

ORDINANCE NO. 5150

AN ORDINANCE to amend and reordain Section 4-2-21 (CHANGES IN VIRGINIA STATEWIDE FIRE PREVENTION CODE) of Article B (FIRE PREVENTION) of Chapter 2 (FIRE PROTECTION AND PREVENTION) of Title 4 (PUBLIC SAFETY) of the Code of the City of Alexandria, Virginia, 1981, as amended.

THE CITY COUNCIL OF ALEXANDRIA HEREBY ORDAINS:

Section 1. That Section 4-2-21 of the Code of the City of Alexandria, Virginia, 1981, as amended, be, and the same hereby is amended and reordained to read as follows:

The Virginia Statewide Fire Prevention Code adopted by the city in section 4-2-12, is deleted, modified, or amended in the following respects:

101.1 Title. The regulations set forth herein, as modified and amended in Section 4-2-21 of The Code of the City of Alexandria, together with the additional regulations in article B of chapter 2, title 4 of that code, shall be known as the Fire Prevention Code of the City of Alexandria, Virginia, and are herein referred to as such or as "the code".

103.4. International Fire Code Appendices and City Appendices. Appendices A, B, C, D, H, I, and J of the International Fire Code, 2012 Edition and the Fire Prevention Code of the City of Alexandria 2009 Edition are deleted.

Appendices A, B, C, and D are replaced in both codes as modified within this document and are hereby incorporated as fully enforceable provisions of this code.

TABLE 107.2 OPERATIONAL PERMIT REQUIREMENTS

Description	Code Section	Permit Fee
Aerosol products. Aggregate quantity of Level 2 or Level 3 aerosol products in excess of 500 pounds (227 kg) net weight when manufacturing, storing or handling.	5101.2	\$200.00
Amusement buildings.	401.10	\$200.00
Asphalt Kettles.	303.10	\$143.00
Assembly Uses,	401.11	

Educational Uses.		401.9	
Up to 100 persons (A)			\$114.00
Occupancy 100 to 150 persons (B)			\$228.00
Occupancy over 150 persons (C)			\$342.00
Aviation facilities.		2001.3	\$143.00
Battery systems. Stationary lead-acid battery systems having a liquid capacity of more than 50 gallons (189L).		608.1.1	\$171.00
Carnivals and fairs.		403.11.2.1	\$314.00
Cellulose nitrate film. Storage, handling or use in any assembly or educational occupancy (Group A and E)		306.3	\$143.00
Combustible dust-producing operations.		2201.2	\$200.00
Combustible fibers. Storage and handling of combustible fibers in quantities greater than 100 cubic feet (2.8 m ²) Exception: Not required for agricultural storage.		5201.3	\$200.00
Compressed gas. Storage, use or handling at normal temperature and pressure (NTP) of compressed gases in excess of the amounts listed below. Exception: Vehicles equipped for and using compressed gas as a fuel for propelling the vehicle.		5301.2	\$171.00
PERMITS AMOUNTS FOR COMPRESSED GASES			
Type of Gas	Amount - CU FT		
Corrosive	200		
Flammable (except cryogenic fluids and liquefied petroleum gases)	200		
Highly toxic	Any Amount		

Inert, simple asphyxiant and non-flammable gases		6000		
Oxidizing (including oxygen)		504		
Pyrophoric		Any Amount		
Toxic		Any Amount		
For SI: 1 cubic foot = 0.02832 m ³				
Covered and open mall buildings			403.10.1.7	\$570.00
Corrosives. Storage, use, handling:			5401.2	\$143.00
• Gases	200 cubic feet at (NTP)			
• Liquids	55 gallons			
• Solid	1,000 pounds			
Cryogenic fluids. Produce, store, transport on site, use, handle, or dispense.			5501.2	\$200.00
Type	Inside Bldg (gal)	Outside Bldg (gal)		
Flammable	More than 1 gallon	60		
Inert	60	500		
Oxidizing - (includes oxygen)	10	50		
Physical or health not indicated above	Any Amount	Any Amount		
Exception: Vehicles equipped for and using cryogenic fluids as a fuel for propelling the vehicle or for refrigerating the lading				
Cutting and Welding. Sweating pipes and hot works			3501.2	

