

Board for Architects, Professional Engineers, Land
Surveyors, Certified Interior Designers and Landscape
Architects



Virginia Surveyor Registered Apprenticeship Standards

Revised: July 2, 2019



Department of Professional and Occupational Regulation

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**Originally approved by the APELSLA (now APELSCIDLA) Board on September 19, 1996;
revised January 3, 2003, revised September 14, 2016, revised March 20, 2018, revised
September 13, 2018. December 5, 2018**

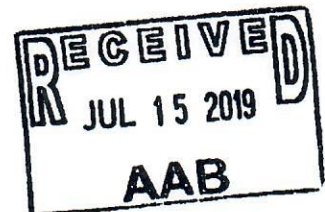


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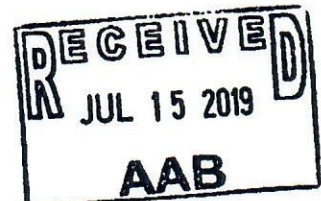
PURPOSE

The purpose of these Standards is to establish minimum requirements for the training of the Land Surveyor Apprentice in accordance with the regulations of the Architects, Professional Engineers, Land Surveyors, Certified Interior Designers and Landscape Architects (APELSCIDLA Board).

FORWARD

To insure the development of highly skilled Land Surveyors throughout the Commonwealth, these Standards were developed in conjunction with the APELSCIDLA Board, the Virginia Apprenticeship Council, and the Virginia Department of Labor and Industry (DOLI).

To assure that the intent of these Standards is implemented, each Apprentice should be encouraged to develop his skills to the highest level of his ability. The training should be thorough, well planned and designed to enhance the profession.



II. OVERVIEW / DEFINITIONS

ABOUT THE VIRGINIA SURVEYOR REGISTERED APPRENTICESHIP STANDARDS –

This program was initially developed in conjunction with the Board for Architects, Professional Engineers, Land Surveyors & Landscape Architects-APELSLA (now APELSCIDLA), the Virginia Department of Transportation (VDOT), the Woodson Related Instruction Team, and the Apprenticeship Training Division, as approved July 25, 1996.

The Apprenticeship Standards are comprised of the work of the apprentice, the leadership of the sponsor, the supervising land surveyor, classroom education, verified RTI, and on the job training components all under the auspices of Department of Occupational and Labor Industry (DOLI). Any apprenticeship candidate seeking sponsorship should approach a licensed land surveyor regarding an apprenticeship agreement with DOLI.

THE LAND SURVEYOR (PROFESSIONAL) –

"Land surveyor" means a person who, by reason of his knowledge of the several sciences and of the principles of land surveying, and of the planning and design of land developments acquired by practical experience and formal education, is qualified to engage in the practice of land surveying, and whose competence has been attested by the Board through licensure as a land surveyor. §54.1-400 of the Code of Virginia

The "practice of land surveying" includes surveying of areas for a determination or correction, a description, the establishment or reestablishment of internal and external land boundaries, or the determination of topography, contours or location of physical improvements, and also includes the planning of land and subdivisions thereof. The term "planning of land and subdivisions thereof" shall include, but not be limited to, the preparation of incidental plans and profiles for roads, streets and sidewalks, grading, drainage on the surface, culverts and erosion control measures, with reference to existing state or local standards.

§54.1-400 of the Code of Virginia

WHAT IS REGISTERED APPRENTICESHIP?

Registered Apprenticeship is a learning program in those industrial and craft occupations that require a wide and diverse range of skills and knowledge. As practiced by modern industry, apprenticeship is a business oriented system in which the employee entering a certain industry is given intensive instruction and applied work experience in all of the theoretical and practical aspects of the given skilled occupation, craft or trade.

WHO IS THE SPONSOR?

The sponsor can be an employer that has an approved apprenticeship program registered with the DOLI, operated by the sponsor, and registered in the sponsor's name.

WHO IS A SUPERVISOR?

A supervisor shall be a Virginia licensed land surveyor, and shall have responsible charge for the apprentice's work. The supervisor is responsible for verification of on the job training and related technical instruction (RTI). The supervisor may also be the sponsor.

WHO IS A REGISTERED APPRENTICE?

An apprentice is a person at least 16 years of age who, as a principal occupation, is engaged in learning and working in an occupation as stated in the Standards, and who is covered by a written agreement with a Sponsor providing for the employment in accordance with the rules and regulations governing Apprenticeship in Virginia and who is registered with the Virginia Department of Labor and Industry.

§ 40.1-120. Definitions.

As used in this chapter, the following terms shall have the following meanings unless the context indicates otherwise:

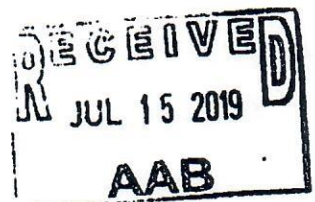
"Apprenticeable occupation" means a skilled occupation having the following characteristics:

- 1. It is customarily learned in a practical way through a structured systematic program of on-the-job supervised work experience;*
- 2. It is clearly identifiable and recognized throughout an industry;*
- 3. It involves manual, mechanical or technical skills which require a minimum of 2,000 hours of on-the-job work experience of new apprenticeable trades not otherwise established; and*
- 4. It requires related instruction to supplement the on-the-job work experience.*

"Apprentice" means a person at least 16 years of age who is covered by a written agreement with an employer and approved by the Commissioner. The agreement shall provide for not less than 2,000 hours of reasonably continuous employment for such person, for his participation in an approved schedule of work experience through employment, and for the amount of related instruction required in the occupation.

