



February 6, 2012



Ms. Pamela J. Edwards
Executive Director
Division of Occupational and Professional Licensing
Maryland Department of Labor, Licensing & Regulation
500 North Calvert Street, 3rd Floor
Baltimore, MD 21202-3651

Dear Ms. Edwards:

Thank you for your letter of 16 November 2011 regarding the qualification of landscape architects and professional land surveyors to certify erosion control plans. The information you provided was very helpful in addressing our concerns. It also gave us information with which to continue dialogue with the respective licensing boards. The additional information and documents we received help clarify the extent of training required, the specific licensure requirements and how the areas of overlapping practice have evolved among the disciplines

Having reviewed the additional information provided, the Severn River Commission withdraws its previous reservations regarding certification of silt and erosion control plans by professional land surveyors and licensed landscape architects.

Thank you for your cooperation and support.

Sincerely,

Lina Vlavianos, Chair
Severn River Commission

cc: Alan Friedman, County Executive's Office

November 16, 2011

Lina Vlavianos, Chair
Severn River Commission
P. O. Box 6675, Heritage Complex
Annapolis, MD 21401

Dear Ms. Vlavianos:

Thank you for your letter of October 24th and for the opportunity to appear before the Commission on August 4, 2011 to discuss the qualifications of landscape architects and professional land surveyors to perform storm water management, road grade, and erosion control plans.

As a result of that meeting, I have attached the pertinent education, experience and examination requirements for licensure as a professional engineer, professional land surveyor, and landscape architect in Maryland. Please note that for professional land surveyors and landscape architects there are identifiable storm water and road grade related components to their qualifications. Each of them takes an exam module on the subject matter.

I hope this information is helpful. If we can offer any further assistance, please do not hesitate to contact me.

Very truly yours,


Pamela J. Edwards
Executive Director

Attachments

LANDSCAPE ARCHITECT LICENSURE

A. Qualifying for Licensure

An applicant for a license shall qualify by meeting the educational, experience, and examination requirements set forth in one of the four options listed below:

1. Approved Curriculum Option

- Graduation from a college or school of landscape architecture that holds accredited status from the national Landscape Architectural Accreditation Board (LAAB);
- At least two years of work experience in landscape architecture under the responsible charge of a licensed landscape architect or other authorized individual; and
- Has passed all parts of the Landscape Architectural Registration Exam.

2. Design-related curriculum option.

- Graduation upon completion of at least a 4-year curriculum in a design-related discipline from a college or university that is accredited by, or is a constituent unit of an institution accredited by, the Middle States Association of Colleges and Schools or the equivalent regional accrediting association of other regional areas;
- At least four years of work experience in landscape architecture under the responsible charge of a licensed landscape architect or other authorized individual; and
- Has passed all parts of the Landscape Architectural Registration Exam.

3. Non-design related curriculum option

- Graduation upon completion of at least a 4-year curriculum in a nondesign-related discipline from a college or university that is accredited by, or is a constituent unit of an institution accredited by, the Middle States Association of Colleges and Schools or the equivalent regional accrediting association of other regional areas;
- At least six years of practical work experience in landscape architecture under the responsible charge of a licensed landscape architect or other authorized individual; and
- Has passed all parts of the Landscape Architectural Registration Exam.

4. Nonacademic Option

- Graduation from high school or the equivalent;
- At least eight years of practical work experience in landscape architecture under the responsible charge of a licensed landscape architect or other authorized individual; and
- Has passed all parts of the Landscape Architectural Registration Exam.
- For each full year of study at a college or school of landscape architecture that meets the criteria in Option 1, the Board may award one year towards the work experience requirement.

B. Education.

LAAB accredited degree -The LAAB is the accrediting organization for landscape architectural programs. As such, the LAAB develops standards to objectively evaluate landscape architectural programs and judges whether a school's landscape architectural program is in compliance with the accreditation standards.

The LAAB is comprised of landscape architecture practitioners and academicians, representatives from landscape architecture collateral organizations and public representatives. The collateral organizations are the American Society of Landscape Architects (ASLA), Council of Landscape Architectural Registration Boards (CLARB) and Council of Educators in Landscape Architecture (CELA).