<ul style="list-style-type: none"> • Per single occurrence or fixed based operation 		\$154.00
<ul style="list-style-type: none"> • Annual permit (multiple job locations in the City) 		\$314.00
Dry cleaning plants.	2101.2	\$171.00
Indoor exhibits, trade shows, and special amusement events.	401.10	\$171.00
Explosives and fireworks. An operational permit is required for the manufacture, possession, storage, handling, sale or other disposition, transportation or use of any quantity of explosive, explosive material, fireworks, or pyrotechnic special effects within the scope of Chapter 56, or to operate a terminal for handling explosive materials, or to deliver or receive delivery of explosives or explosive materials from a carrier between sunset and sunrise. Note: Valid for 6 months period only	5601.2	\$285.00
		\$285.00
	5607.1.1	
Explosive Vehicle Inspection. (Valid for 6 months only)	5610.6.1.2	\$228.00
Fire hydrants and valves. Operate or use any fire hydrants or valves used for fire suppression service.	507.5.7	\$143.00
Flammable and combustible liquids.	5701.4	\$143.00
1. To use or operate a pipeline for the transportation with facilities or flammable or combustible liquids. This requirement shall not apply to the offsite transportation (DOTn) nor does it apply to piping systems.		
2. To store, handle or use of Class I liquids in excess of 5 gallons (19L) in a building or in excess of 10 gallons (37.9L) outside of a building, except that a permit is not required for the following:		
2.1 The storage or use of Class I liquids in the fuel tanks of a motor vehicle, aircraft, motorboat, mobile power plant or mobile heating plant unless such storage, in the opinion of the fire official would cause an unsafe condition.		
2.2 The storage or use of paints, oils, varnishes or similar flammable mixtures when such liquids are stored for maintenance, painting or similar purposes for a period of not more than 30 days.		

3. To store, handle or use Class II or Class IIIA liquids in excess of 25 gallons (95L) in a building or in excess of 60 gallons (227L) outside a building, except for fuel oil used in connection with oil-burning equipment.		
4. To remove Class I or Class II liquids from an underground storage tank used for fueling motor vehicles by means other than the approved, stationary on-site pumps normally used for dispensing purposes.		
5. To operate tank vehicles, equipment, tanks, plants, terminals, wells, fuel-dispensing stations, refineries, distilleries and similar facilities where flammable and combustible liquids are produced, processed, transported, stored, dispensed or used.		
6. To install, alter, remove, abandon, place temporarily out of service (for more than 90 days) or otherwise dispose of an underground, protected above-ground or above-ground flammable or combustible liquid tank.		
7. To change the type of contents stored in a flammable or combustible liquid tank to a material which poses a greater hazard than that for which the tank was designed and constructed.		
8. To manufacture, process, blend, or refine flammable or combustible liquids.		
Flammable Gases.	5801.2	\$143.00
Flammable Solids.	5901.2	\$143.00
Flammable Finish Application.	2401.3	\$143.00
Floor Surfacing and Finishing. Using Class I or Class II liquids exceeding 350 square feet (33 m2).		\$143.00
	2410.1.1	
Fruit and crop ripening.	2501.2	\$143.00
Fumigation and thermal insecticidal fogging.	2601.2	\$143.00
Hazardous materials.	5001.5	\$285.00

PERMIT AMOUNTS FOR HAZARDOUS MATERIALS			
TYPE OF MATERIAL	AMOUNT		
• Combustible Liquids	See flammable and combustible liquids		
• Corrosive material			
Gases	See compressed gases		
Liquids	55 gallons		
Solids	1,000 pounds		
• Explosive materials	See explosives and fireworks		
• Flammable materials			
Gases	See compressed gases		
Liquids	See flammable and combustible liquids		
Solids	100 pounds		
• Highly Toxic materials			
Gases	See compressed gases		
Liquids	Any Amount		
Solids	Any Amount		
• Oxidizing materials			
Gases	See compressed gases		
Liquids			

Class 4	Any Amount		
Class 3	1 gallon		
Class 2	10 gallons		
Class 1	55 gallons		
Solids			
Class 4	Any Amount		
Class 3	10 pounds		
Class 2	100 pounds		
Class 1	500 pounds		
• Organic peroxides			
Liquids			
Class I	Any Amount		
Class II	Any Amount		
Class III	1 Gallon		
Class IV	2 Gallons		
Class V	No permit required		
Solids			
Class I	Any Amount		
Class II	Any Amount		
Class III	10 Pounds		

Class IV	20 Pounds		
Class V	No permit required		
• Pyrophoric Materials			
Gases	See compressed gases		
Liquids	Any Amount		
Solids	Any Amount		
• Toxic Materials			
Gases	See compressed gases		
Liquids	10 Gallons		
Solids	100 Pounds		
• Unstable (reactive) Materials			
Liquids			
Class 4	Any Amount		
Class 3	Any Amount		
Class 2	5 Gallons		
Class 1	10 Gallons		
Solids			
Class 4	Any Amount		
Class 3	Any Amount		
Class 2	50 pounds		

