

## ATTACHMENT A - BASEMAP SCOPE OF SERVICES

1. Prepare base maps by in conformance with Title 435 of the Board of Registration for Professional Land Surveyors, (attached herein) more specifically Section 1.9.4 Construction Surveys, such that Construction Contract Drawings, Easements, and Record Drawings can be prepared from them. The base maps shall cover a 200-foot-wide corridor centered along the alignment of the existing pipeline route and all ancillary improvements, as identified in Figure 1. Incorporate all existing studies, utility data, record drawings, easement and land takings for the pipeline sections that are affected by this Project.
  - a. The base maps shall include a continuous plan and centerline profile for the proposed work, showing all appurtenances, including line valves, air/vacuum valves, blow-offs, connections, bends and dips, and all underground and overhead utilities within a corridor of 200 feet along the alignment, highway layout line, stationing and abutting land parcels. Base survey shall also include the boundaries of all wetland resource areas within 200 feet of the Project impact area, and potential access/staging areas.
  - b. Prepare base maps in accordance with National CAD Standards, using AutoCAD Civil 3D version 2014.
  - c. Conduct all survey work in accordance with Title 435 of the Board of Registration for Professional Land Surveyors.
  - d. The vertical datum shall be based on National Geodetic Vertical Datum (NGVD 1988). Horizontal control shall be based on the Rhode Island State Plane (NAD83) coordinate system.
  - e. It is anticipated that base mapping shall be prepared by Mobile/Stationary surveying equipment, Low Flight Level LiDAR, GPS Stationing or traditional survey methods.
2. Collect and verify pertinent data on all underground and overhead utilities. Field verify survey details not readily visible during survey including manhole inverts, depth of bury of adjacent utilities that must be crossed and other subsurface structures. Meet with municipalities and private utility owners to obtain information on their facilities along the Project route and to notify them in writing of the Work proposed for this Project.
  - a. Prepare correspondence to municipalities and private utility companies requesting the best available information. Include specific questions about piping materials, subsurface conditions (paving type and thickness, buried traffic signal loops, buried railroad and streetcar rail tracks and track foundations, abandoned structures, known unsuitable soil, and other geotechnical information etc.) jurisdiction, surface restoration requirements (tree restoration, sidewalk and road restorations, paving moratoriums, curbing, street painting materials and type, etc.), hours of work and/or seasonal restrictions and representative domestic service connections to the utility, where available (water corporation ties and depth information, sewer connection ties and depth information, gas connection ties and depth information). Consider all responses during the preliminary design evaluation.

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- b. Collect and review pertinent records and drawings of pipelines, structures and other related information maintained by the City, state and federal agencies, and private utilities. Where utility records are unavailable or are in conflict with field conditions, the field data will take precedent. The Consultant shall perform Level B Subsurface Utility Engineering (SUE) investigations as detailed below:
    - i. Level B SUE Services consist of field locating and mapping all existing utilities between the Pettaconsett Meter House and the Pettaconsett River and at the end of Lincoln Avenue from the fence to the front door entry sidewalk at the Cardi Corporation building at the end of Lincoln Avenue, including all permits, construction zone safety plans and confined space entry services as necessary to complete the required Level B SUE services.
  - c. Locate in plan all underground and overhead utilities and structures along the Project route on the base maps.
3. Submit the electronic files of the draft base map drawings of the entire alignment. The base map drawings shall show all the information obtained in the items above.
  4. Assist in a field spot check to confirm the accuracy of the drawings. The drawings shall be revised and resubmitted subsequent to the field spot-check.

**435-RICR-00-00-1**

## **TITLE 435 - BOARD OF REGISTRATION FOR PROFESSIONAL LAND SURVEYORS**

**CHAPTER 00 - N/A**

**SUBCHAPTER 00 - N/A**

PART 1 - Rules and Regulations for Professional Land Surveying

### **1.1 Purpose, Authority and Scope**

- A. Purpose: This Regulation is 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.
- B. Authority: This regulation is promulgated in accordance with R.I. Gen. Laws §§ 5-8.1-1, 5-8.1-4, 42-14-17, and 42-35-1-6.1, the "Administrative Procedures Act," by the Board of Registration for Professional Land Surveyors with the approval of the Director of DBR.
- C. Scope: This Regulation applies to the licensing and regulation of the practice of Land Surveying in Rhode Island.

