2700 Board of Registration for Professional Land Surveyors

1.0 General Provisions

1.1 Pursuant to 24 Del.C. Ch. 27, the Delaware Board of Professional Land Surveyors ("the Board") is authorized to, and has adopted, these Rules and Regulations. The Rules and Regulations are applicable to all Professional Land Surveyors and applicants to the Board.

1.2 Information about the Board, including its meeting dates, may be obtained by contacting the Board's Administrative Assistant at the Division of Professional Regulation. Requests to the Board may be directed to the same office or visit our web site at www.dpr.delaware.gov.

1.3 The Board's Chair shall preside at all meetings of the Board and shall sign all official documents of the Board. In the Chair's absence, the Board's Vice Chairman shall preside at meetings and perform the duties usually performed by the Chair.

1.4 The Board may seek counsel, advice and information from other governmental agencies and such other groups as it deems appropriate.

1.5 The Board may establish such subcommittees as it determines appropriate for the fair and efficient processing of the Board's duties.

1.6 The Board reserves the right to grant exceptions to the requirements of the Rules and Regulations upon a showing of good cause by the party requesting such exception, provided that the exception is not inconsistent with the requirements of 24 Del.C. Ch. 27.

1.7 Board members are subject to the provisions applying to "honorary state officials" in the "State Employees', Officers' and Officials' Code of Conduct," found at 29 Del.C. Ch. 58.

2.0 Definitions

Definitions under Section 2.0 will be listed in the current "Definitions of Surveying and Associated Terms," published by the National Society of Professional Surveyors, except as otherwise provided by Delaware law.

“Combined Office and Field Experience” - is defined as being multi-faceted experience in responsible charge of land surveying projects, performed under the direct supervision of a professional land surveyor in the active practice of land surveying. The office aspect of this experience shall include the technology relevant to civil drafting, mathematical calculations necessary for subdivision, boundary and right-of-way determinations, road, stormwater, sediment and erosion control, and sewer design as well as the interpolation of field-run topographical data and the like. Office experience should also include applied familiarity with land development submittal and approval processes.

Field experience shall include time spent on site in responsible charge of inspection, evaluation, and gathering of relevant survey information. On-site supervision of and responsibility for field crew personnel while in communication and coordination with a professional land surveyor and office staff shall qualify as field experience.

“Direct Supervision” - applies to one duly licensed as a Professional Land Surveyor (PLS) and only a licensee may provide direct supervision. The physical presence of a PLS on every type of surveying project is not required. There are, however, times when a site visit is necessary to make important decisions involving boundary retracements, property line disputes, etc.

Direct supervision of field crew personnel requires daily contact to determine the need for the presence of a PLS on site. This need would be based upon the type of work to be performed and the professional judgment of the PLS in charge. Should it be determined that a site visit is not warranted, the PLS, at a minimum, should instruct the field crew personnel as to the procedures to be used, the data to be gathered, the maps or plats to be relied upon and the scope of the work to be performed. The PLS shall follow the same minimum requirements when instructing survey office personnel. All assignments performed by survey personnel, both field and office, shall be reviewed and checked by the PLS providing direct supervision.
While it has been argued that a survey crew does not always have to be under the direct supervision of a PLS, only a PLS has the ability to make that determination. It is therefore necessary for the field crew to have daily contact with the PLS so that this decision can be made properly, in order to protect the public.

“Related Science Curriculum” – are those courses of study for which one-third of the required core courses are the same or similar as those required for a Baccalaureate Degree Program in Surveying. These core courses may include but are not limited to Algebra, Trigonometry, Analytical Geometry, Calculus, General Physics and Computer Programming.

Degrees in related fields of study may include but not be limited to Civil Engineering, Mathematics, Physics, Agricultural Engineering, Actuarial Studies, Statistics, Geology and Forestry.

Because requirements for graduation differ from institution to institution, when considering these Related Science Curriculums attention will be given to the specific coursework completed. This examination of completed coursework may allow for greater flexibility of this definition. Section 2708(a).

“Responsible Charge” - shall mean the direct control and personal direction of the investigation, operation and execution of land surveying work requiring initiative, and professional skill and independent judgment as a party chief or survey manager. An individual in responsible charge shall be under the direct supervision of a Delaware licensed professional land surveyor.

“Surveying Curriculum” - For the purpose of these regulations, the term “Surveying Curriculum” will mean any approved curriculum for a Baccalaureate Degree in Surveying as it is accepted by the institution bestowing the said degree. This curriculum shall necessarily include but not be limited to courses in Surveying, Advanced Surveying, Legal Principles of Surveying, Data Adjustment, Subdivision Planning and Layout, Route and Construction Surveying, Engineering and Geodetic Astronomy, Topographic Surveying and Cartography and/or those other studies required by the institution where the degree is earned.

Independent study course work (which includes all correspondence, internet and distance-learning study) shall be considered only if those courses have been accepted by an Accreditation Board for Engineering and Technology (ABET) as part of the approved curriculum. Section 2708(a).

11 DE Reg. 1664 (06/01/08)
16 DE Reg. 1196 (05/01/13)
19 DE Reg. 142 (08/01/15)

3.0 Meeting Schedule and Election of Officers
The Board shall meet at least once each quarter of the calendar year. At the first regularly scheduled meeting in the first quarter, the Board will elect from its members a chair, vice-chair, and secretary. Section 2704(b).

4.0 Periodic Review of Application Form
The Application Form for those seeking licensure under 24 Del.C. Ch. 27 shall be reviewed every five years. Section 2706 (a)(2).

5.0 Designation of the National Examination
For the required National Examination for licensure under 24 Del.C. Ch. 27, the Board adopts the two-part examination developed by the National Council of Examiners for Engineering and Surveying (NCEES), consisting of the Principles and Practice of Surveying Examination and the Fundamentals of Surveying Examination, as amended from time to time (then in effect at time of examination). Section 2706(a)(3).

6.0 Designation of the Drainage Examination/Delaware Law Examination
For the required drainage examination/Delaware law examination the Board adopts the bank of questions developed for this purpose and/or approved for this purpose by a recognized psychometrician or other authority whose services are acquired and approved by the Division of Professional Regulation of the Delaware Department of State. Section 2706(a)(4).

16 DE Reg. 543 (11/01/12)

7.0 Adoption of Administration and Grading Procedures and Passing Scores for National Examination
The Board adopts the administration and grading procedures and the passing scores adopted by the NCEES for the two-part national examination, described in Section 5.0 of these regulations. Section 2706(a)(5).