Design-related discipline - This option would include degrees such as those in engineering, interior design, architecture.

Non-design related discipline - This option would include degrees such as those in any other area such as history, english, etc.

C. Experience.

Work experience must conform to the definition of "practice landscape architecture" as set forth in Business Occupations and Professions Article, Title 9, Section 9-101(j):

(1) "Practice landscape architecture" means:

(i) to provide any service or creative work in the analysis or design of land and natural resources that requires training and experience in the application of the biological, physical, mathematical, and social sciences; and

(ii) to perform design coordination of a project or portion of a project provided that the licensed landscape architect holds a current license issued by the Board and has adequate education and experience in, and understanding of, the project or portion of the project being coordinated.

(2) "Practice landscape architecture" includes:

(i) consultation, research, analysis, assessment, selection and allocation of land and natural resources;

(ii) development of graphic, written, digital, and other appropriate criteria to govern the planning and design of land development and construction programs, including:

1. preparation, review, and analysis of master plans, site plans, and land development plans;

2. reconnaissance, planning, design, and preparation of construction documents;

3. construction, observation, administration, and project management;

4. preservation, restoration, conservation, reclamation, rehabilitation, and management of land and natural resources;

5. preparation of feasibility and site selection studies, environmental studies, and cost estimate reports; and

6. **design and analysis of grading and drainage, irrigation, erosion and sediment control systems, and pedestrian and vehicular circulation systems; and**

(iii) in conjunction with site plan preparation, the performance of the following:

1. **determining a grade;**

2. **determining drainage; and**

3. **preparing and designing stormwater drainage systems**

provided that the preparation and design:

A. are in accordance with design manuals, details, and standards accepted by the State or local authorities; and

B. do not require a hydraulic or structural design of system components.

D. Examinations.

The Landscape Architecture Registration Examination (L.A.R.E.) is prepared and scored by the Council of Landscape Architectural Registration Boards (CLARB). The L.A.R.E. is designed to determine whether applicants for landscape architectural licensure possess sufficient knowledge, skills and abilities to provide landscape architectural services without endangering the health, safety and welfare of the public. The content of the L.A.R.E. is based on a job analysis survey of the profession of landscape architecture.

The L.A.R.E. consists of five interdependent sections including three multiple-choice sections and two graphic response sections. All five sections must be passed in order to be granted a license. The sections are:

Section A - Project and Construction Administration

Section B - Inventory, Analysis and Program Development

Section C - Site Design

Section D - Design and Construction Documentation

Section E - Grading, Drainage and Stormwater Management

PROFESSIONAL LAND SURVEYOR LICENSURE

A. Qualifying for Licensure

An applicant for a license shall qualify by meeting the educational, experience, and examination requirements set forth in one of the four options listed below:

1. Approved Curriculum Option
 - Graduation from a college or university on completion of at least a 4-year curriculum in land surveying that the Board approves;
 - Has passed the fundamentals of land surveying examination;
 - At least two years of experience in land surveying that is satisfactory to the Board and that indicates to the Board that the applicant may be competent to practice land surveying;
 - Has passed the Principles and Practice of Surveying examination; and
 - Has passed the two State specific examinations.
2. Regional accrediting association curriculum option.
 - Graduation upon completion of at least a 4-year curriculum from a college or university that is accredited by, or is a constituent unit of an institution accredited by, the Middle States Association of Colleges and Schools or the equivalent regional accrediting association of other regional areas;
 - Has passed the fundamentals of land surveying examination;
 - At least four years of experience in land surveying that is satisfactory to the Board and that indicates to the Board that the applicant may be competent to practice land surveying;
 - Has passed the Principles and Practice of Surveying examination; and
 - Has passed the two State specific examinations.
3. Nonacademic option (12 years work experience)
 - Graduation from high school or the equivalent;
 - At least 12 years of experience in land surveying that is satisfactory to the Board and that indicates to the Board that the applicant may be competent to practice land surveying;
 - Has passed the Principles and Practice of Surveying examination; and
 - Has passed the two State specific examinations.
 - For each 30 semester hours or its equivalent that an applicant completes in land surveying courses that the Board approves, the Board may allow a 1-year credit towards the experience requirements of Option 3 for a maximum of 3 years.
4. Nonacademic Option (8 years work experience)
 - Graduation from high school or the equivalent;
 - At least four years of experience in land surveying that is satisfactory to the Board and that indicates to the Board that the applicant may be competent to practice land surveying;

