effect, the last approved rules and regulations by the Board on October 14, 2003, shall be superseded. However, any application to or action taken by the Board prior to the effective date of amended rules and regulations shall be governed by the rules and regulations in effect at the time that the application was filed or the action was taken.

11.3 Effective Date. Pursuant to R.I. Gen. Laws § 42-35-4, as amended, the within rules and regulations shall take effect twenty (20) days after they are filed with the Secretary of State.

11.4 Request for Amendment. Any interested person may petition the Board requesting the adoption, amendment, or repeal of any Rules and may accompany the petition with pertinent data, views, and arguments. All such petitions shall be submitted in writing and shall specifically and clearly indicate the following:

1. Identification of existing Rule by number.
2. Full text of proposed Rule.
3. Specific objections to existing Rule.

4. Full text of any section of law related or affected.
5. All comments, arguments, and views.

11.5 Disposition of Request. After consideration, subject to such procedures as may be required by the law, the Board will determine the proper disposition of such a petition as follows:

1. Dismissed, action deemed unnecessary.
2. Returned to petitioner for re-submittal or additional information.
3. Rule adopted, repealed, or amended by the Board.

**APPENDIX A: PROCEDURAL AND TECHNICAL STANDARDS
APPLICABLE DURING TRANSITION PERIOD PURSUANT TO SECTION 9**

**PROCEDURAL AND TECHNICAL
STANDARDS**

FOR THE

PRACTICE OF LAND SURVEYING

IN THE

**STATE OF RHODE ISLAND AND
PROVIDENCE PLANTATIONS**



PREPARED BY

**THE RHODE ISLAND SOCIETY
OF PROFESSIONAL LAND SURVEYORS**

ADOPTED BY

**THE RHODE ISLAND BOARD OF REGISTRATION
FOR PROFESSIONAL LAND SURVEYORS**

EFFECTIVE APRIL 1, 1994

APPENDIX A: TRANSITION PERIOD

Introduction

This revision of the Procedural and Technical Standards for the Practice of Land Surveying in the State of Rhode Island and Providence Plantations (hereinafter "Standards") is based upon previous Standards as adopted 03-05-1984 and the efforts of the previous Standards Committee. The contributions of those Committee members are hereby acknowledged:

Robert A. Murray, Louis Federici and Pierre H. Guillemette

This revision of the Standards represents the combined efforts of a number of dedicated individuals. Their contributions to this undertaking are gratefully acknowledged:

Richard Bzdyra, Richard Lipsitz, Samuel White, James Reddington,
Roger Anthony, John Mensinger, Michael Scanlon and Stephen Souls

Rhode Island Board of Registration for Professional Land Surveyors
Rhode Island Society of Professional Land Surveyors

Connecticut Board of Examiners for Engineers and Land Surveyors
Connecticut Association of Land Surveyors

Massachusetts Board of Registration for Professional Engineers
and Land Surveyors
Massachusetts Association of Land Surveyors and Civil Engineers

Maine Board of Registration for Land Surveyors
Maine Society of Land Surveyors

New Hampshire Joint Board of Engineers, Architects and Land Surveyors
New Hampshire Land Surveyors Association

Vermont Board of Land Surveyors
Vermont Society of Land Surveyors

Thank you - Alfred W. DiOrio, Chairman

Dedication

These Standards are dedicated to those for whom Standards are not representations of the maximum effort required, but instead, levels of minimum effort to be continually surpassed.

APPENDIX A: TRANSITION PERIOD

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Section 01.00 Classes of Surveys / Tables

Section 01.01 Identification of Survey Classes and Relationship To Survey Services.

The types of surveying services listed below shall be performed so as to meet or exceed the criteria established for these CLASSES of surveys.

<u>Class of Survey</u>	<u>Type of Survey Services</u>
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CLASS I	High Accuracy Surveys
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Surveys of developed (or soon to be developed) commercial and residential property, performed to a high degree of positional accuracy. Most urban and suburban boundary surveys, large-scale construction projects, title surveys, and subdivisions of land should be performed to this standard.