Foreign Credentialing
8.1 Any applicant holding a degree from a program outside the United States or its territories must provide the Board with an educational credential evaluation from The Center of the National Council of Examiners of Engineers and Surveyors, its successor, or any other similar agency approved by the Board, demonstrating that their training and degree are equivalent to domestic accredited programs. No application is considered complete until the educational credential evaluation is received by the Board.

8.2 Applications will be kept active and on file for two (2) years. If the applicant fails to meet the licensure requirements and/or pass the examination within two (2) years, the application shall be deemed to have expired and the applicant must reapply in the same manner as for initial application, i.e., submits the application, documentation, proper fee, and obtains board approval to be eligible to sit for the examination.

8.3 The Board will not review incomplete applications.

8.4 All signatures must be original on all forms.

8.5 The applicant shall have obtained the passing score on the NCEES Fundamentals of Surveying, NCEES Principles of Surveying and DE State Drainage and Law Examination.

11 DE Reg. 1664 (06/01/08)

9.0 Issuance and Renewal of License

9.1 When an applicant is approved by the Board for licensure, the Division of Professional Regulation will issue a license number and mail a license to the applicant.

9.1.1 Lost, destroyed, or mutilated licenses may be replaced by payment of the appropriate fee to the Division of Professional Regulation, 24 Del.C. §2716(c).

9.1.2 All license and certificate holders shall notify the Board in writing of each change of business address, residence address, e-mail address, telephone number, business telephone number, or trade name within ten (10) days of said change. The information provided shall be sufficiently descriptive to enable the Board to correspond with and locate the licensee or certificate holder.

9.2 Each professional land survey or license and certificate of authorization shall be renewed biennially. The failure of the Board to notify a licensee or certificate holder of his/her expiration date and subsequent renewals does not, in any way, relieve the licensee or certificate holder of the requirement to renew his/her license or certificate pursuant to the Board's regulations and 24 Del.C. Ch. 27.

9.3 Failure of a licensee or certificate holder to renew his/her license or certificate by the license or certificate expiration date shall cause his/her license or certificate to lapse. A professional land surveyor or certificate of authorization holder whose license or certificate has lapsed may renew his/her license/certificate within six (6) months after the license/certificate expiration date by paying the renewal fee plus a late fee as determined by the Division of Professional Regulation. In addition to paying the fees, a professional land surveyor must also attest to the completion of the required PDHs to the Division of Professional Regulation, 24 Del.C. §2711.

9.4 Late or lapsed license renewals shall be audited for satisfactory completion of the Board's continuing education requirements.

9.5 No professional land surveyor shall practice land surveying in the State of Delaware during the period of time that his/her license is lapsed.

9.6 A professional land surveying corporation or partnership must have a certificate of authorization in order to practice, or offer to practice, land surveying as defined in 24 Del.C. §2722 and cannot perform activities defined in 24 Del.C. §2722 while a certificate is lapsed.

6 DE Reg. 271 (09/01/02)
17 DE Reg. 1098 (05/01/14)

10.0 Continuing Education

10.1 Biennium Requirements.

Effective each biennium, as a condition for renewal of a license for the practice of land surveying, a Professional Land Surveyor shall be required to successfully complete 24 hours of professional development within the preceding biennium. Any licensee who completes in excess of 24 hours of professional development within the preceding biennium may NOT have the excess applied to the requirements for the next biennium.

10.1.1 No more than 8 PDHs of the required 24 PDHs for any renewal period may be obtained by an online course.
10.1.2 Retired Licensees. Licensees 62 years old and over at the time of license renewal who are retired (working less than 20 hours weekly) shall need only twelve (12) PDHs each ensuing biennium to satisfy the professional development requirements outlined herein. A total of four (4) PDHs may be obtained by online courses each biennium.

10.1.3 Multiple State Licensees. Any licensee, who is not a Delaware resident and resides in another state or commonwealth, and is licensed in that state or commonwealth having a comparable continuing education requirement, shall not be required to satisfy these requirements in addition to those of his/her home state, but will satisfy these requirements as a minimum. Any questions regarding compliance with this Section shall be resolved by the Board.

10.2 Sources of Credit. In reviewing and approving applications for PDHs, the Board shall take into consideration:

10.2.1 Program Content: Courses must cover land surveying topics and must directly contribute to accomplishment of the primary purpose of continuing education, which is to help assure that licensees possess the knowledge, skills and competence necessary to function in a manner that protects and serves the public interest. The knowledge or skills taught must enable licensees to better serve surveying clients and the subject matter must be directly related to the land surveying practice. All educational courses and their instructors, both live and online, must be approved by the Board except for those courses sponsored or offered by surveying societies located in any state or United States territory, including the District of Columbia. Courses that are sponsored or offered by surveying societies located in any state or United States territory, including the District of Columbia, will receive automatic approval and do not require Board review and approval.

10.2.2 Instruction: The course must be one that will be conducted by a qualified instructor. Instructors must submit a complete resume with the PDH course approval request.

10.2.3 Examples of acceptable topics include but are not limited to:

ALTA/ACSM land title surveys
GPS (survey related)
GIS (survey related)
Delaware land use laws
Case law
Boundary laws and regulations
Research
Evidence
Boundary determination
Unwritten rights
Conflict resolution; i.e. boundary line agreements
Adverse possession
Highway surveys
Railroad surveys
Easements and rights of way
Geodesy
Highway design/Highway safety
Surveyor in court/Expert testimony
State and international boundaries
Water boundaries
Technical writing related to deed descriptions and survey reports
Mathematics and computer applications of land surveying
Measurement and analysis
Photogrammetry and aerial photo interpretation
Survey standards
Survey instrumentation
Business management and professional development related to the land surveying practice; i.e. surveying contracts, communicating with clients, good business planning and management, quality assurance
Ethics and professionalism
Liability for land surveyors
Drainage design
Sediment and erosion control
First aid/CPR
Subdivision Plans and planning
Land Development Plans and planning
Grading and Grading Development Plans
Condominium Plans
Roadway and Street Design and Planning
Storm Water Drainage Plans
Utility Plans and Easements

10.2.4 Serving as a member of a committee or a board or a commission, which has as its primary duty the preparation or grading of written tests which are given for the purpose of determining the proficiency of an applicant for registration, using accepted test development principles, shall be counted as one (1) PDH per hour of attendance.

10.2.5 Attendance at workshops or seminars, which are directly related to land surveying, shall count as one (1) PDH per actual hour of classroom attendance. Such sessions must be planned in advance, a record must be maintained describing the content and a record of attendance must be kept. This may include society meetings in which educational programs are presented.

10.2.6 The active teaching of land surveying at the college level, within the immediate preceding biennium, shall be counted as eight (8) PDHs per year. No more than sixteen (16) PDHs shall be issued for teaching at the college level in any renewal period. CREDIT WILL NOT BE GIVEN TO FULL TIME EDUCATORS.