ON-THE-JOB TRAINING FOR LAND SURVEYORS

Registered Apprenticeship is on the job training that allows individuals to prepare for a skilled profession through supervised on the job training combined with Land Surveyor related technical instruction.



RELATED TECHNICAL INSTRUCTION (RTI) FOR LAND SURVEYORS

A minimum of 120 hours of RTI is required and to be included by each employer (in addition to the 600 core curriculum hours) for a total of 720 hours. Employers may seek RTI that meets their industry needs. This information should be recorded on the RTI form which can be found at the end of this document.

This instruction in technical subjects may be accomplished through media such as classroom, occupation or industrial courses, electronic media, or other instruction approved by the DOLI and accepted by the APELSCIDLA Board.

APELSCIDLA BOARD

Board for Architects, Professional Engineers, Land Surveyors, Certified Interior Designers and Landscape Architects (APELSCIDLA). Formerly referred to as "APELSLA" in the original document.

The 15-member Board which examines, licenses and regulates the approximately 26,000 Architects, Professional Engineers, Land Surveyors, Certified Interior Designers, and related business entities in Virginia. The Board was established in 1920 for Architects, Engineers and Surveyors. Landscape Architects were added in 1980 Interior Designers joined in 1990, and Citizen members were added in 2018.

FROM THE APELSCIDLA REGULATIONS (JANUARY 1, 2016) –

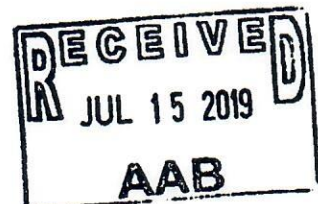
The education and/or experience, and examination requirements for the designation are as follows:

18VAC10-20-300. Requirements for Surveyor-In-Training (Sit) Designation.

A. In order to be approved to sit for the Fundamentals of Land Surveying (FLS) exam, applicants must satisfy one of the following:

- 1. Be enrolled in a board-approved or ABET-accredited surveying or surveying technology curriculum, have 12 months or less remaining before completion of degree requirements, and provide a certificate of good standing from the dean of the school or his designee;***
- 2. Have earned an undergraduate degree from a board-approved or ABET-accredited surveying or surveying technology curriculum;***
- 3. Have earned a board-approved undergraduate degree related to surveying and possess a minimum of one year of approved land surveying experience;***
- 4. Have earned a board-approved undergraduate degree in a field unrelated to surveying and possess a minimum of two years of approved land surveying experience;***
- 5. Have earned a board-approved associate's degree related to surveying and possess a minimum of four years of approved land surveying experience;***
- 6. Have successfully completed a board-approved survey apprenticeship program. The apprenticeship program shall include a minimum of 480 hours of surveying-related classroom instruction with a minimum of six years of approved land surveying experience; or***
- 7. Have graduated from high school with evidence of successful completion of courses in algebra, geometry and trigonometry, and possess a minimum of eight years of approved land surveying experience.***

B. Applicants seeking approval to sit for the FLS exam pursuant to subdivisions A 3 through 7 of this section may apply board-approved college credits to help meet the experience requirement. The maximum rate of college credit substitution for experience shall be one year of experience credit for each 40 hours of board-approved college credits completed. College credits applicable toward the completion of any degree used



to satisfy a requirement of subsection A of this section shall not be eligible for experience substitution.

C. An applicant who qualified for the FLS exam under subdivision A 1 of this section will be issued the SIT designation upon the board's receipt of the applicant's degree verification. All other applicants shall receive the SIT designation upon passing the FLS exam.

Important Note: The Registered Surveyor Apprenticeship Standards were developed to assist those applicants performing surveying or services to acquire the education and experience necessary to improve their eligibility for the Fundamentals of Surveying Examination. Completion of this program intends, but does not guarantee that the applicant will be approved by the APELSCIDLA Board to sit for the examination. The APELSCIDLA Board also evaluates each applicant's work experience to make the determination to allow individuals to sit for the examination. In order to receive credit for completing the surveyor apprenticeship program, all applicants must provide the APELSCIDLA Board with proper documentation indicating that the program (including related technical instruction and on the job training), has been successfully completed.

Everyone submitting an application to the APELSCIDLA Board is strongly encouraged to be thorough, complete, and accurate when filling out the education and experience sections of the application.

III. Special Inclusions to the “Minimum Standards for Registered Apprenticeship” as specifically related to the Virginia Surveyor Registered Apprenticeship Standards:

TERM OF REGISTERED APPRENTICESHIP

The minimum term of the Land Surveyor registered apprenticeship shall be 10,000 hours (five years) of work experience, which may include the 120 required RTI hours, as stipulated in the Work Processes Outline and shall consist of reasonably continuous employment, supplemented by required approved related technical instruction. When the apprentice is required to work overtime, these hours will not be credited to the term of apprenticeship.

SCHEDULE OF WORK PROCESSES

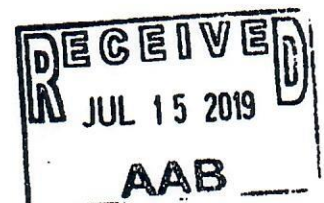
A condensed schedule of the major divisions of the profession based on approximate hours is recorded in the Work Processes Outline as adopted by the APELSCIDLA Board.

SCHEDULE OF RELATED TECHNICAL INSTRUCTION (RTI) PROCESSES

Separate from work processes, 120 hours to be documented on a separate form in identified categories as adopted by the APELSCIDLA Board; this form can be found at the end of this document.