### **1.2 Definitions**

- A. "Act" means R.I. Gen. Laws § 5-8.1-1, *et seq.*
- B. "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.
- C. "Biennium" (for Continuing Education purposes) means a period of two years, commencing on July 1st and terminating on June 30th.
- D. "Board" means the "Board of Registration for Professional Land Surveyors" as defined in R.I. Gen. Laws § 5-8.1-2(4) or, when the context permits, also mean the relevant administration or personnel of the Board.
- E. "Boundary Survey" means 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 in § 1.9 of this Part.

- F. “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, as defined in R.I. Gen. Laws § 5-8.1-13(b)(2).
- G. "Chair" means the Chairperson of the Board of Registration for Professional Land Surveyors.
- H. “Department” means the Department of Business Regulation.
- I. “Division of Design Professionals” means the administrative division within the Department established pursuant to the Division of Design Professionals Act, R.I. Gen. Laws § 5-84-1 *et seq.*, that is comprised of four (4) Boards; the State Board of Registration for Professional Land Surveyors, the Board of Registration for Professional Engineers, the Board of Examination and Registration of Architects, and the Board of Examiners of Landscape Architects.
- J. “Entity” means any legal entity that engages in the Practice of Land Surveying. Entity includes, but is not limited to, corporations, partnerships, sole proprietorships, state agencies, municipalities, and municipal agencies.
- K. "Experience" and "Training" shall have the meaning ascribed to the term "Experience" in R.I. Gen. Laws § 5-8.1-2(7), and the terms shall be interchangeable.
- L. “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.
- M. “Issued” when used with reference to 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.
- N. “Land Surveyor Emeritus” means an honorary title issued, upon application, to a retired Professional Land Surveyor who is prohibited from practicing land surveying in the State of Rhode Island.
- O. “NCEES” means the National Council of Examiners for Engineering and Surveying, of which the Board is a member. The Board is authorized to conduct NCEES examinations as a member, and accepts NCEES Certificates as evidence of licensing in other jurisdictions.

- P. “Professional Development Hour (PDH)” means 50 minutes of in-class instruction or 50 minutes of participation in other forms of continuing education, approved by the Board.
- Q. “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.
- R. “Stamp” means the instrument used to apply a seal evidencing registration of a Professional Land Surveyor pursuant to R.I. Gen. Laws § 5-8.1-12.
- S. Capitalized terms used herein but not otherwise defined shall have the meanings ascribed to such terms in the Act.

### **1.3 Board Procedures**

- A. Complaints and Hearings. The Board shall investigate complaints and conduct hearings in accordance with § 1.10 of this Part.
- B. 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.
- C. Examination Coordination. A member of the Board shall be appointed to coordinate with the NCEES 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.
- D. 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.
- E. 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 in-state 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.
- F. 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 should be made to technical standards.

G. Administrative Assistant

1. Responsibilities. The Department shall provide the Board with an 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.
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. 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.
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 ("COA") number, date of issuing certificate, kind of certificate, record of fees paid, and actions thereon.

H. Certificates of Registration & Certificates of Authorization. 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.

I. Sequence

1. The registration numbers for Professional Land Surveyors will be in numerical sequence and not transferable.
2. The COA serial numbers will be in numerical sequence and not transferable.

J. 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. All application fees are non-refundable.

1. Land Surveyors

Fee to accompany the application:	RI Resident	\$100.00
	Out of State Resident	\$150.00
Registration Fee	Initial Registration Fee	\$125.00
	Annual Registration Renewal	\$125.00 per year
Reinstatement Registration	Within four years (expired)	2 x \$125.00 = \$ 250.00
	In excess of four years (lapsed)	\$125.00 plus a \$100.00 or \$150.00 re-application fee as applicable above in this chart according to state of residence.
Initial and Re-examination Fee	RI Resident	\$100.00
	Out of State Resident	\$100.00

2. Certificates of Authorization (COA)

Initial application for COA	\$50.00 per year (\$10.00 per month fee added to delinquent applications)
Renewal of COA	\$50.00 per year (\$10.00 per month fee added to delinquent applications)

3. Land Surveyor-in-Training

Fee to accompany the application	RI Resident	\$100.00
	Out of State Resident	\$150.00

## 1.4 Applications

- A. Licensing Applications & COA Applications. Application forms for licensing as a Professional Land Surveyor or Land Surveyor in Training and to obtain a COA may be obtained from the Board's office or the Department's website. 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 is prescribed by R.I. Gen. Laws § 5-8.1-9.
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.
  2. The Board may request additional evidence or information in writing to further support the application.
  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.
- B. COA Applications 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.
- C. 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.
- D. Applicants for examination reciprocity or COA must disclose any and all disciplinary action imposed by other professional registration jurisdictions.
- E. Approval of Applications
1. All applications shall be considered individually and passed or rejected on a roll call vote of the Board.
  2. The action taken on each application shall be recorded in the minutes.



