

# COMMONWEALTH OF VIRGINIA HIGHWAY/HEAVY CONTRACTING EXAMINATION

**Scope of Work:** Highway/Heavy Contractors (Abbr: H/H) means those individuals whose contracts include construction, repair, improvement, or demolition of the following: bridges; dams; drainage systems; foundations, parking lots; public transit systems; railroads; roads; runways; streets; structural signs & lights; and tanks. The functions carried out by these contractors include but are not limited to the following: building demolition, clearing; concrete work; excavating; grading; non-water well drilling; paving; pile driving; road marking; and steel erection. These contractors also install, maintain, or dismantle the following: (1) power systems for the generation and primary and secondary distribution of electric current ahead of the customer's meter; (2) pumping stations and treatment plants; (3) telephone, telegraph, or signal systems for public utilities; and (4) water, gas, and sewer connections to residential, commercial, and industrial sites, subject to local ordinances. This classification may also install backflow prevention devices incidental to work in this classification when the installer has received formal vocational training approved by the board that included instruction in the installation of backflow prevention devices.

H/H includes the following specialties and they are not required to be listed separately on your contractor license.

- Asphalt Paving and Sealcoating Contracting (PAV)
- Billboard/Sign Contracting (BSC)
- Concrete Contracting (CEM)
- Landscape Irrigation Contracting (ISC)
- Marine Facility Contracting (MCC)
- Vessel Construction Contracting (VCC)

# of Questions	Minimum Passing Score	Time Allowed
70	70% (49 correct)	180 Minutes

### CONTENT OUTLINE

Subject Area	# of Items
Road Construction	12
Erosion and Drainage Control	6
Steel Erection	5
Utility Connections	8
Tanks	6
Concrete Structures	9
Railway Construction	2
Welding	4
Piles	5
Runways	3
Backflow Prevention	2
Safety	8

### EXAMINATION REFERENCE MATERIAL

The following is a list of possible reference materials for the examination. The list is given to identify resources and does not constitute an endorsement by PSI or by the Virginia Department of Professional and Occupational Regulation.

The reference material listed below was used to prepare the questions for this examination. The examination may also contain questions based on trade knowledge, or general industry practices. You can use any edition of references and Code books as they become available.

However, for Code questions, the examination will be based only on the edition of the Code book that is listed.

NOTE: All examinations are open-book. You must bring your own references as they are not provided at the test site. No study guides are permitted.

No loose papers or unbound references are permitted. If you download a reference from the Internet, it must be spiral bound or hole-punched and placed in a binder, or stapled in the left-hand corner.

References may be highlighted, underlined, and/or indexed prior to the exam. Reference materials containing any writing will not be allowed into the examination. You may not write in reference materials during the examination session. A candidate caught writing in the references during the examination will have the references confiscated and will be reported to the Department.

References may be tabbed with permanent tabs only. NO REMOVABLE TABS are allowed.

The following list of tabs may be used. These items may be purchased at local office supply stores.

#### **Acceptable Tabs**

- Avery Swift Tabs Self-Adhesive Permanent Plastic Tabs
- Redi-Tag Self-Stick Permanent Adhesive Index Tabs

#### **Unacceptable Tabs**

- Post-It Index Flags
- Post-It Flags

The URL listed for each reference is generated from the most current searches. However, placement of material on websites may be modified resulting in some discrepancies. If you are unable to find the reference under the URL listed, it is recommended that you search online via a search engine (e.g., Google).

- *Code of Federal Regulations - 29 CFR Part 1926 (OSHA)*, with latest available amendments, 866-512-1800,  
[https://www.osha.gov/pls/oshaweb/owastand.disp\\_lay\\_standard\\_group?p\\_toc\\_level=1&p\\_part\\_number=1926](https://www.osha.gov/pls/oshaweb/owastand.disp_lay_standard_group?p_toc_level=1&p_part_number=1926)  
OR



Code of Federal Regulations - 29 CFR Part 1926  
Selections by PSI, with latest available  
amendments, 866-589-3088,  
[http://www.pSIONlinestore.com/search-  
results?q=29%20cfr%20part%201926%20selections%20](http://www.pSIONlinestore.com/search-results?q=29%20cfr%20part%201926%20selections%20)