CLASS II	Moderate Accuracy Surveys
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Surveys of undeveloped or less developed property, such as rural parcels, farmland, marshlands, and low-density residential areas, performed to a moderate degree of accuracy. While in all other respects these surveys are comparable to those described in CLASS I, they may employ instruments, methods, and measurement procedures which render their positions with somewhat less accuracy. While these surveys are reliable and cost-effective, their use should generally be limited to those areas where such a moderate level of accuracy is sufficient.

CLASS III	Data Accumulation Surveys
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Surveys designed to collect and report data, typically for the purpose of evaluation of existing conditions and/or design of future improvements. Such surveys and plans tend to measure and show the relative positions or locations of physical features to a stated graphical scale which is suited to the purpose for which the survey is to be used. This classification includes topographic surveys, photogrammetric surveys, site plans, utility plans, etc. To the extent that property lines are reflected on such plans, they are to be regarded as pictorial only, unless such boundaries are also certified to a CLASS I, CLASS II or CLASS V standard.

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Classes of Surveys - continued

CLASS IV Compilation Maps

Types of plan or report compiled from other maps, deeds, and/or other sources of information. Such a plan may or may not be a product of limited field investigations, but in any case is subject to such changes as an accurate field survey may disclose. Such a map is never suitable as a boundary survey, but may be used for the purposes of compilation maps, conceptual and preliminary plans, feasibility studies, tax maps, overlay maps, mortgage loan inspections, etc.

All plans prepared under this class shall carry the following statement which shall be clearly visible on the plan and/or report:

"This plan/report is substantially correct in accordance with a CLASS IV Standard as adopted by the Rhode Island Board of Registration for Professional Land Surveyors. This plan is not to be construed as an accurate boundary survey and is subject to such changes as an accurate boundary survey may disclose."

CLASS V Control Surveys

Surveys of extremely high order accuracy, typically required by Federal, State or municipal agencies for the purposes of large-scale geodetic control, or extremely high accuracy construction projects, such as bridges and tunnels. The complexity of such surveys, their high cost, and the likelihood that they will be of only marginal additional value to a property owner, are all factors which make them generally unsuitable for ordinary boundary surveys.

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Section 02.00 Specifications for Survey Classes.

Section 02.01 Specifications for Horizontal Surveys.

MEASUREMENT STANDARDS FOR SURVEYS

DESIGNED SPECIFICATIONS: It shall be the responsibility of the surveyor in responsible charge to design specifications for field survey procedures sufficient to satisfy the accuracy standards for distance and angular measurements for the designated Class of Survey in order to assure that the required nominal positional accuracy (P_n) will be achieved. The specifications shall include the selection of appropriate instrumentation and observation procedures to be employed by field observers. **Table I is to be used in conjunction with the section of the Technical Manual to Accompany Procedural & Technical Standards for the Practice of Land Surveyors in the State of Rhode Island and Providence Plantations titled "Accuracy Standards"**

TABLE I
1 SIGMA HORIZONTAL ACCURACY FOR TRAVERSE SURVEYS,

CLASS	NOMINAL POSITIONAL ACCURACY (P_n) EXPRESSED AS RATIO	ALLOWABLE PRECISION FOR DISCRETE DIRECT MEASUREMENTS	
		LINEAR PRECISION (E_g) ₁	DIRECTIONAL PRECISION (E_a) ₂
I	1: 10,000	+/- 0.01 FT	+/- 10"
II	1: 5,000	+/- 0.02 FT	+/- 20"
III	1: 300	+/- 1 FT	+/- 15'
IV	COMPILATION OF EXISTING DATA - NOT A PRODUCT OF FIELD SURVEY.		
V	1: 25,000	+/- 0.01 FT	+/- 05"

1. E_g may exceed tabular value for linear precision provided s/E_g expressed as ratio is greater than required nominal positional accuracy (P_n) for class of survey.
2. The tabular values for E_a are sufficient to satisfy the required directional element for the nominal positional accuracy (P_n) for each class of survey. The above notwithstanding it is recommended that E_a be kept in balance with E_g to avoid unnecessary degradation of actual positional accuracy.
3. This standard provides for the same allowable precision for measurements in a traverse circuit (either open or closed) and also any associated side shots.