10.2.7 Teaching a workshop or seminar, which is directly related to land surveying or professional development, shall be counted as two (2) PDHs per actual hour of teaching time, not to include preparation. No more than eighteen (18) PDHs may be claimed in any 2-year period. CREDIT WILL BE GIVEN FOR ONLY ONE PRESENTATION IN A TWO-YEAR PERIOD.

10.2.8 College level courses directly related to land surveying or professional development directly related to land surveying shall be counted as 40 PDH per credit hour. Ten (10) PDHs will be counted for each CEU (continuing education unit) earned.

10.2.9 Presentation and/or publication of a professional paper will be counted as 10 PDHs. No more than 20 PDHs may be claimed in any biennium renewal.

10.3 Renewal Credit.

10.3.1 Each licensee applying for renewal shall attest to satisfying the continuing education requirements outlined in subsections 10.1 and 10.2 in the period defined in subsection 10.1 of these regulations.

10.3.2 Licensees should retain their PDH files and records for at least five (5) years.

10.4 Pro-Rated Credits for Renewal. A licensee for renewal shall follow the following schedule of reporting PDH credits:

10.4.1 If, at the time of renewal, you have been licensed for less than one year, NO continuing education is required.

10.4.2 If, at the time of renewal, you have been licensed for more than one year, but less than two years, half (12 PDHs) is required. A total of four (4) PDHs may be obtained by online courses.

10.4.3 If, at the time of renewal, you have been licensed for two or more years, the full amount (24 PDHs) is required. A total of eight (8) PDHs may be obtained by online courses.

10.5 Renewal. Any licensee who has submitted an electronic renewal form and has met all other requirements shall be granted renewal.

10.6 Audit. Each biennium, the Division of Professional Regulation shall select from the list of renewed licensees a percentage, determined by the Board, which shall be selected by random method. The Board may also audit
based on complaints or charges against an individual license, relative to compliance with continuing education requirements.

10.7 Documentation and Audit by the Board. When a licensee whose name or number appears on the audit list applies for renewal, the Board shall obtain documentation from the licensee showing detailed accounting of the various PDHs claimed by the licensee. Licensees selected for random audit are required to supplement the attestation with attendance verification. The Board shall attempt to verify the PDHs shown on the documentation provided by the licensee. The Board shall then review the documentation and verification. Upon completion of the review, the Board shall decide whether the licensee’s PDHs meet the requirements of these rules and regulations. The licensee shall sign and seal all verification documentation with a Board approved seal.

10.8 Board Review. The Board shall review all documentation requested of any licensee shown on the audit list. If the Board determines the licensee has met the requirements, the licensee’s certificate of registration shall remain in effect. If the Board initially determines the licensee has not met the requirements, the licensee shall be notified and a hearing may be held pursuant to the Administrative Procedures Act. This hearing will be conducted to determine if there are any extenuating circumstances justifying the apparent noncompliance with these requirements. Unjustified noncompliance of these regulations shall be considered misconduct in the practice of land surveying, pursuant to 24 Del.C. §2712. The minimum penalty for unjustified noncompliance shall be a letter of reprimand and a $250.00 fine.

10.9 Noncompliance – Extenuating Circumstances. A licensee may request an extension and be given up to an additional twelve (12) months to make up all outstanding required PDHs providing he/she can show good cause why he/she was unable to comply with such requirements and provided the statement is received and reviewed by the Board prior to the licensee renewing their license. The licensee must state the reason for such extension along with whatever documentation he/she feels is relevant. The Board shall consider requests such as extensive travel outside the United States, military service, extended illness of the licensee or his/her immediate family, or a death in the immediate family of the licensee. The written request for extension must be received and reviewed by the Board prior to the licensee renewing their license. The Board shall issue an extension when it determines that one or more of these criteria have been met or if circumstances beyond the control of the licensee have rendered it impossible for the licensee to obtain the required PDHs. A licensee who has successfully applied and received Board approval for an extension under this subsection shall make up all outstanding hours of professional development within the extension period approved by the Board.

10.10 Appeal. Any licensee denied renewal pursuant to these rules and regulations may contest such ruling by filing an appeal pursuant to the Administrative Procedures Act.

10.11 A member of the active duty military, National Guard or the military reserve who is assigned to a duty station or deployed shall be deemed to have completed one hour of professional development for each month of active duty service.

6 DE Reg. 271 (09/01/02)
11 DE Reg. 1664 (06/01/08)
16 DE Reg. 436 (10/01/12)
17 DE Reg. 1098 (05/01/14)
18 DE Reg. 651 (02/01/15)
19 DE Reg. 142 (08/01/15)
19 DE Reg. 1103 (06/01/16)
20 DE Reg. 915 (05/01/17)

11.0 Investigations and Designation of Board Member for Contact with Division of Professional Regulation

Upon notice to the Board that a disciplinary investigation of a licensee is underway by the Division of Professional Regulation, the Board shall designate a Board member to assist the investigator. Whenever feasible, the Board member designated for this purpose should not reside in the county where the licensee under investigation resides or maintains his or her dominant area of practice. Section 2706(a)(10).

12.0 Minimum Technical Standards for Licensees

12.1 The Board is required under Sections 2701 and 2112(a)(9) to establish minimum technical standards for licensees. The purpose of these standards is to establish minimum technical criteria to govern the performance of surveys when more stringent specifications are not required by other agencies or by contract. Further, the
purpose is to protect the inhabitants of this state and generally to promote the public welfare. The Board also established minimum standards for Mortgage Survey Plans (MSPs), and other types of work, frequently performed by licensees in portions of the state.

12.2 Procedure and Standards. Whenever a surveyor conducts a boundary survey, or an ALTA/ACSM Land Title Survey, or Subdivision Survey, a plat showing the results shall be prepared. An ALTA/ACSM Land Title Survey shall be titled in accordance to the current published ALTA/ACSM standard. A Subdivision Survey shall be titled as required by the governing regulatory agency. The plat of a boundary survey shall be titled "Boundary Survey Plan"; no other plat title is acceptable. A copy of the survey shall be furnished to the client unless deemed unnecessary by the client. The plat shall conform to the following requirements and shall include the following information:

12.2.1 The plat shall be drawn on any reasonably stable and durable drawing paper, vellum or film of reproducible quality. No plat or map shall have dimensions of less than 8 ½ x 11 inches.