3. An outline of the action taken shall be placed with the application.
4. Applicants shall be promptly notified of the Board's actions.

F. Land Surveyor-in-Training Designation

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 examinations entitled "Principles and Practice" and "Rhode Island Examination" if he or she has obtained the required Training and Experience. Credit for the "Fundamentals of 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.

## **1.5 Examinations and Re-Examinations**

A. Land Surveyors Registration Examination

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.
2. Evaluation of education and Experience / Training credits shall be at the discretion of the Board and in general accordance with NCEES criteria.
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.
4. The Land Surveyors Registration Examination will be given to all applicants qualifying under R.I. Gen. Laws § 5-8.1-9.
5. The Land Surveyors Registration Examination shall be taken and successfully passed by all applicants.

6. The scope, dates, times and location(s) of the Land Surveyors Registration Examination are established by the Board in conjunction with NCEES.
  7. The minimum-passing grade in all subjects of the Land Surveyors Registration Examination shall be as established by the Board and NCEES.
  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 (5) times will be allowed to be reexamined for a period of five (5) years from the date of the last failed exam.
  9. Any candidate who fails over a period of two (2) years to appear for an examination for 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.
- B. Land Surveyors Registration Examination Content. The examination will consist of three separate written exams:
1. Fundamentals of Land Surveying - This portion of the examination will be prepared and scored by the NCEES.
  2. Principles and Practice of Land Surveying - This portion of the examination will be prepared and scored by NCEES.
  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 will 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.
- C. Conduct of the Examination. Examinations shall be conducted under the following general rules:
1. No candidate shall communicate during the examinations with any other candidate in any way without the direct permission of the Proctor.
  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.

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.
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.

D. Examination Review

1. Policy - It is the policy of the Board to utilize review of an applicant's prior examinations administered pursuant to this Regulation 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".
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 Fundamentals of Surveying or Principals and Practice examinations failed by particular applicants. In all cases, the NCEES standards for examination review shall be followed.
  - a. Any applicant wishing to review his or her prior examination must make a written request 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.
  - b. 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.
  - c. All reviews will be conducted at the Board's office. An applicant may not receive copies of any examination materials nor may the applicant make copies of or write down examination questions or answers.
  - d. The duration of each review will be determined by the Board-appointed reviewer.

- e. 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 Fundamentals of Surveying or Principles and Practice examination.
- f. 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 NCEES requests the Board to limit the reviews conducted for any particular applicant(s) to one (1) or none (0). In that case, the NCEES's request shall govern the Board's policy.

#### E. Re-Examination

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.
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 (4) months preceding the scheduled examination date.
3. Requirement for Re-Examination. Registrants are required to be re-examined under the following circumstances:
  - a. 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.
  - b. 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.
  - c. 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 have been disciplined by reason of conviction of any felony or crime involving moral turpitude may, in

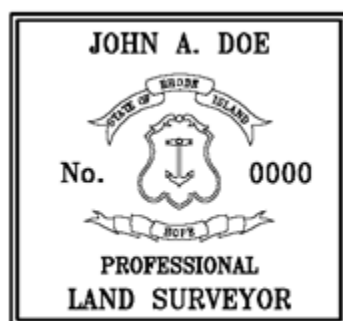
the discretion of the Board, be required to be re-examined in accordance with Board procedures prior to being re-admitted to the Practice of Land Surveying.

- d. 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 certifying 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.
  - e. Individuals who have not re-registered for a period of time in excess of three (3) years, regardless of the reason, may be required to be re-examined in accordance with Board procedures prior to being re-admitted to the Practice of Land Surveying.
4. All costs and expenses associated with the re-examination process shall be borne by the individual applying for re-admission.