Class 1	100 pounds		
• Water-reactive Materials			
Liquids			
Class 3	Any Amount		
Class 2	5 Gallons		
Class 1	55 Gallons		
Solids			
Class 3	Any Amount		
Class 2	50 pounds		
Class 1	500 pounds		
For SI: 1 gallon = 3.785 L, 1 pound = 0.454 kg.			
Note:			
a. 20 gallons when table 5003.1.1(1) note K applies and hazard identification signs in accordance with Section 5003.5 are provided for quantities of 20 gallons or less.			
b. 200 pounds when table 5003.1.1(1) note K applies and hazard identification signs in accordance with Section 5003.5 are provided for quantities of 200 gallons or less.			
Heliports and Helistops.		2007.1.1	\$143.00
Highly Toxic Materials.		6001.2	\$285.00
High-piled storage. Use of a building or portion exceeding 500 square feet (46 m ²).		3201.2	\$200.00
Indoor display of vehicles or equipment.		314.4.1	\$143.00

Indoor Pyrotechnics.	5608.1.1	\$285.00
Industrial ovens.	3001.2	\$200.00
Lumber yards and woodworking plants. Storage or processing exceeding 100,000 board feet (8,333 ft ³) (236m ³)	2801.2	\$200.00
Liquid or gas fueled vehicles in assembly buildings.	6103.2.2.1	\$143.00
LP Gas. Storage and use inside or outside of any building.	6101.2	\$143.00
Exception:		
1. Individual containers with 500 gallons (1893 L) water capacity or less serving occupancies in Use Group R-3.		
2. Operation of cargo tankers that transport LP gas.		
Magnesium. Melt, cast, heat treat or grind more than 10 pounds (4.54 kg).	5906.1.1	\$143.00
Miscellaneous combustible storage. Store in any building or upon any premises in excess of 2,500 cubic feet (71 m ³) gross volume of combustible empty packing cases, boxes, barrels or similar containers, rubber tires, rubber cork or similar combustible material.	315.2	\$200.00
Open burning.	307.2	\$143.00
Open burning - Charitable organizations.	307.2.1.1	\$11.00
Open flames	308.2	\$143.00
Examples of open flames include, but not limited to, all heat producing appliances, torches for removing paint, torches for sweating pipe, sterno utilized for warming food, BBQ grills, and aerial lanterns.	308.3.3	\$143.00
Organic coatings. Manufacturing operation producing more than 1 gallon (4 L) of an organic coating in one day.	2901.2	\$143.00
Organic peroxides.	6201.2	\$200.00

Oxidizers.	6301.2	\$200.00
Portable Food Vending Vehicles	321.4	\$171.00
Food vendors preparing food inside vehicles that utilize LPG, fuel tanks, open flames, heating devices, at stationary locations.		
Note: All inspections will be coordinated with the Health Department		
Pyrophoric materials.	6401.2	\$143.00
Pyroxylin plastics. Storage and handling of more than 25 pounds (11 kg) of cellulose nitrate (pyroxylin) plastic and for the assembly or manufacture of articles involving pyroxylin plastics.	6501.2	\$200.00
Repair Garages, Service Stations and Motor Fuel Dispensing Facilities	2301.2	\$200.00
Semiconductor Fabrication Facilities - HPM Facilities	2701.5	\$285.00
Special Assembly and Events.	403.11.2.1	\$285.00
See Alexandria Special Events policy for additional costs associated with additional staff.		
Special Assembly and Events - Food Vendors.	403.11.2.4.1	\$171.00
Food vendors preparing food that utilize LPG, fuel tanks, open flames, heating device, tents or a combination thereof as part of the special event approved by the fire official.		
Note: All inspections will be coordinated through the fire marshal's office.		
Spraying and Dipping of Flammable Finishes	2401.3	\$200.00
Exterior spraying areas	2404.10.1	\$200.00
Storage of scrap tires and tire by-products. Establish, conduct or maintain storage of scrap tires and tire by-products exceeding 2,500 cubic feet (71 m ³) of total volume of scrap tires and for indoor storage of tires and tire by-products.	3401.2	\$200.00

Temporary membrane structures, tents and canopies.	3103.4	\$171.00
Membrane structures, tents and canopies that are 200 square feet or greater.		
Note: An inspection report shall be provided to the fire official identifying structural stability, fabric compliance, and anchoring to prevent movement.		
Tire rebuilding plants.	3403.1.1	\$285.00
Unstable (reactive) materials.	6601.2	\$285.00
Waste material and junk yards.	319.2	\$228.00
Water reactive materials.	6701.2	\$250.00
Wood products. Store chips, hogged material, lumber or plywood in excess of 200 cubic feet (6 m ³)	2801.2	\$200.00