SAFETY AND HEALTH TRAINING

Before starting in the profession at any site or in any facility, the Sponsor shall instruct the Apprentice in safe and healthful work practices and shall insure that the registered apprentice is trained in facilities and other environments that meet the Virginia Occupational Safety and Health Standards for General Industry and the Construction Industry developed pursuant to the Federal Occupational Safety and Health Act.



IV.

APPRENTICESHIP RELATED TECHNICAL INSTRUCTION

Approved by the APELSLA (*now APELSCIDLA*) Board, July 25, 1996,
and revised December 19, 2002; June 13, 2016, September 21, 2018

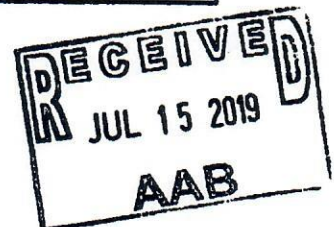
Please Note:

All Math instruction as set forth by the APELSCIDLA Board,
must be provided by a secondary or college or above teacher.

All Surveying instruction as set forth by the APELSCIDLA Board,
must be provided by a licensed Land Surveyor, or other professional.

Survey 1 - 96 Hours	Survey 2 - 96 Hours
<p>Weeks 1 - 8 Introduction to the Course APELSCIDLA Rules and Regulations Survey Mathematics Weeks 9 - 16 Errors in Measurement Distance Measurement includes Taping/Corrections Angular Measurement Differential Leveling Weeks 17 - 24 Traverse Computations Horizontal Curves Vertical Curves Weeks 25 - 32 Topographic / Photogrammetric Surveys Geodesy / GPS / GIS Emerging Surveying Technologies Fundamentals of Surveying Exam Review</p>	<p>Week 1 License and trade info Weeks 2-7 Introduction and study of Theory of Errors in Observations and Coordinate Geometry (COGO); analysis and adjustments of survey measurements; exam Weeks 8-12 Horizontal Curves; formula derivations; note keeping for layout; compound reverse curves; exam Weeks 13-17 Control Surveys and Geodetic Reductions; horizontal and vertical control networks; NGRS; exam Weeks 18-23 Map Projections and State Plane Coordinates; Lambert Conformal and Transverse Mercator; exam Weeks 24-28 Astronomic Azimuth Determination; applied astronomy and celestial coordinate systems; exam Weeks 29-32 Global Positioning System; field procedures; various observing methods and their achievable accuracies; exam</p>

Survey 3 - 96 Hours + 30 hour Project	Survey 4 - 96 Hours + 30 hour Project
<p>1-Leveling and Profiles 2-Vertical Curves 3-Cross-Sections Leveling And Typical Sections 4-7 Earthwork Volumes Linear Projects Grading Plans Borrow Pit and Contour Method 8-Unit Exam/History of Surveying 9-10-Public Lands Survey System 11-12-Maps & Photographs 13- Subdivision Design 14-Research, Schemes, 15-Preliminary Layout 16-Street Design 17-Lot Computations, Curves 18-Plans and Profiles 19-Street Grading Plan 20- Introduction to Virginia Sediment and Erosion Control; Stormwater Best Management Practices 21-Lot Grading 22-Siting the Dwelling 23-Unit Exam. Sketching the Lot Grading Plan 24-Sketching the Lot Grading Plan (cont.) 25-Plotting Drainage Divides 26-S.U.E., Sub-Surface Utilities Engineering, Laws and the segment of Land Surveying related to SUE 27-Unit Exam. Ethics & Minimum Standards 28-Ethics & Minimum Standards (cont.) 29-Construction Layout 30-Construction Layout (cont.) 31-Business, Economics, Finance 32-Business, Economics, Finance, (cont.) 33-Unit Exam. Critique</p>	<p>Weeks 1-2 Introduction to Hydrology Stormwater Runoff Urban Water Cycle Soils/Land Cover & Topographical Changes Stream Impacts Water Quality Impacts Weeks 3-7 The Rational Formula The Anderson Formula NRCS(Natural Resources Conservation Service) Technical Release 55 (TR-55) Week 8 Review & Test: Weeks (1-7) Weeks 9-12 Introduction to Hydraulics Fluid Properties Fluid Statics/Dynamics Open Channel Flow Weeks 13-15 Manning's Equation Storm Sewer Hydraulics Sanitary Sewer Design Week 16 Review & Test: Weeks (9-15) Weeks 17-18 Inlet Design On Grade/Sump Conditions Weeks 19-21 Systems Head Losses VDOT Standard Step Culvert Hydraulics Inlet/Outlet "barrel" Control Week 22 Review & Test: Weeks (19-21) Weeks 23-26 Virginia Runoff Reduction Method Stormwater Management Water Quantity Requirements Water Quality Requirements Best Management Practices (BMP) Weeks 27-31 State (DEQ)Regulations</p>