## 1.6. Seal and Stamp

### A. Professional Land Surveyor's Seal & Stamp

1. SEAL and/or Stamp. The seal and/or Stamp shall be approximately 1-½ inches 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 the words "Professional Land Surveyor" shall appear below the State Emblem / Registration Number per the following example:



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.
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.
4. The Professional Land Surveyor shall imprint the seal only if in responsible control of the project.
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. 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.

## **1.7 Continuing Education**

- A. 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.
- B. As of July 1, 2003, all applicants for renewal for registration shall satisfy these minimum requirements.
- C. Basic Requirements
  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.
  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.

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

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

1. Fifty (50) minutes of approved and acceptable professional seminar activity = 1 PDH
2. One (1) semester credit of approved and acceptable college/university course work = 5 PDH
3. Fifty (50) minutes of approved and acceptable professional activity pursuant to § 1.7(E) of this Part = 1 PDH

E. Types of Acceptable Continuing Education / Approval of Programs for Registrants

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 courses that are directly related to the Practice of Land Surveying as determined by the Board.
2. The Board will grant credit for only such continuing education activities that the Board determines to satisfy the following criteria:
  - a. There is clear purpose and objectivity for each activity;
  - 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;
  - c. There is evidence of pre-planning which may include the opportunity for input by the target group to be served;
  - d. The presentation will be made by persons who are well-qualified by reason of education or Experience; and

- e. There is provision for individual participant registration which will include information required for record keeping and reporting.
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.
4. Other activities which may be used to satisfy continuing education requirements in the Board's discretion are:
  - a. Approved programs conducted by corporations, government agencies or other organizations;
  - b. Authorship of published papers, articles or books;
  - c. First-time preparation for and presentation at technical meetings, short courses or seminars; and
  - d. The preparation for and presentation of approved credit courses at Board approved educational institutions.
5. PDH credits will be awarded for memberships and service in societies and associations as follows:
  - 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;
  - 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;
  - 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;



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

F. Reports & Records

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.
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.

- G. 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.

## H. Approval of Programs for Sponsors

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:
  - a. Instructors and their qualifications;
  - b. Synopsis of course material; and
  - c. Such other information as the Board may request.
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.

I. 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.

J. 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:

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.
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.

K. 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.

L. 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:

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
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.

M. Inactive Registrants / Reinstatement to Active Registration

1. A registered Professional Land Surveyor may request, in writing, to be placed on the Board's Inactive role, thereby obtaining inactive status.
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.
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.*
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:
  - 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
  - b. Successful completion of the NCEES examination of Principles and Practice of Land Surveying within one (1) year immediately prior to application for reinstatement.
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.

## 1.8 Professional Standards and Conduct

A. Preamble

1. In accordance with R.I. Gen. Laws § 5-8.1-1, *et seq.*, the Board hereby adopts the following “Rules of Professional Conduct” as a Code of Ethics, which shall apply to all persons or entities registered under R.I Gen. Laws § 5-8.1-1, *et seq.*
  2. All persons or entities registered under R.I. Gen. Laws § 5-8.1-1, *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.
  3. In these Rules of Professional Conduct, the word “registrant” shall mean any person or Entity holding either a registration or a COA issued by this Board to practice land surveying.
- B. Fundamental Canons. Registrants, in the fulfillment of their professional duties, shall abide by the following fundamental canons:
1. Duty to the Public. Registrants shall at all times recognize that their primary obligation is to protect life, health, and property, and to promote the public welfare. If their professional judgment is overruled under circumstances where 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.
  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.
  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.
  4. Registrants shall avoid improper solicitation of professional employment.
  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.
- C. Use of Seal

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 life, health, and property, and to promote the public welfare.
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.
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.
4. Uncompleted or preliminary documents shall be clearly marked and identified as such and need not be sealed or signed.
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.
6. The failure to conform to the above requirements shall constitute the failure to seal a document.

D. Duty to Avoid Conflicts of Interest

1. Registrants shall act in professional matters for each employer or client as faithful agents or trustees, and shall avoid conflicts of interest.
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.
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.
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.

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.
  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.
  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. 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.
- E. Other Ethical Proscriptions. It shall be considered unprofessional for a Professional Land Surveyor:
1. To act for his or her client or employer in professional matters other than as a faithful agent or trustee.
  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.
  3. To attempt to supplant another Professional Land Surveyor or professional service provider after that professional's services have been retained.
  4. To advertise in self-laudatory language or other manner derogatory to the dignity of the profession.