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Section 02.02 Specifications for Vertical Survey Classes

TABLE II
ACCURACY STANDARDS FOR VERTICAL CONTROL SURVEYS

CLASS	LEVEL LOOP CLOSURE	MAXIMUM SIGHT DISTANCE
I	+/- 0.035' $\sqrt{\text{MILES}}$	300 FEET
II	+/- 0.050' $\sqrt{\text{MILES}}$	350 FEET
III	PHOTOGRAMMETRIC CONTROL - SEE NOTE 1	
IV	+/- 0.20 FEET - SEE NOTES 2 and 3	
V	+/- 0.020' $\sqrt{\text{MILES}}$	250 FEET

Notes:

1. See Specification at Section 04.02, page 15
2. This specification is specifically for the representation of elevations on plans for Individual Sewage Disposal System (ISDS) applications/ designs. As such, these measurements are not required to be the result of level loops or networks.
3. The maximum sight distance for specification shall ensure repeatability within 0.2 feet.

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Section 03.00 Control, Original and Retracement Surveys

Section 03.01 Procedural Standards

- A. **Research and Preliminary Analysis.** The surveyor shall:
1. Review legal description(s) of the property to be surveyed.
 2. Review legal descriptions of all abutting properties.
 3. Perform deed research so as to analyze related senior and junior rights for the property to be surveyed and for all abutting properties.
 4. Review copies of recorded (land evidence) documents affecting the survey.
 5. Where feasible, search for abutting/adjoining unrecorded survey information.
 6. Review from utility companies, public offices, title companies and other appropriate sources of information, including known private sources, the available plans, documents and field notes affecting the survey.
 7. Where applicable, obtain copies of the state and municipal ordinances which pertain to the area of the survey.
 8. Examine and analyze the data.
 9. Form preliminary conclusions as to the completeness of data and identify inconsistencies in the record information.
 10. Plan procedure for performing the field survey.
- B. **Field Investigation.** The surveyor shall:
1. Search for physical monuments and weigh their reliability.
 2. Investigate possible parole and written evidence (i.e. unrecorded deeds) supporting positions of lost control monuments.
 3. Take measurements to correlate existing evidence.
 4. Whenever feasible, connect the survey (applying proper adjustments) to the Rhode Island State Plane Coordinate System.
 5. Take sufficient check measurements to verify the observations.

APPENDIX A: TRANSITION PERIOD

6. Locate physical occupation lines (e.g. fences, hedges, walls, etc.) between abutting properties. Where applicable, advise client to review with legal counsel statutes pertaining to adverse possession, the laws of acquiescence and other unwritten rights.
7. All field notes, measurements and observations made during the course of the survey shall be recorded in an appropriate form, and in a manner that is intelligible to other surveyors. These notes should indicate site location, street names, personnel, instrument identifications, date of observations, and weather conditions affecting measurements. Nothing herein shall preclude the use of electronic data collectors for the recordation of field notes.

C. **Computations, Conclusions.** The surveyor shall:

1. Compute and compare field information with record data.
2. In the event of substantial disagreement with the work of another professional, the surveyor shall make reasonable efforts to contact that professional and investigate the disagreement.
3. Evaluate the data in accordance with law and/or precedent, and determine the location of property lines.
4. Provide sufficient monumentation to enable the reproduction of the survey on the ground in accordance with Section 3.02-B. herein.
5. Retain all records that may be used to substantiate conclusions.