12.2.2 The plat shall indicate the Source of Title, (Deed Record and/or Will Record Number), Hundred, County, State, Tax Parcel Number and, when applicable, the Postal Address of the subject property. The plat shall show the written scale, area and classification of the survey. These classifications (suburban, urban, rural, and marshland) are based upon both the purposes for which the property is being used at the time the survey is performed and any proposed developments, which are disclosed by the client, in writing. This classification must be based on the criteria in subsection 12.4 and the survey must meet the minimum specifications set forth in Attachment A. The scale shall be sufficient to show detail for the appropriate classification.

12.2.3 The horizontal direction of all boundary lines shall be shown in relationship to grid north, magnetic, or in lieu thereof, to true north or to such other established line or lines to which the survey is referenced. The horizontal direction of the boundary lines shall be by direct angles or bearings. A prominent north arrow shall be drawn on every sheet. The description of the bearing reference system shall be stated on the plat. Bearings shall be written in a clockwise direction unless impractical.

12.2.4 All monuments, natural and artificial (man-made), found or set, used in the survey, shall be shown and described on the survey plat. The monuments shall be noted as found or set. All monuments set shall be ferrous metal, or contain ferrous metal, not less than ½ inch in diameter and not less than 18 inches in length, except however, a corner which falls upon solid rock, concrete, or other like materials shall be marked in a permanent manner and clearly identified on the plat. Monuments shall be set at all corners of all surveys as required by these standards, with the exception of meanders such as meanders of streams, tidelands, wetlands, lakes, swamps and prescriptive road rights-of-way. Witness monuments shall be set or referenced whenever a corner monument cannot be set or is likely to be disturbed. Such witness monument shall be set as close as practical to the true corner. If only one (1) witness monument is set, it must be set on the actual boundary line or prolongation thereof. Otherwise, at least two (2) witness monuments shall be set and so noted on the plat of the survey. Monuments shall be identified, where possible, with a durable marker bearing the firm name or the surveyor's registration number and/or name.

12.2.5 The plat of a metes and boundary survey must clearly describe the commencing point and label the point of beginning for the survey.

12.2.6 Notable discrepancies between the survey and the recorded description shall be noted. The source of title used in making the survey shall be indicated. When an inconsistency is found, including a gap or overlap, excess or deficiency, erroneously located boundary lines or monuments, the nature of the inconsistency shall be indicated on the drawing.

12.2.7 In the judgment of the surveyor, the description and location of any physical evidence found along a boundary line, including but not limited to fences, walls, buildings or monuments, shall be shown on the drawing.

12.2.8 The horizontal length (distance) and direction (bearing) of each line as determined in an actual survey process shall be shown on the drawing and indicated in a clockwise direction unless impractical.

12.2.9 The radius, arc length, chord bearing and chord distance of all circular curves, shall be shown.

12.2.10 Information used by the surveyor in the property description shall be clearly shown on the plat, including but not limited to, the point of beginning, course bearing, distance, monuments, etc.

12.2.11 The lot and block or tract number or other recorded subdivision designation, of the subject property and adjoining properties shall be shown. If the adjoining properties are not within a recorded subdivision, then the name and deed record of all adjoining owners shall be shown.
12.2.12 Recorded public and private rights-of-way or easements which are discovered during the title search performed by others and supplied to the surveyor or graphically shown on the recorded plat, which includes the property, or which are known or observed adjoining or crossing the land surveyed, shall be shown. When no recorded rights-of-way or easements are provided, it shall be so noted on the plan.

12.2.13 Location of all permanent improvements pertinent to the survey, referenced radially and perpendicular to the nearest boundary, shall be shown.

12.2.14 Visible or suspected encroachments onto or from adjoining property or abutting streets, with the extent of such encroachments, shall be shown.

12.2.15 A plat or survey shall clearly bear the Firm Name and licensee’s name, license number, title, "Professional Land Surveyor", contact address, and date of survey and original signature and board-approved seal of the licensed surveyor in responsible charge. This signature and seal is certification that the survey meets minimum requirements of the Standards for Land Surveyors as adopted by the Delaware Board.

12.2.15.1 A plat or survey shall include a statement. The statement shall be in the following form for the purpose of complying with this regulation:

"I, [name] registered as a Professional Land Surveyor in the State of Delaware, hereby state that the information shown on this plan has been prepared under my supervision and meets the standards of practice as established by the State of Delaware Board of Professional Land Surveyors. Any changes to the property conditions, improvements, boundary or property corners after the date shown hereon shall necessitate a new review and certification for any official or legal use.

[name], DE PLS ________                                              Date:

12.2.16 A written property description shall accompany the preparation of a boundary survey, ALTA/ACSM Land Title Survey, and Subdivision Survey. A written property description is not required when there are no changes to the property description used as a basis for said surveys. When preparing a property description in conjunction with a Mortgage Survey Plan, said description shall be based upon and refer to the record plat and not the Mortgage Survey Plan. The following information shown on the plat must be included in a written description:

12.2.16.1 The commencing point and point of beginning.
12.2.16.2 Sufficient caption to connect the plat and description.
12.2.16.3 Length and direction of all lines in a clockwise direction unless impractical.
12.2.16.4 Curve information as described in subsection 12.2.9.
12.2.16.5 Type of monuments noted as found or set.
12.2.16.6 The area of the parcel.
12.2.16.7 Adjoining owners, subdivision name, etc.

12.2.17 For a Major Subdivision Survey, the boundary corners of the “Parent” property that is the subject of the subdivision shall be set and/or identified in accordance to subsection 12.2.4. For a Minor Subdivision Survey, a minimum of two boundary corners of the property that is the subject of the subdivision shall be set and/or identified and their interconnection duly noted. Additionally, for a Minor Subdivision Survey, the connection between said boundary corners and the boundary of the “carved-out” property shall be noted; and, the boundary corners of said “carved-out” property shall be set and/or identified in accordance with subsection 12.2.4. For an ALTA/ACSM Land Title Survey, all boundary corners of the subject property shall be set and/or identified in accordance to subsection 12.2.4.

12.3 Standards for Horizontal Control.

12.3.1 Definitions for specific types of horizontal control surveys, along with standards and procedures, may be found in National Geodetic Survey (NGS) or successor publications. All geodetic surveys, including determination and publication of horizontal and vertical values utilizing Global Positioning Systems, Ground Control Systems or any other system which relates to the practice and profession of Land Surveying, shall be performed under the direct control and personal supervision of a licensed Professional Land Surveyor licensed in the State of Delaware.

12.3.2 Control Surveys that are used to determine boundary lines, including developing coordinates for existing boundary corners, shall meet the Standards contained herein.

12.3.3 Land Information Systems/Geographic Information Systems (LIS/GIS) maps should be built on a foundation of coordinates obtained by an accurate survey. Creation of LIS/GIS maps and services should
include a Professional Land Surveyor licensed in the State of Delaware for coordination and input of their knowledge in these fields.