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.
6. To assist in filing an application for a COA by appearing as the Professional Land Surveyor in “Responsible Charge” when he or she does not meet the requirements for “Responsible Charge.”
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. 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.
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 will all other precepts regarding “Responsible Charge” contained in this Regulation.
10. To willfully and knowingly violate the provisions of R.I. Gen. Laws § 5-8.1-1, *et seq.* or to assist any person or Entity seeking to do so.

## **1.9 Procedural and Technical Standards**

Surveys shall conform to the Procedural and Technical Standards set forth in § 1.9 of this Part.

### **1.9.1 Types of Surveys**

#### **A. General**

1. 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.
2. 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.

- B. 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 §§ 1.9.2 through 1.9.6 of this Part.

### **1.9.2 Boundary Surveys**

A. Comprehensive Boundary Surveys

1. General. 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.
3. 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 § 1.9.2(A)(4) of this Part.
- (5) Retain all records that may be used to substantiate conclusions.

#### 4. 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 ( $60^\circ$ ), 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 § 1.9.8 of this Part.

##### c. Plans for Comprehensive Boundary Surveys. When a plan for a Comprehensive Boundary Survey is prepared, the elements identified in §§ 1.9.7(A) and (B) of this Part 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 § 1.9.7(C) of this Part shall be included on the plan.

## B. Limited Content Boundary Surveys

### 1. 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.

### 2. Examples of Limited Content Boundary Surveys:

- a. 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.
- b. 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.
- c. 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.
- d. Easement Survey. A survey that depicts and notes the position of an existing or proposed easement with respect to:
  - (1) boundary monumentation found or set;
  - (2) physical improvements and features;

- (3) other record easements and visible evidence of the use thereof;
    - (4) unresolved conflicts with record deed descriptions and maps;
    - (5) all visible encroachments; and
    - (6) where boundaries are intersected by the easement lines, a statement of their type and class shall be made.
  - e. Boundary Stake-Out Survey. A survey that marks or monuments a parcel's boundary corners or lines.
  - f. 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:
    - (1) substantial physical improvements and features;
    - (2) easements and visible evidence of the use thereof;
    - (3) record and apparent means of ingress and egress;
    - (4) lines of occupation, including fences, walls, hedges and other such features;
    - (5) conflicts with record deed descriptions and plans;
    - (6) apparent boundary encroachments; and
    - (7) monumentation recovered and/or set.
3. 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.

4. 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 § 1.9.8 of this Part.

- c. Plans for Limited Content Boundary Surveys. When a plan for a Limited Content Boundary Survey is prepared, the elements identified in §§ 1.9.7(A) and (B) of this Part 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 § 1.9.7(C) of this Part shall be included on the plan.

### **1.9.3 Data Accumulation Surveys.**

#### **A. General**

- 1. 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.
- 2. Examples of Data Accumulation Surveys
  - a. 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.
  - b. 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.
  - c. 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.
  - d. 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.
  - e. Such other surveys designed to collect and report data as may be described in a statement regarding the purpose of the data accumulation survey.
- 3. 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.

#### **B. Procedural Standards for Data Accumulation Surveys.**

1. Research and Preliminary Analysis. The PLS shall:
  - a. Determine the purpose of the survey, the specific items of data to be accumulated and the degree of completeness and accuracy necessary.
  - b. Obtain from public agencies and utility companies, and local land evidence records copies of available deeds, maps and plans pertinent to the survey.
  - c. Review the available descriptions of monuments referencing the horizontal and vertical datums upon which the work is to be based.
  - d. Examine and analyze the data.
  - e. Form preliminary conclusions as to the completeness of data and identify inconsistencies in the record information.
  - f. Plan procedure for performing the field survey.
2. Field Investigation. The PLS shall:
  - a. Search for and locate and verify monuments referencing horizontal and vertical datums.
  - b. Establish, adjust and monument necessary control lines to which the survey is to be referenced.
  - c. Extend the survey a reasonable distance beyond the limits of the project to include physical characteristics that may affect the site.
  - d. Take sufficient check measurements to verify the observations.
  - e. 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.
3. Computations, Analysis of Data and Formation of Conclusions. The PLS shall:
  - a. Make any reductions and compilations necessary.
  - b. Make necessary computations to verify correctness of measurements.