03.02 Technical Standards

A. **Measurements**

1. Measurements shall be taken to a precision compatible with the particular problem involved and with the size and geometric shape of the parcel involved.
2. All linear measurements shall be taken with a properly calibrated measuring device with a record of calibration maintained for future reference.
3. Any parcel of land which has an irregular boundary or a mathematically indefinable boundary shall have a closing tie line in the general vicinity of the irregular boundary. The closing tie line observations shall be angles/bearing and distances along lines between accessible property lines.

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B. Monuments & Markers

1. "Monuments" as used in these Standards shall be deemed to be physical objects of reasonable longevity and permanence such as:
 - Stone or concrete bounds with minimum dimensions of four (4) inches square by thirty (30) inches long, with drill holes, crosses or disks marking the point;
 - Metallic disks, marked with a cross or punch hole, cemented firmly into an immovable object not subject to short term deterioration. The disk shall be produced from a material that will not rust or deteriorate from oxidation or atmospheric pollution;
 - Drill holes of sufficient depth placed in sound, immovable objects;
 - Iron pipes or solid rods produced from ferrous or non-ferrous metals/materials;
 - Foundation and building corners of stone, granite, brick, concrete or similar materials not subject to change or renovation, used as offsets;
2. "Markers" as used in these Standards shall be deemed to include nails, wooden and plastic stakes and other materials possessing a similarly limited life span.
3. A sufficient number of control points shall be marked by physical monuments which will allow for the accurate reproduction of the survey, as follows:
 - (a) For surveys of residential parcels of land, one acre or less in area, a minimum of two (2) monuments on the boundary must be set or recovered. Should, at the discretion of the surveyor, it be more appropriate that only markers be set on a survey of residential parcels of land, one acre or less in area, then all corners and angle points must be marked.
 - (b) For surveys of residential parcels of land greater than one acre in area, and for all non-residential parcels of land, a sufficient number of monuments, but not less than three (3), must be set or recovered at property corners or angle points to accurately define the property and to permit reproduction of the survey.
 - (c) Land divisions and/or subdivisions regulated by municipalities are excepted from the monumentation requirements of these standards, and monumentation shall be as directed by the municipality. It is not the intent of these standards to require the monumentation of individual subdivision lots prior to their sale by the subdivider.
4. Markers may be set at any point not requiring a monument. Markers may be set in place of monuments where transitional site conditions dictate these as appropriate.

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5. When a survey is performed which is based entirely on non-record monuments, lines of possession, and other evidence which render the locations of boundaries uncertain, the surveyor shall so inform the client, and shall prepare a plan in accordance with Section 3.02-C. herein which indicates the basis of the boundary opinion drawn.
6. When conditions require setting a monument on an offset rather than at the true corner, the surveyor shall prepare a plan in accordance with Section 3.02-C. herein.
7. In the event that monuments cannot be set and are not recovered at property corners or angle points, the surveyor shall prepare a plan in accordance with Section 3.02-C. herein showing the control monuments which reference the boundary location .
8. Monuments shall be witnessed in such a manner as to be easily discoverable, and may have the name of the firm or the surveyor responsible for the survey affixed thereto.

C. Plans

1. When a plan is prepared, it shall include the following:
 - a. A title block containing the category of the survey, the geographic location (Assessor's Plat and Parcel Number, street name, town and state) of the parcel surveyed, month/day/year, scale, graphic scale and name and address of the firm or surveyor responsible for the survey. Revisions shall be noted near the title block with reference number, date, description and initials of the responsible surveyor.
 - b. All lines and lettering sizes for plans shall be of such dimensions and widths as to be clear and legible when the plan is reproduced.
 - c. A vicinity map should be provided.
 - d. North arrow and notation as to its reference (e.g. Grid, Magnetic or Assumed) shall be shown on each sheet. Magnetic bearings shall show the date of the observation.
 - e. All pertinent bearings or angles, linear dimensions and areas shall be indicated to the accuracy of the measurements observed. One course of the survey shall be represented with a bearing referenced to the meridian.
 - f. The minimum data for all curve segments along the perimeter of the parcel is: central angle, radius, and the arc length. When lines are not radial or not tangent, the angle-to-chord or chord bearing and the chord dimension shall be shown.