12.4 Classification of Surveys. (See Attachment A)

12.4.1 Urban Surveys - Surveys of land lying within or adjoining a city or town. This would also include the surveys of commercial and industrial properties, condominiums, townhouses, apartments and other high-density developments regardless of geographic location.

12.4.2 Suburban Surveys - Surveys of land lying outside urban areas. This land is used almost exclusively for single family residential use or residential subdivisions.

12.4.3 Rural Surveys - Surveys of land such as farms and other undeveloped land outside the suburban areas which may have a potential for future development.

12.4.4 Marshland Surveys - Surveys of land which normally lie in remote areas with difficult terrain and usually have limited potential for development and cannot be classified as urban, suburban or rural surveys. This includes, but is not limited to, surveys of farmlands and rural areas.

12.5 ALTA/ACSM Land Title Survey. The current published standard as amended from time to time.

12.6 Mortgage Survey Plan (MSP)

12.6.1 Purpose. The purpose of an MSP is to locate, describe and represent the position of buildings and other pertinent visible improvements affecting the property being surveyed in connection with a conveyance or a mortgage.

12.6.2 Product. The results of the MSP shall be stated on a plat showing the property surveyed and the location of the buildings and other pertinent visible improvements affecting the surveyed property. The plat shall be titled "Mortgage Survey Plan"; no other plan title is acceptable.

12.7 The Waiver by the Ultimate User and Disclosures.

12.7.1 The surveyor shall not prepare a MSP pursuant to this regulation until the surveyor receives a signed waiver more particularly described below.

12.7.2 For purposes of this section, "ultimate user" means the contract purchaser of the property. If no purchaser exists, the ultimate user is the owner of the property. The waiver shall be sufficient if signed by one ultimate user, whether or not there are multiple ultimate users. The waiver shall at a minimum contain:

12.7.2.1 An approval by the ultimate user to perform a MSP and to waive the right to have corner markers set; and

12.7.2.2 An explanation of the impact of signing the waiver advising the ultimate user of the possible need for a future survey as a result of physical improvements of the property and the potential inability of the ultimate user to identify the boundary of the surveyed property.

12.7.2.3 The waiver shall be in the following form for the purpose of complying with this regulation:

"Waiver Not to Set Corner Markers and Approval to Perform a MSP Survey"

To: ________________________________
(Name, address, and telephone number of Land Surveyor)

From: ________________________________
(Name, address, and telephone number of Ultimate User)

Re: ________________________________
(Property (Appropriate Identifier; i.e. address, tax parcel number)

In connection with the purchase or survey of the property located at __________________________, I have waived having all the corner markers set and have requested the preparation of a Mortgage Survey Plan (MSP).

I have been made aware that a Mortgage Survey Plan (MSP) is not a boundary survey and does not identify property boundary lines. I am also aware that there may be a cost difference between the MSO and boundary survey. Additionally, I have been advised of the impact of signing the waiver regarding the possible need for a future survey as a result of physical improvements of the property and my inability to identify the boundary of the surveyed property. Furthermore, I am aware that the inability to identify the boundary of the property may result in a boundary dispute with an adjoining property owner and/or property improvements not accurately situated on my property.

_________________________ (Signature of Ultimate User)
_________________________ (Signature of Witness)
I hereby certify that by virtue of the signature of the ultimate user on this waiver that the ultimate user is aware of the potential impact of not having corner markers set, and that I have prepared a Mortgage Survey Plan (MSP) in compliance with Section 12.0 Minimum Technical Standards for Licensees as set forth by the Delaware Board of Professional Land Surveyors.

_______________________________
Delaware Professional Land Surveyor
License Number: __________
Date: ________________

12.7.2.4 The following notation shall be noted on a MSP when a written waiver is obtained: "In accordance to the Delaware Board of Professional Land Surveyors' Regulation 12.7, a waiver not to set corner markers has been obtained".

12.7.2.5 The licensee shall maintain the signed corner marker waiver or a retrievable scanned copy of said waiver for a minimum of three years from date of ultimate user's signature.

12.7.2.6 The licensee shall submit to the Board documentation of a waiver of a specified property upon the Board’s request in connection with a complaint involving said property.

12.7.2.7 Failure to comply with the provision of this section shall be deemed professional misconduct subject to an appropriate penalty.

12.8 Minimum Procedures for Performing a MSP. If the ultimate user waives setting corner markers and agrees to the preparation of an MSP, the surveyor shall perform at least the following procedures:

12.8.1 Examine appropriate documents of record for the subject parcel and review the most current tax assessment map for inconsistencies with said documents. The surveyor is required to check for mathematical closure of said documents. If said documents do not close mathematically, the surveyor will determine, based upon his professional judgement, if a boundary survey is warranted.

12.8.2 Take sufficient on-site measurements to enable the surveyor to perform the tasks called for by this regulation with regard to the:

12.8.2.1 Location relative to the property lines being surveyed of buildings and other pertinent improvements;

12.8.2.2 Location of possible encroachments relative to the property lines being surveyed reasonably determined by visual inspection;

12.8.2.3 Easements; and

12.8.2.4 Rights-of-way.

12.8.3 If the ultimate user has approved an MSP, then the following elements shall be shown:

12.8.3.1 Significant buildings, structures and other pertinent improvements, and their relationship to the property lines referenced radially and/or perpendicular to the nearest boundary, based on the field measurements taken by the surveyor, and any other boundary evidence considered by the surveyor;

12.8.3.2 Statement with regard to the Classification of Survey; (REFER TO ATTACHMENT A)

12.8.3.3 Possible encroachments on the subject property and from the subject property onto adjoining property located relative to the property lines being surveyed to the extent reasonably determined by a visual inspection of the properties; and

12.8.3.4 Minimum setback lines, as shown on plats,

12.8.3.5 A minimum of two described boundary control points, either found or set, and their relationship denoted by appropriate courses and distances to each other and the subject property.

12.8.3.6 Easements or rights-of-way as shown on the aforementioned documents of record for subject property.

12.8.4 If, in connection with the preparation of an MSP, a surveyor finds evidence to warrant, in the surveyor's professional opinion, the performance of a boundary survey, the surveyor shall so notify, in writing, the ultimate user or the ultimate user's representative.

12.8.5 If the ultimate user has approved the preparation of an MSP, then:

12.8.5.1 The MSP prepared by the surveyor shall prominently display, at a minimum, advice to the effect that:
12.8.5.1.1 The MSP is of benefit to a ultimate user only insofar as it is required by a lender, a title insurance company or its agent in connection with the contemplated transfer, financing, or refinancing of subject property; and

12.8.5.1.2 The MSP is not to be relied upon for future improvements.

12.9 Plats.

12.9.1 The original plat of an MSP shall be a reproducible drawing at a scale which clearly shows the results of the field work, computations, research and record information as compiled and checked and shall bear the title "Mortgage Survey Plan".