- c. Evaluate and edit collected data, where applicable.
- d. Prepare in an appropriate form, the results of the survey in a concise manner to minimize misinterpretation.

C. Technical Standards for Data Accumulation Surveys

1. Measurements

- a. Measurements shall be taken to a precision that is compatible with project needs and with the size and geometric shape of the parcel involved.
- b. Measurements shall be taken with properly calibrated instruments.
- c. Vertical
  - (1) Where feasible, elevations shall be referenced to the National American Vertical Datum of 1988 [NAVD 88] or other locally recognized datum.
  - (2) A statement shall be made on all associated mapping as to the Class Standard of the leveling survey.
  - (3) 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.
- d. Topographic (manual):
  - (1) Measurements shall be taken with a precision compatible with the nature and specifications of the project.
  - (2) 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.
  - (3) Vertical measurements shall be taken to the nearest tenth of a foot when locating such "soft" features as natural ground, water levels, etc.
- e. Topographic (aerial):
  - (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.

2. Monuments for Data Accumulation Surveys

- a. 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.
- b. Monuments shall be established in accordance with § 1.9.8 of this Part.

3. Plans for Data Accumulation Surveys.

- a. 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.).
- b. When a plan is prepared, in addition to the requirements of § 1.9.7(A) of this Part, it shall include the following:
  - (1) A statement describing the data accumulation methods employed (e.g. field survey, aerial photogrammetry, etc.) shall be included.
  - (2) 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 § 1.9.6 of this Part
  - (3) Identification of the horizontal and vertical datums to which the measurements are referenced.
  - (4) If property boundaries are shown, a statement of their Type per § 1.9.1 of this Part and their Class per § 1.9.9 of this Part shall be made.

4. Certification for Data Accumulation Surveys. When a plan for a Data Accumulation Survey is prepared, the certification identified in § 1.9.7(C) of this Part shall be included on the plan.

#### **1.9.4 Construction Surveys.**

##### **A. General**

1. 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.

##### **B. Procedural Standards for Construction Surveys**

1. Research and Preliminary Analysis for Construction Surveys. The PLS shall:
  - a. Obtain from the client the approved specifications and plans setting forth the project for which the layout survey is to be conducted.
  - b. Review from known private and public sources available copies of data affecting the project.
  - c. Determine the appropriate number of control points to be established and the relationship of said points to the proposed construction.
  - d. Examine and analyze the data.
  - e. Form preliminary conclusions as to the completeness of data and identify inconsistencies in the record information.
  - f. Plan the procedure for performing the construction layout.
2. Field Procedures for Construction Surveys. The PLS shall:
  - a. 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.
  - b. When appropriate, establish, adjust and monument control points and lines required for the final layout surveys.
  - c. Take sufficient check measurements to verify the observations.
  - d. 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.

- e. 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.

3. Computations, Conclusions for Construction Surveys. The PLS shall:

- a. Make necessary computations to verify the accuracy of measurements.
- b. 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.

C. Technical Standards for Construction Surveys.

1. Measurements

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

2. Monuments

- a. 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.
- b. Sufficient monuments and offset information shall be provided to enable the user to check the accuracy of any points or lines established therefrom.
- c. 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.

3. Plans for Construction Surveys.

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

- b. When a plan is prepared, in addition to the requirements of § 1.9.7(A) of this Part, it shall include the following:
  - (1) Identification of horizontal and vertical datums to which the measurements are referenced.
  - (2) If property boundaries are shown, a statement of their Survey Type per § 1.9.1 of this Part and their Class per § 1.9.9 of this Part shall be made.
- 4. Certification for Construction Surveys. When a plan for a Construction Survey is prepared, the certification identified in § 1.9.7(C) of this Part shall be included on the plan.

### **1.9.5 Control Surveys**

#### **A. General**

- 1. 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.
- 2. Control Surveys shall conform to a Class II measurement standard.

#### **B. Procedural Standards for Control Surveys**

- 1. Research and Preliminary Analysis. The PLS Shall:
  - a. 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.
  - b. 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.
  - c. Research local National Geodetic Survey (NGS) control within and adjacent to the project area.
  - d. Review the project limits and design a network that is suitable.
- 2. Field Investigation. The PLS Shall:
  - a. Set out primary control monuments and tie them into a local project network using methods sufficient to meet the requirements of § 1.9.9 of this Part.