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- g. Sufficient data shall be shown on the plan to allow the retracement of all lines and points.
- h. Name(s) of record property owner, and names of record abutting property owners shall be shown. Abutting property identification shall include: tax assessor's plat and parcel number and subdivision parcel number, where applicable.
- i. When a planimetric or topographic feature controls the location of a line or point found or created, the relationship of the feature to the line or point shall be shown. Benchmarks and datum plane shall be indicated when vertical control is required or stated.
- j. Map closures should be consistent with the CLASS of survey performed.
- k. Any parcel of land which has an irregular boundary shall have a closing tie line in the general vicinity of said irregular boundary. The closing tie line shall be provided with all angular and linear dimensions required to mathematically close the survey.
- l. Significant discrepancies between measured or calculated data and record data shall be depicted on the plan. The plan shall disclose which of these values has been utilized in the computations.
- m. A legend shall be included indicating the definitions of all abbreviations and symbols used.
- n. Monumentation of the parcel being surveyed and monumentation of public ways which provide useful reference orientation shall be indicated. Reference monumentation utilized in developing the plan shall be indicated. Monument notations shall include the character, type and condition of the monument and shall indicate whether the monument was "found" or "set". If known, the origin of found monuments shall be shown. When there is no available reference, this shall be so stated.
- o. Streets, roads, easements of record and/or usage (e.g. public, private or right-of-way) shall be shown. Names and route numbers of streets and ways within the plan area shall be indicated. References to Highway Plats shall be included, where applicable. Stationing and offset ties to stationing shall be shown, where applicable.
- p. Utilities, overhead and underground, where apparent and applicable, shall be shown.
- q. Observed encroachments and/or record evidence of easements shall be shown.

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- r. Location of buildings and other important physical features shall be shown, where appropriate. All observed cemeteries and burial grounds shall be shown.
- s. Evidence of fences, walls, trees, etc. that appear to indicate a boundary line or corner shall be shown or noted. This evidence may be dimensioned using offset lines from the property lines.
- t. Where appropriate and feasible, the corners of the parcel shall be referenced to the Rhode Island State Plane Coordinate System.
- u. The area of the parcel(s) shall be shown in English units.
- v. The surveyor shall recommend that the client file the plan in the Land Evidence Records of the Town or City in which the property is located.
- w. Classifications for both horizontal and vertical surveys shall be indicated. The seal, signature, and the following statement, signed by the surveyor, shall appear on every plan:

This survey and plan conform to a CLASS ___ Standard as adopted by the Rhode Island Board of Registration for Professional Land Surveyors

By: _____
Registered Professional Land Surveyor Date

Section 3.03 Additional Standards and Specifications Which May Apply:

- 1. "Minimum Standard Detail Requirements for ALTA/ACSM LAND TITLE SURVEYS" as adopted by American Land Title Association and American Congress on Surveying & Mapping, 1992, as may be amended.

APPENDIX A: TRANSITION PERIOD

Section 04.00 Data Accumulation Surveys.

Data Accumulation Surveys are topographic surveys, photogrammetric surveys, utility surveys, site surveys, hydrographic surveys and other surveys designed to report physical data.