- Has passed the fundamentals of land surveying examination;
- Has completed at least four years of experience in land surveying that is satisfactory to the Board and indicates to the Board that the applicant may be competent to practice land surveying; ;
- Has passed the Principles and Practice of surveying examination; and
- Has passed the two State specific examinations.
- For each 30 semester hours or its equivalent that an applicant completes in land surveying courses that the Board approves, the Board may allow a 1-year credit towards the experience requirements of Option 4 for a maximum of 3 years.

B. Education.

The Board accepts as an approved curriculum under Option 1, a 4-year degree in land surveying or engineering.

Minor Engineering - An applicant for the principles and practice examination shall have two years of experience generally described as "**minor engineering experience.**"

An applicant may be able to meet the two-year experiential requirement in **minor engineering** by the following methods:

- (a) Acceptable work experience.
- (b) Acceptable education; or
- (c) A combination of acceptable work experience and acceptable education.

An applicant may claim three semester credit hours as an equivalent of six months of **minor engineering** experience after the completion to the Board's satisfaction, of the courses of instruction in the following areas:

- (a) **Hydraulics;**
- (b) **Surface water hydrology;**
- (c) **Route surveying or road design;**
- (d) **Storm drainage system design;**
- (e) **Storm water management design;**
- (f) **Sediment and erosion control design;**
- (g) **Infiltration.**

The courses must be offered by a university, community college, professional surveying organization, or other qualified provider acceptable to the Board.

C. Experience.

1. Work experience must conform to the definition of "practice land surveying" as set forth in Business Occupations and Professions Article, Title 15, Section 15-101(j):

(1) "Practice land surveying" means any service, work, documentation, or practice, the performance or preparation of which requires the application of special

knowledge of the principles of mathematics, the related physical and applied sciences, and the requirements of the relevant law, as applied: to :

(i) measuring, platting, and locating lines, angles, elevations, natural or artificial features in the air, on the surface of the earth, in u underground work, and on the beds of bodies of water for the purpose of determining and reporting positions, topography, areas, and volumes;

(ii) the platting or replatting, establishing or reestablished, locating or relocating, or setting or resetting the monumentation for boundaries of real property, easements, or rights-of-way;

(iii) platting, layout, and preparation of surveys, plats, plans, and drawings, including:

1. site plans;
2. subdivision plans;
3. subdivision plats;
4. condominium plats;
5. right-of-way and easement plats; and
6. other recordable plats;

(iv) conducting horizontal and vertical control surveys, layout or stakeout of proposed construction, and the preparation and platting of as-constructed surveys;

(v) utilizing measurement devices or systems, such as aerial photogrammetry, global positioning systems, land information systems, geographic boundaries of real property, easements, or rights-of-way; and

(vi) in conjunction with the site development or subdivision of land, the preparation and design of plans for the following projects, provided that such preparation and design are in accordance with design manuals, details, and standards accepted by the State or local authority:

1. **road and street grades;**
2. **sediment and erosion control measures;**
3. nonpressurized closed storm drainage and stormwater management systems; and
4. **open conduit storm drainage and stormwater management systems.**

2. The Board has set forth guidelines for the recommended experience criteria and tasks by surveying category, more specifically, in the attached chart. (ATTACHMENT A)

D. Examinations.

The fundamentals of surveying and principles and practice of surveying examinations are written by the National Council for Engineering and Surveying (NCEES). NCEES is a national nonprofit organization dedicated to advancing professional licensure for engineers and surveyors. It develops, administers, and scores the examinations used for engineering and surveying licensure in the United States.

State Specific Exams - The Maryland Board requires that before an applicant is eligible for licensure they must complete the follow two state specific examinations unless subject to the exceptions noted:

MARYLAND LAW AND ETHICS EXAM

The Maryland Law and Ethics exam is a two-hour open book exam with 60 multiple choice questions on Maryland Law and Regulations.