- b. Prepare field sketches of the monument locations to enable future recovery of the monuments.
- 3. Computations, Conclusions. The PLS shall:
  - a. Make necessary computations to verify the accuracy of measurements.
  - b. 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.

### C. Technical Standards for Control Surveys

#### 1. Measurements

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

#### 2. Monuments for Control Surveys

- a. 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.
- b. Sufficient monuments and offset information shall be provided to enable the user to check the accuracy of any points or lines established therefrom.
- c. 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.

#### 3. Plans for Control Surveys

- a. 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.).
- b. When a plan is prepared, in addition to the requirements of § 1.9.7(A) of this Part, it shall include the following:
  - (1) Identification of horizontal and vertical datums to which the measurements are referenced.

- (2) If property boundaries are shown, a statement of their Type per § 1.9.1(B) of this Part and their Class per § 1.9.9 of this Part shall be made.
4. Certification for Control Surveys. When a plan for a Control Survey is prepared, the certification identified in § 1.9.7(C) of this Part shall be included on the plan.

### **1.9.6 Compilation Plans**

#### **A. General**

##### **1. Definition**

- a. 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.
- b. 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.
- c. 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.
- d. In addition to the required elements outlined in § 1.9.7(A) of this Part, a compilation plan shall prominently display the following disclaimer within the plan certification:
  - (1) “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.”

### **1.9.7 Plan Requirements, Certifications, and Seals**

- #### **A. General.** Whenever a plan for any type of survey is prepared, it shall include the following:

1. 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.
  2. 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.
  3. A vicinity map.
  4. 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.
  5. A legend indicating the definitions of all abbreviations and symbols used.
  6. 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.
  7. Location of buildings and other substantial physical features, as appropriate.
  8. Observed cemeteries and burial grounds.
  9. 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.
- B. Comprehensive Boundary Surveys and Limited Content Boundary Surveys. In addition to those elements in § 1.9.7(A) of this Part, 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.
- C. 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 435-RICR-00-00-1.9 of the Rules and Regulations adopted by the Rhode Island State Board of Registration for Professional Land Surveyors on \_\_\_\_\_, 20\_\_\_\_, as follows:

- | 1.                                 | Type of Boundary Survey:   | Measurement Specification |
|------------------------------------|--|---------------------------|
| Insert One:                        | Comprehensive Boundary Survey  | I                         |
|                                    | Limited Content Boundary Survey  | I                         |
| If neither, insert:                | Not a Boundary Survey  |                           |
| 2.                                 | Other Type of Survey:  |                           |
| Insert as Applicable:              | Data Accumulation Survey *   | III                       |
|                                    | Construction Survey*   | I or II                   |
|                                    | Control Survey   | I or II                   |
|                                    | Compilation Plan**   | IV                        |
| *Where applicable,<br>also insert: | Vertical Control Standard<br>(§1.9.9(C))   |                           |
|                                    | Topographic Survey Accuracy<br>(§1.9.9(D))   |                           |
| ** In all cases, insert:           | Compilation Plan Disclaimer<br>(§1.9.6(A)(1)(d)).  |                           |
| 3. Insert Detailed<br>Explanation  | Statement of Purpose - The purpose for the conduct of the survey<br>and for the preparation of the plan is as follows: |                           |

By: \_\_\_\_\_ [Insert PLS Signature]

\_\_\_\_\_ [Insert Printed PLS Name and License No.]

\_\_\_\_\_ [Insert COA No.]

[Insert Approved Seal]

- D. 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.

### **1.9.8 Monuments**

#### **A. 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.
- B. Markers include nails, wooden and plastic stakes and other materials possessing a similarly limited life span.
- C. In general, a sufficient number of monuments shall be placed that will allow for the convenient and accurate reproduction of the survey.
- D. 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.

- E. 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.
- F. 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.
- G. 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 § 1.9.7(A) of this Part which indicates the basis of the boundary opinion.
- H. 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 § 1.9.7(A) of this Part.
- I. In the event that monuments are not found/set at property corners or angle points, the surveyor shall prepare a plan in accordance with § 1.9.7(A) of this Part showing the control monuments which reference the boundary location.
- J. 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.