04.01 Procedural Standards

- A. Research and Preliminary Analysis.** The surveyor shall:
1. Determine the purpose of the survey, the specific items of data to be accumulated and the degree of completeness and accuracy necessary.
 2. Obtain from public agencies and utility companies, and local land evidence records copies of available deeds, maps and plans pertinent to the survey.
 3. Review the available descriptions of monuments referencing the horizontal and vertical datums upon which the work is to be based.
 4. Observe Section 3.01-A.-8 through 10.
- B. Field Investigation.** The surveyor shall:
1. Search for and verify monuments referencing horizontal and vertical datums.
 2. Establish, adjust and monument necessary control lines to which the survey is to be referenced.
 3. Extend the survey a reasonable distance beyond the limits of the project to include physical characteristics that may affect the site.
 4. Observe Section 3.01-B.-5. and 7.
- C. Computations, Conclusions.** The surveyor shall:
1. Make any reductions and compilations necessary.
 2. Make necessary computations to verify correctness of measurements.
 3. Evaluate and edit collected data, where applicable.
 4. Prepare in an appropriate form, the results of the survey in a concise manner to minimize misinterpretation.

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04.02 Technical Standards

A. Measurements

1. Observe Section 3.02-A.-1. and 2.
2. Vertical:
 - a. Whenever feasible, elevations shall be referenced to the National Geodetic Vertical Datum (current revision) or another locally recognized datum.
 - b. For the purpose of establishing bench marks, level loops shall close to a minimum accuracy of 0.05 feet times the square root of the length of the level run in miles (CLASS "II" - see page 7). A statement shall be made on all associated mapping as to the CLASS Standard of the level run.
 - c. A minimum of two (2) project bench marks shall be established on each site, and their locations, elevations and datum base shall be shown on the final plan. The reference bench mark upon which the project bench marks are based shall also be indicated.
3. Topographic (manual):
 - a. Measurements shall be taken with a precision compatible with the nature and specifications of the project.
 - b. Vertical measurements shall be taken to the nearest hundredth of a foot when locating such cultural features as building floor elevations, manholes, curbing, pipe inverts, pavement, etc.
 - c. Vertical measurements shall be taken to the nearest tenth of a foot on natural ground, water levels, etc.
4. Topographic (aerial):
 - a. Photogrammetric surveys shall conform to the standards of the American Society for Photogrammetry and Remote Sensing, entitled:

"ASPRS Interim Accuracy Standards
For Large-Scale Maps",
dated 1988, as may be amended.

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B. Monuments

1. The control lines or points to which the survey is referenced shall be marked with physical monuments set in a manner providing a degree of permanence consistent with the terrain, physical features and purpose of the survey.

C. Plans

1. The client may be furnished the results of the survey in an appropriate form (e.g. plans and sketches, cross-sections, diagrams, tabulations, etc.) as follows:
 - a. Observe Section 3.02-C.-1.-a,b,c,d,m,o,p,r,and w.
 - b. A statement describing the data accumulation methods employed (ie. field survey, aerial photogrammetry, other existing mapping) shall be included. Compiled data shown shall indicate the source of the data and to what extent the information was verified.
 - c. Identification of horizontal and vertical datums to which the measurements are referenced shall be included.
 - d. If property boundaries are shown, a statement of their CLASS shall be made.

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Section 05.00 Construction Surveys.

05.01 Procedural Standards

A. Research and Preliminary Analysis. The surveyor shall:

1. Obtain from the client the approved specifications and plans setting forth the project for which the layout survey is to be conducted.
2. Review from known private and public sources available copies of data affecting the project.
3. Determine the appropriate number of control points to be established and the relationship of said points to the proposed construction.
4. Observe Section 3.01-A.-8. and 9.
5. Plan the procedure for performing the construction layout.

B. Field Procedures. The surveyor shall:

1. Search for and verify monuments, lines or objects indicated by the construction documents as the intended references for the project's horizontal and vertical datums.
2. When appropriate, establish, adjust and monument control points and lines required for the final layout surveys.
3. Observe Section 3.01-B.-5. and 7.
4. Immediately bring to the attention of the client and the author of the design plan (where appropriate) any inconsistencies disclosed by the survey or by examination of the plans.

C. Computations, Conclusions. The surveyor shall:

1. Make necessary computations to verify the accuracy of measurements.
2. In the event of the discovery of any discrepancies between the construction documents and the layout as surveyed, notify the client, and indicate the corrective measures that were taken, if any.
3. Observe Section 3.01-C.-5.