12.9.2 The plat shall be prepared in accordance with the following procedures:

12.9.2.1 A reasonably stable and durable drawing paper, linen or film is considered a suitable material;

12.9.2.2 Plats may not be smaller than 8 ½ x 11 inches;

12.9.2.3 The plat shall show the following:

12.9.2.3.1 Caption or title and address (if applicable) and subdivision lot number of the property (if applicable),

12.9.2.3.2 Scale,

12.9.2.3.3 Date,

12.9.2.3.4 Name and address of the firm or surveyor; and

12.9.2.3.5 Original signature and board-approved seal of the licensed surveyor in responsible charge,

12.9.2.3.6 Ultimate User’s name,

12.9.2.3.7 Statement with regard to the Classification of Survey; (REFER TO ATTACHMENT A)

12.10 Maintenance of Records.

12.10.1 The surveyor shall make a reasonable effort to maintain records, including names or initials of all personnel, date of performance, reference to field data, such as book number, loose leaf pages and other relevant data.

12.11 Local Standards.

12.11.1 All work shall be performed according to the minimum standards for the community in which the service is provided, as long as said standards meet or exceed the standards herein. Current local standards shall take precedence over the MSP as to the manner in which mortgage or deed-related surveys or plans are prepared and as to the manner of field work and staking related to these surveys or plans, if those standards require more detailed or more accurate work to meet those local standards.

12.12 Based on current information, the MSP shall be accepted as a minimum standard only in New Castle County when requested by the ultimate user as an option to a boundary survey. In Kent and Sussex counties, MSP’s shall not be considered to meet the minimum local standards for the work required for mortgage or deed-related surveys or plans. For mortgage and deed-related surveys or plans in Kent County and Sussex County, the minimum requirement is a Boundary Survey Plan prepared in compliance with Section 12.0 which includes proper monument placement.

12.12.1 Electronically Transmitted Documents. Documents including drawings, specifications and reports, that are transmitted electronically to a client or a governmental agency shall have the computer-generated seal removed from the original file, unless signed with a digital signature as defined in subsection 12.12.2. After removal of the seal the electronic media shall have the following inserted in lieu of the signature and date: This document originally issued and sealed by (Name of sealer), containing the original seal, signature and date of the licensee may be duplicated by photocop y or electronic scanning processes and distributed either in hardcopy or electronic medium. The scanned digital files of properly certified documents are not subject to the requirements of this subsection. The electronic submission of CAD, vector or other files subject to easy editing are subject to the requirements of this subsection. Easy editing is based on the file consisting of separate elements that can be individually modified or deleted.

12.12.2 Documents to be electronically transmitted that are signed using a digital signature, shall contain the authentication procedure in a secure mode and a list of the hardware, software and parameters used to prepare the document(s). Secure mode means that the authentication procedure has protective measures to prevent alteration or overriding of the authentication procedure. The term "digital signature" shall be an electronic authentication process that is attached to or logically associated with an electronic document. The digital signature shall be:

12.12.2.1 Unique to the licensee using it;
12.12.2.2 Capable of verification;
12.12.2.3 Under the sole control of the licensee; and
12.12.2.4 Linked to a document in such a manner that the digital signature is invalidated if any data in the
document is changed.

12.12.3 Electronic formats must be approved by the board and must meet all criteria set forth in subsections 12.2.1
and 12.2.2.

7 DE Reg. 918 (01/01/04)
11 DE Reg. 1664 (06/01/08)
14 DE Reg. 675 (01/01/11)
15 DE Reg. 1359 (03/01/12)
21 DE Reg. 502 (12/01/17)

13.0 Professional Conduct - Code of Ethics

13.1 Foreword. Honesty, justice and courtesy form a moral philosophy which, associated with mutual interest
among men and women, constitutes the foundation of ethics. The surveyor should recognize such a standard,
not in a passive observance, but as a set of dynamic principles guiding his/her conduct and way of life. It is his/
her duty to practice his/her profession according to this Code of Ethics.

As the keystone of professional conduct is integrity, the surveyor will discharge his/her duties with fidelity to the
public, his/her employers and clients, and with fairness and impartiality to all. It is his/her duty to interest his/
herself in the public welfare, and to be ready to apply his/her special knowledge for the benefit of mankind. He/
she should uphold the honor and dignity of his/her profession and avoid association with any enterprise of
questionable character. In his/her dealings with fellow surveyors he/she should be fair and tolerant.

13.2 Professional Life.

13.2.1 The surveyor will cooperate in extending the effectiveness of the surveying profession by interchanging
information and experience with other surveyors and students and by contributing to the work of surveying
societies and associations, schools and the scientific and surveying press.

13.2.2 It shall be considered unprofessional and inconsistent with honorable and dignified bearing for any
surveyor to advertise his/her work in a false or deceptive manner that may mislead the public.

13.2.3 The surveyor will avoid all conduct or practice likely to discredit or do injury to the dignity and honor of his/
hers profession.

13.2.4 Because superior and distinct knowledge of surveying is essential to the profession, it is imperative for the
surveyor to continue his/her education.

13.2.5 The surveyor shall not permit the use of his/her professional seal on any work over which he/she was not
in responsible charge and/or direct supervision.

13.3 Relations With The Public.

13.3.1 The surveyor will endeavor to extend public knowledge of surveying and will discourage the spreading of
untrue, unfair and exaggerated statements regarding surveying.

13.3.2 He/she will have due regard for the safety of life and health of public and employees who may be affected
by the work for which he/she is responsible.

13.3.3 He/she will express an opinion only when it is founded on adequate knowledge and honest conviction
while he/she is serving as a witness before a court, commission or other tribunal.

13.4 Relations With Clients and Employers.

13.4.1 The surveyor will act in fairness and in a professional manner toward each client or employer and produce
a quality survey regardless of price.

13.4.2 He/she will engage, or advise his/her client or employer to engage, and he/she will cooperate with, other
experts and specialists whenever the client's or employer's interests are best served by such service.

13.4.3 He/she will disclose no information concerning the business affairs or technical processes and data of
clients or employers without their consent.

13.4.4 He/she will not undertake work which he/she believes will not be successful without first advising his/her
client of his/her opinion.

13.4.5 He/she will promptly disclose to his/her client or employer any interest in a business which may compete
with or affect the business of his/her client or employer. He/she will not allow an interest in any business to
affect his/her decision regarding surveying work for which he/she is employed, or which he/she may be called upon to perform.