<p>Project: CADD based preparation of site and subdivision type docs, plats, plans, etc. Prerequisite CADD experience.</p>	<p>MS4/Virginia Stormwater Management Program (VSMP) VPDES General Permit Chesapeake Bay TMDL Sediment and Erosion Control Certifications Local Ordinances Fairfax County Stormwater Chesapeake Bay Week 32 Review & Test: Weeks (23-31) Project: Stormwater, BMP, water quality design – using structural and non-structural</p>
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<p>Survey 5 - 96 Hours + 30 hour Project</p>	
<p>Weeks 1, 2, 3-Course Introduction/Syllabus/ Virginia Statutory Law related to the practice of Land Surveying, AP/ELSCIDLA, Types of Surveys 4, 5-Dillon Rule in VA, Subdivision and Zoning Ordinances 6, 7-Byrd Act; Statute of Frauds, and Estoppel, Rights of Way, Discontinuance, Vacation, and Abandonment, Types of Deeds; Levels of Warranty; Quiet Title Action; Quitclaim Deeds 8-Quarter Exam 9, 10-Legal Descriptions 11, 12-Reconstruction of Intent, Order of Construction; Weight of Evidence 13-Conveyances; Sequential and Simultaneous 14-Reconstruction of Intent Applications in Boundary Solutions: Sequential/Simultaneous 15-Deed Research/CPAN and Project outline-kickoff 16-Quarter Exam/Intro to Case Law Research 17-Unwritten Rights: Boundary by Adverse Possession; Agreement; Acquiescence and Acceptance 18-Review Deed Research Project and Q&A on Research Process (30Hour Project)/Introduction of FINAL PAPER concept; requirements & topics 19, 20-Littoral/Riparian Boundary & Rights, Case Study 21, 22-Easements 23-ALTA/NSPS Land Title Survey 24-Quarter Exam 25-Railway and Utility Plans 26, 27-VDOT Plans and Alignments 28- Project Management 29-Virginia Condominium Act/Review of FLS and PLS Content areas 30, 31- Due Diligence/Records Management, The Weight of Tax Assessment Maps, Informal Consolidations-NOT, Use of GIS, Ethics for the Surveyor 32-Presentation of Legal Principle Research Papers and/or Final Examinations</p> <p>Project: Land Records Research</p>	

V.

Work Processes (On-The-Job Training)

Surveyor (Land, Professional)

018.167-018

**Approved by the APELSLA (now APELSCIDLA) Board, July 25, 1996, and revised
December 19, 2003**

The apprentice shall obtain practical supervised experience in the following areas of surveying procedures. The apprentice should progress through the different levels of responsibility and experience related to the procedures in both the field and office environments until a thorough knowledge of the procedures is attained. The hours indicated shall be the minimum hours required for advanced operations of the listed procedures. It is expected that the apprentice will have additional hours achieving competency in the advanced operations and procedures.

Please Note:

This program is five years in duration. Credit for previous experience towards these years must be given based on the procedures as set forth in the Standards.

- | | |
|---|-------------|
| 1. Application, care and practices of proper steel and cloth tape measurement procedures with the understanding of obtainable precision and accuracy in determining horizontal distances. | 200 Hours |
| 2. Application, care, and adjustment of surveying equipment. | 200 Hours |
| 3. Recording of hand and electronic field notes, including the use of reference sketches, describing control points and other pertinent field data. | 800 Hours |
| 4. Application, care, use, operation, and adjustment procedures for vertical and horizontal angles when performing topographic contouring and open or closed traversing. | 700 Hours |
| 5. Application, care, and use of equipment for selecting turning points, identifying topographical features on site surveys. | 800 Hours |
| 6. Establishing observation points, performing interior angle and deflection angles, controls for R/W and boundary identification, determine error of closure and accuracy. | 1,000 Hours |
| 7. Observation for azimuth determination, establishing GPS control sites, HARN stations, identifying picture points of aerial photography. | 500 Hours |



8. Application and use of field and office equipment including software programming for the development of plans or plats from field surveys.	1,000 Hours
9. Interpret plans for establishment of: boundaries and R/W, drainage and utility layout, horizontal and vertical curves, slope and grade stakes.	1,000 Hours
10. Field and office procedures for area and volume determinations.	500 Hours
11. Application, care, and adjustment procedures for establishing elevation profiles and cross sections using differential, trigonometric, and GPS leveling procedures.	800 Hours
12. Application, care, and procedures for conducting research of land records, deeds, wills, and plats. Understanding, applying, and relating local or states codes, statutes, and regulations that influence or control surveying procedures.	400 Hours
13. Application, computation, and field procedures for establishing state plane coordinates.	400 Hours
14. Other general or advanced surveying operations that lead to the complete development of the surveying apprentice but does not clearly fit into the previous thirteen items.	1,200 Hours
15. Health and Safety Procedures.	500 Hours
TOTAL =	10,000 Hours

VI. APPRENTICE TEXTBOOKS RELATIVE TO RELATED TECHNICAL INSTRUCTION

Basic Text: "Land Surveyor Reference Manual", second edition, Andrew L. Harbin
ISBN: 0-912045-09-4, Professional Publications, Inc.

References: "Solutions Manual for the Land Surveyor Manual", second edition,
Andrew L. Harbin
ISBN: 0-912045-42-6, Professional Publications, Inc.

"Surveying", ninth edition, Moffet & Bouchard
ISBN: 0-06-500059-5, Harper Collins Publishers, Inc.

"Elementary Surveying", current edition, Paul R. Wolf and Russell Brinker
ISBN: 0-06-500399-3, Harper Collins Publishers, Inc.

"Basic Occupational Mathematics", David Newton
ISBN: 0-8251-1676-7, J. Weston Walch Publisher

"Brown's Boundary Control and Legal Principles", 6th Edition, Robillard,
Wilson, and Brown
ISBN: 978-0-470-18354-0, Wiley Publishing

"Evidence and Procedures for Boundary Location", 3rd Edition, Brown,
Robillard, Wilson
ISBN: 0471552194, Wiley Publishing

All Other Texts as the Instructors Deem Necessary



VII.