STORM DRAIN AND ROAD GRADE EXAM

The Road Grade and Storm Drain Exam is a four-hour open book exam encompassing principles and practices problem solving.

ATTACHMENT A

Experience Criteria and Tasks by Surveying Category.

GUIDELINE FOR MINIMUM NUMBER EXPERIENCE HOURS PER SURVEYING CATEGORY BY LICENSING TRACK									
License Track /Total Minimum Hrs.	Control Surveys	Boundary Surveys	Topographic Surveys	Minor Engineering	Subdivision Planning	Construction Surveys	Location Drawings	Minimum Unallocated Hours*	
15-305B/3,800	475	1710	285	570	285	285	95	95	
15-305C/7,600	1850	2610	475	760	475	475	190	765	
15-305E/15,200	1900	5700	950	1060	1060	1060	300	3170	
15-305D/22,800	4560	6840	1590	1590	1590	1590	450	4590	

* The unallocated hours can be in a surveying category of the applicant's choice.

DESCRIPTION OF IMPORTANT WORK TASKS AND FUNCTIONS BY SURVEYING CATEGORY						
CONTROL SURVEYS	BOUNDARY SURVEYS	TOPOGRAPHIC SURVEYS	MINOR ENGINEERING	SUBDIVISION PLANNING	CONSTRUCTION SURVEYS	LOCATION DRAWINGS
Compute survey data	Prepare survey maps, plats & reports	Prepare survey maps, plats and reports	Compute areas and volumes	Prepare survey maps, plats and reports	Prepare survey maps, plats and reports	Determine locations of boundary lines and encumbrances
Analyze and adjust survey data	Prepare land descriptions	Compute areas and volumes	Review documents and communicate with clients, attorneys or other interested parties	Compute areas and volumes	Prepare worksheets for analysis of surveys	Research and evaluate evidence from public record sources

Document and/or establish monuments and their records	Review documents and communicate with clients, attorneys or other interested parties	Review documents and communicate with clients, attorneys or other interested parties	Design horizontal and vertical alignment for roads within a subdivision	Review documents and communicate with clients, attorneys or other interested parties	Review documents and communicate with clients, attorneys, or other interested parties	Advise clients regarding boundary uncertainties
Convert survey data to an appropriate datum	Identify & evaluate field evidence for possession, boundary line discrepancies, & potential adverse possession claims	Identify pertinent physical features, landmarks, and existing documentation	Perform flood plain surveys	Document and/or establish monuments and their records	Select appropriate vertical and/or horizontal datum	Prepare Location Drawings
Select appropriate vertical and/or horizontal datum	Identify pertinent physical features, landmarks and existing monumentation	Research and evaluate evidence from public record sources	Prepare grading plans	Determine subdivision development requirements and constraints	Perform construction stake out	
Recover horizontal and vertical control	Research and evaluate evidence from public record sources	Research and evaluate evidence from private record sources	Design earthwork for balanced cut/fill	Determine and prepare lot and street designs for land subdivision		
Determine levels of precision and order of accuracy	Research and evaluate evidence from private record sources	Prepare worksheets for analysis of surveys	Calculate existing and proposed storm runoff	Prepare sketches and/or preliminary plats		
Perform differential leveling	Evaluate the priority of conflicting title elements	Perform record or as-built surveys	Prepare erosion control plans	Perform condominium surveys		
Perform trigonometric leveling	Document and/or establish monuments and their records	Reconcile survey and record data	Design storm sewers and appurtenances	Prepare Right of Way Plats		
Calibrate instruments	Perform ALTA/ACSM Surveys		Design stormwater management facilities			
Perform photogrammetric control surveys	Identify riparian and/or littoral boundaries		Design open channels			

Perform astronomic measurements	Document potential possession claims		Design culverts and appurtenances		
Reconcile survey and record data	Determine vegetation species		Design pavement structures and cross sections		
Perform GPS surveys	Determine location of boundary lines and encumbrances				
	Prepare worksheets for analysis of surveys				

PROFESSIONAL ENGINEER LICENSURE

A. Qualifying for Licensure.

An applicant for a license shall qualify by meeting the **education, experience, and examination** requirements set forth in one of the three options listed below:

A person can qualify one of three ways:

1. Approved Curriculum Option

- Graduation from a college or university on completion of at least a 4-year curriculum in engineering that is approved by the Accreditation Board for Engineering and Technology (ABET);
- At least four years of work experience in engineering that is satisfactory to the Board and that indicates to the Board that the applicant may be competent to practice engineering.
- Has passed the fundamentals of engineering exam
- After passing the examination in fundamentals, has passed the principles and practice of engineering exam.