13.4.6 An employed surveyor will not solicit or accept other employment to the detriment of his/her regular work or the interests of his/her employer.

13.5 Relations With Surveyors.

13.5.1 The surveyor will see that those licensed to survey are properly qualified by character, ability and training and those who prove unworthy of their privileges are disciplined.

13.5.2 He/she will uphold the principle of appropriate and adequate compensation for those engaged in surveying work, including those in subordinate capacities, as being in the public interest and maintaining the standards of the profession.

13.5.3 He/she will endeavor to provide opportunity for the professional development and advancement of surveyors in his/her employ.

13.5.4 He/she will not directly or indirectly injure the professional reputation, prospects or practice of another surveyor. However, if he/she discovers an error or disagrees with the work of another surveyor, it is the duty of that surveyor to inform the other surveyor of such fact.

13.5.5 He/she will not review the work of another surveyor for the same client, except with the knowledge or consent of such surveyor or unless the connection of such surveyor with the work has been terminated.

13.5.6 He/she will not compete with another surveyor on the basis of charges by reducing his/her normal fees after having been informed of the charges named by the other, or undertake any work at a price that will not permit a satisfactory professional performance. Any offer of professional service should be on the basis of his/her regular fees.

13.5.7 He/she will not use the advantages of a salaried position (public or private) to compete unfairly with another surveyor, or use the advantages of instruments and office facilities (public or private) to compete with other surveyors without charging for such instruments and facilities at current rates.

13.5.8 He/she will not attempt to practice in any field of surveying in which he/she is not proficient. He/she should call in special consulting services to supplement his/her own experience and that of his/her organization on problems outside of their usual field.

11 DE Reg. 1664 (06/01/08)

14.0 Criminal History Reviews of Licensee Applicants

Part of the licensure process for applicants under 24 Del.C. Ch. 27 includes a requirement that the applicant not have a criminal conviction record, nor pending criminal charges relating to an offense, the circumstances of which substantially relate to the practice of land surveying. The Board shall review the information provided on the Application Form relating to this issue to determine if the applicant's criminal history record is substantially related to the practice of land surveying. Section 2708(a)(6).

15.0 Reciprocity Eligibility

15.1 24 Del.C. §2709 requires the Board to grant reciprocal licenses to applicants presenting proof of current licensure in good standing in another state, the District of Columbia, or territory of the United States, whose standards for licensure are "substantially similar" to Delaware standards.

15.2 All states that are contiguous to Delaware are considered to have "substantially similar" standards to the Delaware standards. In determining whether jurisdiction's standards are substantially similar, the Board will consider the evidence presented by the applicant intended to show this similarity.

16 DE Reg. 436 (10/01/12)

16.0 Professional Seals, Rubber Stamps and Signatures

16.1 A raised seal shall be used wherever possible.

16.2 When a raised seal cannot be used, a rubber seal may be used, but only with red ink so that the lettering will stand out.

16.3 The signature must be originally hand written.

16.4 The seal to be used by a Delaware licensee shall conform to the above regulation and have two concentric circles. The inner circle shall contain only the words "REGISTERED," "NO.," and "DELAWARE." The area
between the two circles shall contain, at the bottom, the words "PROFESSIONAL LAND SURVEYOR" reading counterclockwise and at the top, the name of the licensee as written below, reading clockwise.

16.5 The seal acceptable to the Board is the one recognized in the trade as the No. 1 official pocket size, which has an inner circle 1” in diameter and an outer circle 1 ½” in diameter. A sample is below. Replace JOHN DOE AND No. 123 with your name and number.

16.6 All new licensees shall provide to the Board a copy of both the raised and rubber seal within 30 days of issuance of their license.

6 DE Reg. 271 (09/01/02)
11 DE Reg. 1664 (06/01/08)
17 DE Reg. 1098 (05/01/14)

17.0 Crimes substantially related to practice of land surveyors

17.1 Conviction of any of the following crimes, or of the attempt to commit or of a conspiracy to commit or conceal or of solicitation to commit the following crimes, is deemed to be a crime substantially related to the practice of land surveyor in the State of Delaware without regard to the place of conviction:

17.1.1 Reckless endangering in the first degree. 11 Del.C. §604
17.1.2 Abuse of a pregnant female in the second degree. 11 Del.C. §605
17.1.3 Abuse of a pregnant female in the first degree. 11 Del.C. §606
17.1.4 Assault in the second degree. 11 Del.C. §612
17.1.5 Assault in the first degree. 11 Del.C. §613
17.1.6 Assault by abuse or neglect. 11 Del.C. §1103B
17.1.7 Terroristic threatening. 11 Del.C. §621(b)
17.1.8 Unlawful administering controlled substance or counterfeit substance or narcotic drugs. 11 Del.C. §626
17.1.9 Vehicular assault in the first degree. 11 Del.C. §629
17.1.10 Vehicular homicide in the second degree. 11 Del.C. §630
17.1.11 Vehicular homicide in the first degree. 11 Del.C. §630A
17.1.12 Criminally negligent homicide. 11 Del.C. §631
17.1.13 Manslaughter. 11 Del.C. §632
17.1.14 Murder by abuse or neglect in the second degree. 11 Del.C. §633
17.1.15 Murder by abuse or neglect in the first degree. 11 Del.C. §634
17.1.16 Murder in the second degree. 11 Del.C. §635
17.1.17 Murder in the first degree. 11 Del.C. §636
17.1.18 Unlawful sexual contact in the second degree. 11 Del.C. §768
17.1.19 Unlawful sexual contact in the first degree. 11 Del.C. §769
17.1.20 Rape in the fourth degree. 11 Del.C. §770
17.1.21 Rape in the third degree. 11 Del.C. §771
17.1.22 Rape in the second degree. 11 Del.C. §772
17.1.23 Rape in the first degree. 11 Del.C. §773
17.1.24 Sexual extortion. 11 Del.C. §774
17.1.25 Continuous sexual abuse of a child. 11 Del.C. §776
17.1.26 Female genital mutilation. 11 Del.C. §780
17.1.27 Unlawful imprisonment in the first degree. 11 Del.C. §782
17.1.28 Kidnapping in the second degree. 11 Del.C. §783
17.1.29 Kidnapping in the first degree. 11 Del.C. §783A
17.1.30 Arson in the first degree. 11 Del.C. §803
17.1.31 Burglary in the third degree. 11 Del.C. §824
17.1.32 Burglary in the second degree. 11 Del.C. §825
17.1.33 Burglary in the first degree. 11 Del.C. §826
17.1.34 Possession of burglar’s tools or instruments facilitating theft. 11 Del.C. §828
17.1.35 Robbery in the second degree. 11 Del.C. §831
17.1.36 Robbery in the first degree. 11 Del.C. §832
17.1.37 Carjacking in the second degree. 11 Del.C. §835
17.1.38 Carjacking in the first degree. 11 Del.C. §836
17.1.39 Shoplifting (felony). 11 Del.C. §840
17.1.40 Theft (felony). 11 Del.C. §841
17.1.41 Theft of Services. 11 Del.C. §845
17.1.42 Extortion. 11 Del.C. §846
17.1.43 Misapportion of property (felony). 11 Del.C. §848
17.1.44 Theft of rented property (felony). 11 Del.C. §849
17.1.45 Receiving stolen property (felony). 11 Del.C. §851
17.1.46 Identity theft. 11 Del.C. §854
17.1.47 Forgery (felony). 11 Del.C. §861
17.1.48 Tampering with public records in the first degree. 11 Del.C. §876
17.1.49 Issuing a false certificate. 11 Del.C. §878
17.1.50 Issuing a bad check (felony). 11 Del.C. §900
17.1.51 Unlawfully concealing a will. 11 Del.C. §908
17.1.52 Fraudulent conveyance of public lands. 11 Del.C. §911
17.1.53 Fraudulent receipt of public lands. 11 Del.C. §912
17.1.54 Insurance fraud. 11 Del.C. §913
17.1.55 Health care fraud. 11 Del.C. §913A
17.1.56 New home construction fraud (felony). 11 Del.C. §917
17.1.57 Unauthorized access. 11 Del.C. §932
17.1.58 Theft of computer services. 11 Del.C. §933
17.1.59 Interruption of computer services. 11 Del.C. §934
17.1.60 Misuse of computer system information. 11 Del.C. §935
17.1.61 Destruction of computer equipment. 11 Del.C. §936
17.1.62 Dealing in children. 11 Del.C. §1100A
17.1.63 Abandonment of a child. 11 Del.C. §1101
17.1.64 Endangering the welfare of a child. 11 Del.C. §1102
17.1.65 Sexual exploitation of a child. 11 Del.C. §1108
17.1.66 Unlawful dealing in child pornography. 11 Del.C. §1109
17.1.67 Possession of child pornography. 11 Del.C. §1111
17.1.68 Sexual solicitation of a child. 11 Del.C. §1112A
17.1.69 Bribery. 11 Del.C. §1201
17.1.70 Receiving a bribe. 11 Del.C. §1203
17.1.71 Perjury in the second degree. 11 Del.C. §1222
17.1.72 Perjury in the first degree. 11 Del.C. §1223
17.1.73 Threats to public officials. 11 Del.C. §1240
17.1.74 Assault in a detention facility. 11 Del.C. §1254
17.1.75 Bribing a witness. 11 Del.C. §1261
17.1.76 Bribe receiving by a witness. 11 Del.C. §1262
17.1.77 Tampering with a witness. 11 Del.C. §1263
17.1.78 Interfering with child witness. 11 Del.C. §1263A
17.1.79 Bribing a juror. 11 Del.C. §1264
17.1.80 Bribe receiving by a juror. 11 Del.C. §1265
17.1.81 Felony hate crimes. 11 Del.C. §1304
17.1.82 Stalking. 11 Del.C. §1312
17.1.83 Adulteration. 11 Del.C. §1339
17.1.84 Carrying a concealed deadly weapon. 11 Del.C. §1442
17.1.85 Possessing a destructive weapon. 11 Del.C. §1444
17.1.86 Felony possession of a deadly weapon during the commission of a felony. 11 Del.C. §1447
17.1.87 Possession of a firearm during commission of a felony. 11 Del.C. §1447A
17.1.88 Possession and purchase of deadly weapons by persons prohibited. 11 Del.C. §1448
17.1.89 Theft of a firearm. 11 Del.C. §1451
17.1.90 Engaging in a firearms transaction on behalf of another. 11 Del.C. §1455
17.1.91 Removing a firearm from the possession of a law enforcement officer. 11 Del.C. §1458
17.1.92 Act of intimidation. 11 Del.C. §3532
17.1.93 Aggravated act of intimidation. 11 Del.C. §3533
17.1.94 Alteration, theft or destruction of will. 12 Del.C. §210
17.1.95 Receiving or transferring stolen vehicle. 21 Del.C. §6704

17.2 Crimes substantially related to the practice of professional land surveyors shall be deemed to include any crimes under any federal law, state law, or valid town, city or county ordinance, that are substantially similar to the crimes identified in this rule.

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**ATTACHMENT A**

<table>
<thead>
<tr>
<th>CONDITION</th>
<th>MARSH</th>
<th>RURAL</th>
<th>SUBURBAN</th>
<th>URBAN</th>
<th>REMARKS AND FORMULA</th>
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</thead>
<tbody>
<tr>
<td>Unadjusted closure (minimum)</td>
<td>1: 5,000</td>
<td>1:7,500</td>
<td>1:10,000</td>
<td>1:15,000</td>
<td>Loop or between monuments</td>
</tr>
<tr>
<td>Angular closure (minimum)</td>
<td>30° N</td>
<td>20° N</td>
<td>15° N</td>
<td>10° N</td>
<td>N = number of angles in traverse</td>
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<td>Accuracy of distances</td>
<td>0.10 ft + 200 ppm</td>
<td>0.07 ft + 150 ppm</td>
<td>0.05 ft + 100 ppm</td>
<td>0.03 ft + 50 ppm</td>
<td>100 ppm = 1:10,000</td>
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<td>Elevations for boundaries controlled by tides, contours, etc. accurate to:</td>
<td>+ or -.50 ft</td>
<td>+ or -.50 ft</td>
<td>+ or -.50 ft</td>
<td>+ or -.50 ft</td>
<td>Based on NGVD (1929) or NAVD 88</td>
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<td>Location of subject property or pertinent improvements, structures, paving, etc.</td>
<td>+ or - 2 ft</td>
<td>+ or - 1 ft</td>
<td>+ or - 0.1 ft</td>
<td>+ or -.10 ft</td>
<td>Any shown improvement within 75 feet of property must use these tolerances</td>
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<td>Positional error in map plotting not to exceed: (applies to original map only)</td>
<td>1/10</td>
<td>1/20</td>
<td>1/20</td>
<td>1/40</td>
<td>National Map accuracy calls for 1/50th inch</td>
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<td>Area</td>
<td>0.1 acre</td>
<td>0.1 acre</td>
<td>0.001 acre</td>
<td>+ or - nearest square foot = less than 1 acre; 0.0001 = greater than 1 acre</td>
<td>Areas involving water boundary, Left to discretion of practitioner</td>
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