### **1.9.9 Measurement Specifications for Surveys**

- A. General
  - 1. 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 § 1.9.9(B) of this Part. Boundary surveys, subdivisions of land, title surveys, and many construction projects require this level of positional accuracy.
  - 2. 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.

3. 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.
4. 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 § 1.9.6(A)(1)(d) of this Part within the certification language.

B. 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.

<b>TABLE I</b>			
<b>1 SIGMA HORIZONTAL ACCURACY FOR TRAVERSE SURVEYS</b>			
<b>Class</b>	<b>Nominal Positional Accuracy (Pn) Expressed as Ratio</b>	<b>Allowable Precision For Discrete Direct Measurements</b>	
		<b>Linear Precision</b>	<b>Directional Precision</b>

		<b>(Ed) 1</b>	<b>(Ea) 2</b>
I	1:10,000	+/- 0.01 FT	+/- 10"
II	1:50,000	+/- 0.01 FT	+/- 05"
III	1:300	+/- 1 FT	+/- 15'
IV	Compilation of Existing Data – Not a Product of Field Survey.		
Notes:	<p>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.</p> <p>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.</p> <p>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.</p>		

C. Specifications for Vertical Measurements.

<b>TABLE II</b>		
<b>ACCURACY STANDARDS FOR VERTICAL CONTROL SURVEYS</b>		
<b>Class</b>	<b>Level Loop Closure</b>	<b>Maximum Sight Distance</b>
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' (For local project control where the level loop is less than 1 mile.)	300 FEET (See Note 2 & 3)
V-4	Photogrammetric Control (See Note 1)	

Notes:	<p>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.</p> <p>2. The square root of the miles is intentionally omitted from V-3</p> <p>3. The maximum sight distance is suggested to ensure repeatability.</p>
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D. Specifications for Topographic Surveys

<b>TABLE III</b>	
<b>TOPOGRAPHIC SURVEY ACCURACY</b>	
<b>Class</b>	<b>Contour Interval Test</b>
T-1	90% within ½ contour interval
T-2	80% within ½ contour interval
T-3	This class of topographic map applies to photogrammetric maps for which the PLS provides the horizontal and vertical control. See § 1.9.3 of this Part 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.
Notes:	<p>1. 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.</p> <p>2. In using Topographic Accuracy Class T-1 or T-2, the horizontal position of features shall conform to Class III Accuracy.</p>

E. Record of Measurement Data & Evaluation

1. The Entity holding the COA ("COA Holder") issued by the Board 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.

#### **1.9.10 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.

#### **1.10 Complaints, Investigations and Proceedings**

- A. 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.
- B. Complaint Procedure. The procedure of filing complaints with the Board shall be as follows:
  1. Any person or Entity may file a letter form or other form of complaint.
  2. 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.
  3. Seven (7) copies of all supporting documents shall be submitted with the complaint.



- C. Jurisdiction and Investigation. 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. If jurisdiction exists, the Board shall conduct whatever investigation it deems appropriate, including forwarding a copy of the complaint to the applicant, registrant, person or firm that is the subject of the complaint with instruction to respond within such time as the Board determines.
- D. Recommendations. Upon completion of its investigation, the Board may recommend that the Department Director pursue suspension, revocation or other permitted action with respect to the complaint as the Board determines appropriate in accordance with applicable law, or the Board may determine to take no further action on the complaint and to notify the appropriate parties.
- E. Proceedings. All adjudicatory proceedings shall be conducted pursuant to the Department's Rules of Procedure for Administrative Hearings, 230-RICR-10-00-2, and in accordance with the Administrative Procedures Act ("APA"), R.I. Gen. Laws § 42-35-1, *et seq.* .
- F. Declaratory Judgment. All requests for declaratory rulings on the Practice of Land Surveying shall be made to the Department and conducted pursuant to the Department's regulation for Declaratory Rulings and Petitions, 230-RICR-10-00-3, and in accordance with the APA, R.I. Gen. Laws § 42-35-1, *et seq.*
- G. Further Notification. The Department may cause an actual copy of any 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 COA , the Secretary 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 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.
- H. 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.

- I. Public Records. Public records may be made by written request to the Board pursuant to the Access to Public Records Act, R.I. Gen. Laws § 38-2-1, *et seq.* and the Department's regulation for Access to Public Records, 230-RICR-10-00-1.

### **1.11 Severability**

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.