2. Unapproved Curriculum Option

- Graduation from a college or university on completion of at least a four-year curriculum in engineering, or its equivalent, that is not approved by ABET;
- At least eight years of work experience in engineering that is satisfactory to the Board and that indicates to the Board that the applicant may be competent to practice engineering;
- Has passed the fundamentals of engineering exam
- After passing the examination in fundamentals, has passed the principles and practice of engineering exam.

3. Non-Academic Option

- At least 12 years of work experience in engineering that is satisfactory to the Board, in at least five years of which the applicant has been in responsible charges, if the collective experience indicates to the Board that the applicant may be competent to practice engineering.
- Education or teaching experience may count towards the experience requirement;
- Has passed the principles and practice of engineering exam.

B. Education.

1. An engineering curriculum is a course of study which imparts knowledge of the mathematical and natural sciences and trains an individual to apply that knowledge to developing ways to use the materials and forces of nature for the benefit of mankind. An "engineering curriculum of 4 scholastic years or more" is defined to be both an approved and unapproved college or university engineering and sciences curriculum consisting of at least:

(a) 15 semester-hours of instruction in mathematics that emphasizes mathematical concepts and principles rather than computation, which shall include differential calculus, integral calculus, and differential equations;

(b) 15 semester-hours of instruction in basic sciences including general chemistry and general physics with calculus;

(c) 30 semester-hours of instruction in engineering subjects, that includes a course, project, or thesis that focuses upon engineering design; and

(d) 15 semester-hours of instruction in advanced mathematics, basic science, or engineering.

2. Incorporated in the engineering curriculum as integral elements of instruction shall be:

(a) Hands-on, quantitative laboratory work correlated with the science and design instruction;

(b) For graduation subsequent to 1975, at least one high-level computer language such as FORTRAN, PASCAL, C/C++, or MATLAB so that the student is able to compose computer programs to solve problems in science and design; and

(c) Demonstrated familiarity with probability, statistics, and linear algebra.

3. Engineering subject courses shall be selected from subject areas such as:

- a. Statics and dynamics;
- b. Strength of materials;
- c. Materials science;
- d. Thermodynamics;
- e. transfer and transport phenomena;
- f. Electrical, electronic, and computer engineering
- g. Solid state physics, nuclear physics, and quantum optics;
- h. Physical chemistry, inorganic, and organic chemistry;
- i. Electrodynamics;
- j. Digital and signals and systems;

- k. finite element analysis;
- l. Transient analysis and feedback control theory;
- m. Engineering design;
- n. Fluid mechanics, hydraulics, and gas dynamics;
- o. Civil and structural engineering;
- p. Sanitary and environmental engineering;
- q. Computer science, other than computer programming skills;
- r. Biochemistry, biophysics, and biomechanics;
- s. Geochemistry and geophysics;
- t. Engineering economics; or
- u. Other subject areas acceptable to the Board.

4. An applicant who has graduated from a college or university curriculum which does not meet the standards set forth above may present to the Board evidence of satisfactory completion of instruction in other programs of study required by the Board to meet the requirements.

C. Experience.

Work experience must conform to the definition of "practice engineering" as set forth in Business Occupations and Professions Article, Title 14, Section 14-101(f):

(1) "Practice engineering" means to provide any service or creative work the performance of which requires education, training, and experience in the application of :

(i) special knowledge of the mathematical, physical, and engineering sciences; and

(ii) the principles and methods of engineering analysis and design.

(2) In regard to a building or other structure, machine, equipment, process, works, system, project, or public or private utility, "practice engineering" includes:

(i) consultation;

(ii) design;

(iii) evaluation;

(iv) inspection of construction to ensure compliance with specifications and drawings;

(v) investigation;

(vi) planning; and

(vii) design coordination.