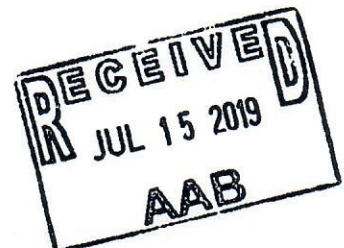
**VIRGINIA SURVEYOR APPRENTICESHIP STANDARDS
REFERENCE MATERIALS LIST**

PLEASE NOTE:

**THE FOLLOWING PUBLICATIONS ARE SUGGESTED BY THE APESCIDLA
BOARD AS REFERENCES FOR LAND SURVEYOR STUDENTS IN PREPARATION
FOR THE L.S.I.T. EXAMINATION**

1. **ACSM Definitions of Land Surveying and Associated Terms**
2. **Basic Geodesy, by J.R. Smith**
3. **Black's Law Dictionary**
4. **Boundaries and Adjacent Properties, Skeleton**
5. **Boundary Control and Legal Principles, Brown**
6. **Chesapeake Bay Preservation Act**
7. **Code of Virginia:**
 - Title 2.1, Chapter 32**
 - Title 3.1, Chapter 17.2**
 - Title 6.1, Chapter 7.3**
 - Title 7.1, Chapter 2**
 - Title 8.01, Chapter 3, 4, 14, and 26**
 - Title 11, Chapter 1**
 - Title 13.1, Chapter 7**
 - Title 15.1, Chapter 10, 11, and 24**
 - Title 17, Chapter 2**
 - Title 18.2, Chapter 5**
 - Title 21, Chapter 6**
 - Title 28.1, Chapter 5**
 - Title 33.1, Chapter 1**
 - Title 33.2**
 - Title 38.2, Chapter 46**
 - Title 41.1**
 - Title 43, Chapter 1**
 - Title 45.1, Chapter 10 and 22.1**
 - Title 49, Chapter 1**
 - Title 54.1, Chapter 1, 2, 3, and 4**
 - Title 55, Chapter 1, 4, 4.1, 4.2, 5, 6, 8, 10, 17, 18, 19, 20, and 24**
 - Title 56, Chapter 2**
 - Title 62.1, Chapter 1, 2, and 8**

8. Evidence Procedures for Boundary Locations, Brown and Eldridge
9. Federal Register, Volume 40, No. 23, February 3, 1975
10. GPS Satellite Surveying, Alfred Leick
11. GPS Theory and Practice, B. Hoffman-Wellenhof, H. Lichtenegger, and J. Collins
12. Guide to GPS Positioning, David Wells & Canadian GPS Associates
13. Minimum Standard Detail, Requirements for ALTA/ASCM Land Title Surveys
14. Route Surveying, Hickerson
15. Rules and Regulations for the Board for Architects, Professional Engineers, Land Surveyors, Certified Interior Designers and Landscape Architects
16. Surveying, Moffit/Bouchard
17. Surveying and Boundaries, Clark
18. Surveying Handbook, Hickerson
19. The Navstar Global Positioning System, by Tom Logsdon
20. Federal Clean Water Act
21. Virginia Chesapeake Bay Local Assistance Department, Local Assistance Manual, Current Edition
22. Virginia Chesapeake Bay Preservation Area Designation and Management Regulations(VR 173-02-01)
23. Virginia Department of Transportation Drainage Manual
24. Virginia Department of Transportation Road and Bridge Standards
25. Virginia Department of Transportation Survey Manual
26. Virginia Erosion and Sediment Control Handbook, Current Edition
27. Virginia State Library Board, Standards for Plats
28. Writing Legal Descriptions, Wattles



VIII. Signature Page

These Standards are hereby approved:

**BOARD FOR ARCHITECTS, PROFESSIONAL ENGINEERS, LAND
SURVEYORS, CERTIFIED INTERIOR DESIGNERS & LANDSCAPE
ARCHITECTS**



Chairperson

7/8/19

Date

Registered with the Virginia Apprenticeship Council:



Secretary

7/11/19

Date

Adopted by:

Sponsor Representative

Date

MINIMUM STANDARDS FOR APPRENTICESHIP

Registered with the Virginia Apprenticeship Council
According to Chapter 6, Title 40.1
Code of Virginia

Effective July 1, 2018
and
Recognized by the U. S. Department of Labor
Office of Apprenticeship

These Minimum Standards for Apprenticeship are hereby adopted for use by:

Sponsor: _____

Date: _____

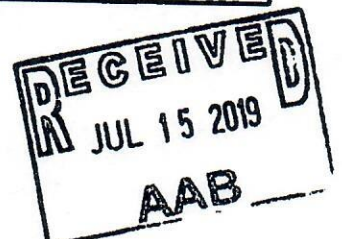
Signature of Sponsor's Representative: _____

These Standards for Apprenticeship are hereby approved:

Secretary of the Virginia Apprenticeship Council: C. Ray Davenport

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1. INTERPRETATIONS AND IMPLEMENTATION OF STANDARDS

- a. The Minimum Standards For Apprenticeship ("Standards") are based on, and conform to:
 - i. Regulations Governing the Administration of Apprenticeship Programs in the Commonwealth of Virginia, Chapter 20 of the Virginia Administrative Code. (Regulation 16VAC20-21-10 et. seq.)
 - ii. "Voluntary Apprenticeship Act", §§40.1-117 through 40.1-126 of the Code of Virginia.
- b. Each registered apprenticeship program must comply, at a minimum, with all items in these Standards. (Regulation 16VAC20-21-30)
- c. Each apprenticeship agreement will be governed by the terms and conditions in these Standards. (Regulation 16VAC20-21-70; VA Code §40.1-121)
- d. If a sponsor and apprentice have a difference of opinion in the interpretation of the Standards which cannot be satisfactorily resolved, either of them may consult with the Commissioner through the Apprenticeship Director, for clarification of the matter in question. (Regulation 16VAC20-21-120)