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05.02 Technical Standards

A. Measurements

1. Measurements shall be taken to a precision compatible with the particular problem involved and with the size and nature of the project involved.
2. Observe Section 3.02-A.-2.

B. Monuments

1. Construction layout monuments shall be of a type and character and set in a manner providing a degree of permanency consistent with the terrain, physical features and intended use.
2. Sufficient monuments and offset information shall be provided to enable the user to check the accuracy of any points or lines established therefrom.
3. Monuments shall be witnessed in a manner that shall be easily discoverable. Any stakes that show offsets and/or cut and fill data shall also show sufficient information to identify the horizontal position of the referenced point.

05.03 Additional Standards and Specifications Which May Apply:

1. "Manual On Construction Layout", DRAFT Revision #2, Dated 02-19-1992", as may be amended.

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Section 06.00 Global Positioning Systems (GPS) Standards

The use of Global Positioning System surveys in the State of Rhode Island shall conform to those standards and specifications as set forth in:

"Geometric Geodetic Accuracy Standards and
Specifications for Using GPS Relative
Positioning Techniques
Federal Geodetic Control Committee
Version 5.0 May 11, 1988
Reprinted with correction: August 1, 1989",
as may be amended.

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Section 07.00 General Presumptions of Practice

The following presumptions shall be utilized unless sound evidence exists to justify alternative practices:

Section 07.01 Walls and Fences

1. The center of a wall or fence shall be the dividing line between abutting properties when neither is a public way, unless otherwise defined.
2. The face of a wall or fence nearest the center line of a public way shall be taken as the limit of the right-of-way, provided either of the following conditions exist:
 - a. both faces of the wall or fence are exposed to the same height or
 - b. the wall or fence retains land abutting the public way.
3. The exposed face of every wall or fence that supports a public way shall be the boundary line of the right-of-way.
4. The exterior face of a wall or fence enclosing a cemetery or burial ground shall delineate the boundary line of the cemetery or burial ground unless one or more of these walls or fences is of the type enumerated in Section 07.01-1. through 3. above, whereupon those assumptions shall be utilized.
5. The surveyor is advised to consider the extension of title lines to the centerline of the public right-of-way.

Section 07.02 Side Shots

1. All locations made and/or set from any traverse are to be accomplished using the same procedure and equal or better precision as that utilized for the primary traverse and the CLASS of precision shall be stated.
2. All side shots made from any traverse shall be made in accordance with practices and techniques which ensure confident locations.
3. A traverse run to locate or set angles or line points on boundary lines should be located as closely as practical to the presumed boundary lines. The surveyor shall have the flexibility to increase the separation distance between the primary traverse and the boundary lines in those instances where instrumentation may yield greater precision from said increased separation distance.

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4. It is suggested that all distances be laid-out or observed a minimum of two (2) times. All angles and repetitions of angles shall be turned and read in the direct and indirect positions and all observed data shall be recorded.
5. Prior to the establishment of the primary traverse, a diligent search shall be made for all angle points on boundary lines initially presumed to be along stone walls, fences or other physical evidence. Walls, fences or other physical monuments of a similar nature shall be observed along their entire length for angle points and deflections.
6. The surveyor shall be responsible for determining which deviations from a straight line will constitute angle points in the boundary line and which may be the result of vandalism or the ravages of time. The surveyor shall locate and record those deviations determined to be angle points.

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Section 08.00 Deviation From Published Standards

- 08.01 Nothing contained in these Standards shall prohibit reasonable deviations from the specific requirements of a particular Section when, in the prudent professional opinion of the land surveyor in responsible charge, an alternative approach or methodology will yield equal or better results, or is dictated by the particular circumstances of the survey activity involved; provided that such alternative approach or methodology shall comply with the overall intent of the procedural and technical standards as outlined herein.



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