D. Examination.

The examinations are written by the National Council for Engineering and Surveying (NCEES). NCEES is a national nonprofit organization dedicated to advancing professional licensure for engineers and surveyors. It develops, administers, and scores the examinations used for engineering and surveying licensure in the United States. The Principles and Practice exam is offered in 24 different disciplines.



October 24, 2011

Department of Labor, Licensing & Regulation
Division of Occupational & Professional Licensing
500 North Calvert Street, 3rd Floor
Baltimore, MD 21202-3651



Gentlemen:

Mr. Howard Harclerode, Mr. John Mattee, and Ms. Pam Edwards met with the Severn River Commission (SRC) on August 4, 2011 to discuss their concern that statutory contradictions currently govern the scope of practice of landscape architects and professional land surveyors. Mr. Christopher Schein was also to attend but was absent

Specifically House Bill 415 and Senate Bill 827 were under discussion.

All three guests particularly stressed that, in their view, the education and training of landscape architects does not fundamentally differ from that of engineers where stormwater management practices are concerned. We would like to further explore the specific training for professional land surveyors and licensed landscape architects in comparison to professional engineers that would qualify the first two professions to develop sediment and erosion control plans equal to professional engineers. Given the importance of proper stormwater and sediment control to the health of the Severn River and surrounding watershed, we view this information as critical to the SRC's ability to consider any change in position on the current statutory restrictions on landscape architects and land surveyors.

We look forward to receiving this information from you.

Sincerely,

Lina Vlavianos
Chairman

cc: Mr. Howard Harclerode, MD Board for Professional Engineers
Mr. John Mattee, MD Board for Professional Land Surveyors
Ms. Pam Edwards, MD Dept. of Labor, Licensing and Regulation

July 11, 2011

Lina Vlavianos, Chair
Anne Arundel County Severn River Commission
2664 Riva Road
Annapolis, MD 21401

Dear Ms. Vlavianos:

We are reaching out to you in our capacity as chairs of the Maryland State Board for Professional Engineers, Maryland State Board for Professional Land Surveyors, and Maryland State Board of Examiners of Landscape Architects, respectively.

We understand that during the 2011 Session of the Maryland General Assembly, the SB 827/HB 415 which intended to authorize professional land surveyors and landscape architects to certify silt and erosion control plans in the Severn River Watershed, received the unfavorable reports by the House Environmental Matters Committee. As you are aware, the statutory terms that define the scopes of practices of professional land surveyors and landscape architects (as well professional engineers) are contained in the respective licensing statutes that fall within the ambit of the regulatory boards that we chair. As you are also aware, there are certain inconsistencies in the statutory provisions set forth in Section 4-308 of the Environment Article, Annotated Code of Maryland, which specify the qualifications of the design professionals qualified to sign and seal the above-mentioned plans, and Titles 9 and 15 of the Business Occupations and Professions Article, Annotated Code of Maryland, which govern the scopes of practice of landscape architects and professional land surveyors.

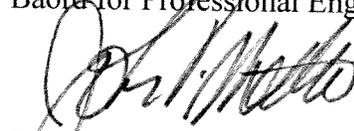
We were hoping to meet with you and other members of the Commission, or if you prefer, to be on the agenda of one of the Commission's upcoming meetings, to discuss these statutory contradictions and to explore ways to resolve them. Please let us know which method of communication would you prefer, and we will do our best to accommodate that.

Lina Vlavianos
July 11, 2011
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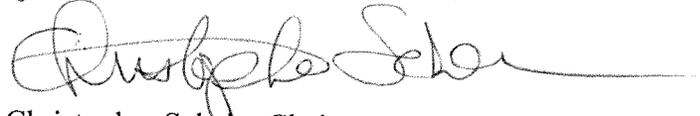
Thank you very much and we look forward to working with you and the Commission on behalf of our boards.

Sincerely,


Howard "Skip" Harcleorde, P.E., Chairman
Board for Professional Engineers



John V. Mettee, Chairman
Board for Professional Land Surveyors



Christopher Schem, Chairman
Board of Examiners of Landscape

Architects