2. DEFINITIONS

- a. **Apprentice** - A person at least 16 years old, (whose employment is currently in compliance with all State and Federal laws) who is learning and working in an apprenticeship occupation and is covered by a written Apprenticeship Agreement with an employer, registered with the Virginia Department of Labor and Industry (DOLI). (Regulation 16VAC20-21-20; VA Code §40.1-120)
- b. **Apprenticeship Occupation** - A skilled occupation which: is customarily learned in a practical way through a structured systematic program of on-the-job supervised work experience; is clearly identifiable and recognized throughout an industry; involves manual, mechanical or technical skills which require a minimum of 2,000 hours of on-the-job work experience; requires related instruction to supplement the on-the-job work experience. (Regulation 16VAC20-21-20, VA Code §40.1-120)
- c. **Apprenticeship Agreement** - (Agreement) An approved written agreement between a sponsor and apprentice (and guardian if apprentice is under 18), as defined in Regulation 16VAC20-21-20. By signing the Agreement, all parties agree to accept all terms and requirements contained in the Standards, the sponsor's Program Registration, the Act and the Regulations. (Regulation 16VAC20-21-70; VA Code §40.1-121)
- d. **Sponsor** - An employer, association of employers, joint apprenticeship committee or organization of employees (that has an approved apprenticeship program registered with the DOLI. A program shall be operated by the sponsor and registered in the sponsor's name. (Regulation 16VAC20-21-20; VA Code §40.1-120)
- e. **Supervisor of Apprenticeship** - The person designated by the sponsor to perform the duties outlined in the Standards and will be designated on the Program Registration.
- f. **Program Registration** - An approved written description of the terms and conditions of apprentices' employment, training and supervision under a sponsor's apprenticeship program for a specific apprenticeship occupation, in accordance with the Act, Regulations, Standards, and any additional State Board Apprenticeship Standards which apply. The Program Registration shall incorporate a written Schedule of Work Processes. (Regulation 16VAC20-21-50)
- g. **Virginia Apprenticeship Council (VAC)** - Advisory organization which provides guidance on regulations and policies. Members are appointed by the Governor. The U.S. Department of Labor's Office of Apprenticeship has granted VAC authority to issue Certificates of Completion upon completion of the program. (Regulation 16VAC20-21-20, VA Code §§40.1-117 & 40.1-118, Items 1, 3, 4, 5)
- h. **Virginia Department of Labor and Industry (DOLI)** - The agency which administers the Voluntary Apprenticeship Act and its related

regulations in Virginia. DOLI acts as the official agent of the VAC. (Regulation 16VAC20-21-20, VA Code §40.1-125)

- i. **Commissioner** - The Commissioner of the Virginia Department of Labor and Industry as defined by VA Code §40.1-2.

3. APPRENTICESHIP PROGRAMS

- a. **Program Approval** - Sponsors must have written notice of registration before establishing any Apprenticeship Agreements to employ and train individual apprentices. (Regulation 16VAC20-21-30, Items A, C, D)
- b. **Program Termination** - Programs may be canceled by sponsor request or de-registered by the DOLI. Canceled programs may be reinstated upon sponsor request, if they meet registration requirements. De-registered programs may be reinstated if the DOLI determines that there is adequate evidence that the program is being operated in accordance with the Act and Regulations. (Regulation 16VAC20-21-70 & 16VAC20-21-80)
- c. **Program Evaluation** - DOLI shall review and evaluate each sponsor's program as required. (Regulation 16VAC21-30, item H)

4. APPRENTICESHIP AGREEMENTS

- a. Each Apprenticeship Agreement is a contract between, and must be signed by, the apprentice (and guardian if apprentice is under 18 years of age) and the sponsor's authorized representative, and registered with the DOLI. (Regulation 16VAC20-21-70 item 1, VA Code §40.1-122)
- b. A signed Apprenticeship Agreement indicates that both apprentice (and guardian) and sponsor understand and agree to all apprenticeship requirements.
- c. To be valid, each Apprenticeship Agreement must:
 - i. Comply with Regulation 16VAC20-21-70, VA Code §40.1-121.
 - ii. Contain all required signatures. (Regulation 16VAC20-21-70 item 1, VA Code §40.1-121)
 - iii. Be approved by the DOLI. (Regulation 16VAC 20-21-30, VA Code §40.1-122)
 - iv. Be registered and filed by the sponsor. (Regulation 16VAC20-21-30, item C.1 & 2)
- d. All required signers must receive a copy of the signed Apprenticeship Agreement and Standards.