- *Excavation and Grading Handbook*, Nick Capachi, 2006, 3<sup>rd</sup> edition, Craftsman Book Company, <https://www.amazon.com/EXCAVATION-GRADING-HANDBOOK-REVISED-Paperback/dp/B00IHUX1CO>
- *Construction Planning, Equipment, and Methods*, Robert L. Peurifoy, 8<sup>th</sup> edition, 2010, <https://www.amazon.com/Construction-Planning-Equipment-Methods-Peurifoy-ebook/dp/B005J0H4NC>
- *Pipe and Excavation Contracting*, Dave Roberts, 2011, Craftsman Book Company, (800) 829-8123, <http://www.amazon.com/Pipe-Excavation-Contracting-Revised-Roberts/dp/1572182660>
- *Hot-Mix Asphalt Paving Handbook*, 2000, Carl L. Monismith, Rita B. Leahy, John A. Epps, American Association of State Highway Transportation Officials, <http://store.asphaltpavement.org/index.php?productID=819>
- *Jacked Tunnel Design and Construction*, Marco D. Boscardin, 1999, American Society of Civil Engineers, <https://www.amazon.com/Jacked-Tunnel-Design-Construction-Massachusetts/dp/0784404062>
- *Storm Water Management for Construction Activities - Summary Guidance*, 1992, Environmental Protection Agency, <http://www.epa.gov/npdes/pubs/owm0307.pdf>
- *PVC Pipe - Design and Installation - AWWA Manual M23*, 2<sup>nd</sup> Edition, 2002, American Water Works Association, <http://www.awwa.org/portals/0/files/publications/documents/toc/M23ed2.pdf>
- *Modern Welding*, 11th Edition, 2013, Althouse, Turnquist, Bowditch, Goodheart-Willcox Company, (800) 323-0440, [https://www.amazon.com/Modern-Welding-Andrew-D-Althouse/dp/1605257958/ref=sr\\_1\\_1?hvadid=78134096379778&hvbm=be&hvdev=c&hvqmt=e&keywords=modern+welding+11th+edition+2013&qid=1559172353&sr=books&sr=1-1](https://www.amazon.com/Modern-Welding-Andrew-D-Althouse/dp/1605257958/ref=sr_1_1?hvadid=78134096379778&hvbm=be&hvdev=c&hvqmt=e&keywords=modern+welding+11th+edition+2013&qid=1559172353&sr=books&sr=1-1)
- *DIPRA Installation Guide for Ductile Iron Pipe*, 2007 (revised 2016), Ductile Iron Pipe Research Association, <file:///C:/Users/mchun/AppData/Local/Microsoft/Windows/INetCache/IE/6E0T2P30/Guidelines-DuctileIronPipeInstallGuide.pdf>
- *National Electrical Safety Code (NESC)*, 2012, Institute of Electrical and Electronics Engineers, [http://www.techstreet.com/standards/ieee-c2-2012?sid=msn&utm\\_source=bing&utm\\_medium=cpc&utm\\_campaign=psixams&utm\\_term=psixams&utm\\_content=psixams&utm\\_referrer=https://www.google.com/&product\\_id=1786726](http://www.techstreet.com/standards/ieee-c2-2012?sid=msn&utm_source=bing&utm_medium=cpc&utm_campaign=psixams&utm_term=psixams&utm_content=psixams&utm_referrer=https://www.google.com/&product_id=1786726)
- *Lineman's and Cableman's Handbook*, Shoemaker and Mack, 13th edition (2017) edition, <https://www.amazon.com/dp/0071850031>
- *Design and Construction of Large, Welded, Low-Pressure Storage Tanks - API Standard 620*, 2008, 11th edition, OR *Design and Construction of Large, Welded, Low-Pressure Storage Tanks - API Standard 620*, 2013, 12th edition with Addendums through April 2018, American Petroleum Institute, [https://www.techstreet.com/standards/api-std-620?product\\_id=1534905](https://www.techstreet.com/standards/api-std-620?product_id=1534905)
- *Design and Control of Concrete Mixtures*, 15<sup>th</sup> Ed, 2011, Steven H. Kosmatka, William C. Panarese, Portland Cement Association, [https://www.amazon.com/Design-Control-Concrete-Mixtures-Wilson/dp/0893122726/186-2954833-3302338?ie=UTF8&\\*Version\\*=1&\\*entries\\*=0](https://www.amazon.com/Design-Control-Concrete-Mixtures-Wilson/dp/0893122726/186-2954833-3302338?ie=UTF8&*Version*=1&*entries*=0)
- *Placing Reinforcing Bars*, Recommended Practices, 2011, 9<sup>th</sup> Edition, Concrete Reinforcing Steel Institute, <https://netforum.avectra.com>
- *Formwork for Concrete*, 2005, 7th Edition, M.K. Hurd American Concrete Institute, <http://www.amazon.com/Formwork-Concrete-7th-M-Hurd/dp/0870311778>
- *The Practical Guide to Railway Engineering*, 2003, 2<sup>nd</sup> edition, American Railway Engineering and Maintenance of Way Association (AREMA), <https://www.amazon.com/Practical-Guide-Railway-Engineering-Second/dp/B0063T76N6>
- *Standards for Specifying Construction of Airports (AC 150/5370-10F)*, 2011, FAA Advisory Circular, Federal Aviation Administration, [http://www.faa.gov/documentLibrary/media/Advisory\\_Circular/150\\_5370\\_10F.pdf](http://www.faa.gov/documentLibrary/media/Advisory_Circular/150_5370_10F.pdf)
- *International Plumbing Code*, 2012 Edition, International Code, Council, <http://shop.iccsafe.org/2012-international-plumbing-code-ipc.html>
- *Manual of Cross-Connection Control*, 2009, 10<sup>th</sup> edition, USC - Foundation for Cross-Connection Control and Hydraulic Research, <http://www.uscfoundationstore.com/10th-Edition-Manual-of-Cross-Connection-Control-P44.aspx>
- *Handbook of Rigging: For Construction and Industrial Operations*, W.E. Rosnagel, 2009, 5<sup>th</sup> edition, <http://www.mhprofessional.com/product.php?isbn=0071493018>
- *Handling and Erection of Steel Joists and Joist Girders*, 3rd Edition, Steel Joist Institute, (843) 626-2008, <https://www.amazon.com/Handling-Erection-Steel-Joist-Girders/dp/B002DGNQUA>