5. EQUAL EMPLOYMENT OPPORTUNITY

- a. Sponsors and potential sponsors must not discriminate (based on race, color, religion, national origin, sex or physical handicap, which is unrelated to the person's qualifications and ability to perform the job) in recruiting, selecting, employing or training apprentices. (Regulation 16VAC20-21-30 item B.2; and 16VAC20-21-50, item B.23)
- b. Sponsors must take affirmative action to provide equal opportunity in operating apprenticeship programs. Programs must operate as required under the Virginia State Plan, and they must comply with Title 29 of the Code of Federal Regulations, Part 30. (Regulation 16VAC 20-21-30, item B.2)

6. TERM OF APPRENTICESHIP

- a. The minimum term for any apprenticeship program shall be 2,000 hours of reasonably continuous employment, or if the Competency or Hybrid term is proposed, DOLI will review on a case by case basis and may approve if requirements are addressed. (Regulation 16VAC20-21-50, item B. 2.a.; VA Code §40.1-120)
- b. Employment must be supplemented by the amount of related instruction required in the occupation. A minimum of 144 hours of related instruction is required for each year of apprenticeship to be completed by the end of the term. (Regulation 16VAC20-21-50, item B.4.)
- c. When the apprentice is required to work overtime, these overtime hours WILL/WILL NOT be credited to the term of apprenticeship. (Regulation 16VAC20-21-50, item B.2.)

7. CREDIT FOR PREVIOUS EXPERIENCE

- a. An applicant for apprenticeship may be allowed credit on the term of apprenticeship documented for prior experience whether with the sponsor or elsewhere.
- b. The sponsor's Supervisor of Apprenticeship must review and approve the applicant's record of previous experience before such experience will be credited. (Regulation 16VAC20-21-50, Item B.14)

8. SUPERVISION OF APPRENTICES

- a. Each sponsor must designate a Supervisor of Apprenticeship. (Regulation 16VAC20-21-20)
- b. The Supervisor of Apprenticeship must assure that:
 - i. All programs are registered with the DOLI.
 - ii. All apprentices receive a company orientation that includes: Standards of Apprenticeship, any additional industry standards, company policies, safety rules and regulations.
 - iii. All apprentices receive instruction in safe and healthful working methods in each operation as it is encountered throughout the term of apprenticeship.
 - iv. All apprentices are adequately trained and supervised in all areas by qualified personnel. (Regulation 16VAC20-21-50, Item B.11)
 - v. Each apprentice's progress is reviewed and documented prior to moving to a new wage level. (Regulation 16VAC20-21-50, Items B.5, B.6)
 - vi. Credit for previous experience is granted when appropriate. (Regulation 16VAC20-21-50, Item B.14)
 - vii. Each apprentice is notified of related instruction requirements and the name and location of each approved related instruction provider. (Regulation 16VAC20-21-50, Item B.4)
 - viii. Related instruction Provider(s) is contacted to review each apprentice's educational progress before the expiration of each wage period. (Regulation 16VAC20-21-50, Item B.6)
 - ix. Records are prepared and filed at specified intervals of apprentice's aptitude, skill and progress. Submits prompt and complete written notification to DOLI of any change in apprentice status. (Regulation 16VAC20-21-30.E; 16VAC20-21-50, Item B.6.)
 - x. Any other duties needed to develop and maintain an effective apprenticeship program. (Regulation 16VAC20-21-50)

9. RESPONSIBILITIES OF APPRENTICES

- a. Apprentices are employees and have basic employee responsibilities. Each apprentice must make every effort to become a well-qualified journeyworker.
- b. Each apprentice must be on time for work, learn all work processes, complete all work assignments, and take initiative to ask appropriate questions.
- c. Each apprentice must be registered for related instruction, attend regularly and be on time.
- d. Each apprentice should review these Standards and the sponsor's Program Registration to ensure that he/she is trained and paid according to these documents.
- e. Each apprentice has the responsibility to consult with the Supervisor of Apprenticeship to assure that all accurate and appropriate records are updated and DOLI is notified promptly of any changes in status.
- f. Each apprentice must use appropriate conduct during related instruction process and on the job site.
- g. Each apprentice must obtain licensing applications following completion of the apprenticeship Program.

10. ON-THE-JOB TRAINING

- a. The apprentice shall be given instruction and work experience as established by industry practice and as listed in the work processes.

- b. The work experiences do not need to be in the precise order as listed in the work processes.
- c. The work processes must be recorded in the Program Registration.

11. RELATED INSTRUCTION

- a. Each apprentice shall receive related instruction and shall provide the Supervisor of Apprenticeship with evidence of satisfactory participation and progress following completion of each designated portion.
- b. A minimum of 144 hours of related instruction is recommended for each year of apprenticeship, to be completed during the full term. (Regulation 16VAC20-21-50, Item B.4; 16VAC20-21-70, Item 5.b.)
- c. The Apprenticeship Agreement can be suspended or canceled when an apprentice does not satisfactorily complete either the on-the-job training or related instruction. Exceptions may be allowed for sickness or injury. (Regulation 16VAC20-21-70, Item 6.b.(1)&(2))

12. INITIAL PROBATIONARY PERIOD

- a. Each apprentice must serve between 600 and 2,000 hours of the apprenticeship term as an initial probationary period. The specific number of hours is stated in each Program Registration. (Regulation 16VAC20-21-50, Items B.2 & B.10; 16VAC20-21-70, Item 6.a)
- b. During the probationary period cancellation of the Apprenticeship Agreement may be requested by the sponsor or the apprentice. Notice of such actions must be given to the DOLI. (Regulation 16VAC20-21-50, Item B.20-22; 16VAC20-21-50, Item B.2.b)
- c. Full credit will be given for the initial probationary period toward completion of the apprenticeship program. (Regulation 16VAC20-21-50, Item B.10)
- d. All apprentices registered under these Standards shall be subject to an initial probationary period of _____ hours of employment.

13. PERIODIC EVALUATION

The progress of each apprentice's job performance and related instruction shall be subject to a periodic review prior to the expiration of each wage period. Should a review reveal a lack of interest or ability on the part of the apprentice, the apprentice will be informed of the deficiency and may be placed on probation for a sufficient period to determine improvement or failure. At the end of the probationary period, if the apprentice has not shown acceptable improvement, the apprenticeship agreement may be suspended or canceled. The sponsor must promptly notify the apprentice and the DOLI in writing of any suspension or cancellation. (Regulation 16VAC20-21-50, Items B.8 & B.22; 16VAC 20-21-70, Item 6.b)

14. HOURS OF WORK

- a. Hours of work for apprentices shall be determined by the Sponsor and apprentice with full-time being the norm. Part-time schedules are permitted and must be recorded the same as for all other employees.
- b. Time spent at related instruction MAY OR MAY NOT be considered as hours of work. The sponsor's decision must be documented in the Program Registration. (Regulation 16VAC20-21-70, Item b.7)
- c. Sponsors shall not require apprentices to work hours that would interfere with attending related instruction except in emergencies.

15. APPRENTICE WAGES

- a. The term of each apprenticeship program shall be divided into periods, with wages that progressively increase as the apprentice progresses in skill and productivity. Wages will be established in accordance with federal and state wage laws. (Regulation 16VAC 20-21-50, Items B.5 & B.14; 16VAC20-21-70, Item 7; 16VAC20-21-50, Item C.1.(E))
- b. Wages are based on the basic rate paid to journeyworkers and must reflect any credit given for previous experience. Overtime shall be based on the same percentage as that paid to other hourly employees. (Regulation 16VAC20-21-50, Item B.5)



- c. The minimum wages paid all apprentices employed under these Standards must be recorded in the Program Registration. (16VAC20-21-60, Item B.5)
- d. Apprentices who are given credit for previous training or experience shall be paid the wage rate commensurate with the period to which such credit advances them. (Regulation 16VAC20-21-60, Items B.5 & B.14)

- c. Physical Capability _____
- d. Other _____
- e. See attached _____

*minimum permitted by law is 16 years of (whose employment is currently in compliance with all State and Federal laws)

16. TRANSFER, LAYOFF/REINSTATEMENT, SUSPENSION OR CANCELLATION

- a. **Transfer** - If a sponsor is no longer able to fulfill his obligation for training of an apprentice, the apprentice may be transferred or registered with credit for previous training to another sponsor. DOL must be notified in writing and must approve all transfers. (Regulation 16VAC20-21-30.E; 16VAC20-21-50, Item B.15; 16VAC20-21-60, Item B.)
- b. **Layoff/Reinstatement** - Apprentices may be laid-off in the commensurate ratio of apprentices to journeymen. Apprentices laid-off under these Standards shall be entitled to seniority privileges and shall be reinstated in the seniority standing before any new apprentices are registered. DOL must be notified in writing of all apprentices laid-off and/or reinstated.
- c. **Suspension and Cancellation** - Apprenticeship agreements may be suspended or canceled at any time for appropriate reason. The sponsor must notify DOL in writing within 45 days stating the reason for the suspension or cancellation. (Regulation 16 VAC 20-21-70, Item B.b. (1 & 2); 16VAC20-21-30, Item E; 16VAC20-21-60, Item B.20)

21. MODIFICATIONS

The sponsor must notify the DOL promptly in writing of any proposed program modifications and request approval from the DOL. Any program modifications shall not alter or affect apprenticeship agreements in effect at the time of modification without the consent of all parties affected. (Regulation 16VAC20-21-30, Item H.2, 16VAC20-21-60, Item B.20)

The apprenticeship program may be cancelled by DOL for due cause. The sponsor may withdraw his program by submitting a written request to the DOL. (Regulation 16VAC20-21-60, Item B.1)

17. CERTIFICATE OF COMPLETION

Upon the completion of the term of apprenticeship and having met the requirements of the program, the VAC shall be requested by the sponsor to prepare a Certificate of Completion, to be issued in the name of the apprentice who has successfully completed training and the term of apprenticeship. (Regulation 16VAC20-21-30, Item E; 16VAC20-21-60, Item B.17)

18. STUDENT APPRENTICES

- a. Student apprentices are defined as a high school student participating in Registered Apprenticeship
- b. Youth Registered Apprentices are defined as a high school student participating in Registered Apprenticeship where the related instruction is provided in large part by the Career and Technical Education division within the School division.
- c. All apprenticeships requirements and restrictions described in the Standards shall apply to student apprentices, except the following:
 - i. For high school students, a letter of permission from their principal is required;
 - ii. Student status must be maintained. If a student leaves school prior to graduation his/her student apprenticeship will be canceled;
 - iii. Work hours and related instruction requirements may be different for student apprentices than non-student apprentices.

19. NUMBER OF APPRENTICES TO BE TRAINED IN THE PROGRAM

The number of apprentices shall be determined by the adequacy of facilities, the need of journeymen in the community and reasonable assurance of employment in the occupation establishment upon completion of training. To ensure adequate training the ratio of apprentices to journeymen shall not exceed one (1) apprentice to _____ journeyworker(s). The default ratio is 1 apprentice to 1 journeyworker. A variance may be requested of the Director of Registered Apprenticeship and will be evaluated on a case by case basis. (Regulation 16VAC20-21-60, Items B.6 & B.9) All variances must also be approved by the Commissioner of the DOL.

20. ADDITIONAL SPONSOR APPRENTICE QUALIFICATIONS (optional)

- a. Age Minimum _____
- b. Education _____