Fire Protection and Detection Testing and Retesting Fees	Code Section	Permit Fee	Hourly Fee / Inspector
Fire Prevention Permit (FPP) Initial Inspections		\$200.00 \$210.00	N/A
Re-Inspections Resulting From Non-Compliance	Res 2550	N/A	\$125
Testing and Re-inspection of Existing Fire Protection Systems (per each Inspector)	901.6.4 - 901.6.19	N/A	\$125
Cancelation of scheduled test	Res 2550	N/A	\$125
Private Hydrant Inspection	507.5.7	N/A	\$125
Faulty Fire Protection Systems	Res 2550	N/A	\$125
Child Day Care			
(Note this is an inspection fee only and no permit is issued).			
<ul style="list-style-type: none"> When requested by Department of Human Services for exempt facilities. 		\$35	N/A
<ul style="list-style-type: none"> When required for State licensing inspection/approval. 		\$75	N/A

Note: The permit fees for each item set forth in Table 107.2, Operational Permit Requirements may be amended by the fire official as approved by City Council.

107.2.1 Reference to permits in other chapters. Where there is a reference to operational permits, fire prevention permits, or other permits in any chapter of the Virginia Statewide Fire Prevention Code or the Fire Prevention Code of the City of Alexandria, Virginia amendments thereof, unless specifically stated to the contrary, the provisions of Table 107.2 shall apply when determining if a permit is required and the quantity necessary (if regulated) to require the permit.

107.15 Non-refundable fees. All required operational permit fees identified in Table 107.2 are non-refundable once the required inspection is completed.

108.3.5.1 Access to permit premises. Any person or business required by Table 107.2 to have a permit(s) on premises shall make the necessary keys, any manufacturers material safety data sheets related to products regulated by the permit(s), location of the operation subject to permit(s) within the premises, emergency personnel information and other pertinent information relating to the permitted activity available to fire department personnel by use of an approved locking box on the exterior of the building.

110.7 Imminent danger or threat to human health or safety or to property. If the fire official determines that any violation creates an imminent danger or threat to human health or safety or to property, the fire official may forthwith correct or abate such violation, and request that the city attorney institute appropriate legal proceedings to recover the full cost of such response from the property owner, tenant or other responsible party.

202 Special Assembly (definition added to existing list). A place of assembly or other area where people congregate to witness a display, exhibition, performance or event that includes but is not limited to sporting events, fairs, trade shows, carnivals, exhibits, special amusement events, and outdoor events that present special hazards as identified by the fire official.

301.2 Permits. Permits shall be required as set forth in Table 107.2 for the activities or uses regulated by Sections 303, 306, 307, 308, 314, 315, 319, and 321.

303.10 Permits. Permits shall be obtained from the fire official in accordance with Table 107.2.

303.10.1 Safety Plan. Where required by the fire official, a fire safety plan, emergency procedures, and employee training programs for roof installation, repair, and other related operations shall be approved by the fire official prior to operations.

304.3.2.1 Secondary containment. All cooking oil containers exceeding 5.88 cubic feet (44 gallons) shall be provided with approved secondary containment.

306.3 Permits. Permits shall be obtained from the fire official in accordance with Table 107.2.

307.1 General. A person shall not cause or allow open burning unless approved in accordance with this code and the air pollution control code (chapter 1 of title 11 of the City Code) of the city. No person shall kindle, or authorize to be kindled or maintain any fire in such a manner that it constitutes a danger to public health and safety as determined by the fire official.

Exception: Approved outdoor live fire-training performed by the Alexandria Fire Department.

307.1.1 Prohibited open burning. Open burning shall be prohibited when atmospheric conditions or local circumstances make such fires hazardous as determined by the fire official.

307.2 Permits. Permits shall be obtained from the fire official in accordance with Table 107.2.

307.2.1.1 Permits. Charitable organizations shall obtain permits for open burning from the fire official in accordance with Table 107.2.

308.2 Permits. Permits shall be obtained from the fire official in accordance with Table 107.2 (1) if a torch or open flame-producing device is used to remove paint from a structure; (2) if an open flame, fire or burning is used in connection with Group A or E occupancies; (3) if the use or operation of torches and other devices, machines or processes are liable to start or cause fire in or upon wildfire risk areas; or (4) if a torch or open flame-producing device is used for sweating or soldering pipe.

308.3.3 Permits required. Permits shall be obtained from the fire official in accordance with Table 107.2 prior to engaging in any open flame, fire, or burning activities.

314.4.1 Permit Required. A permit shall be obtained from the fire official in accordance with Table 107.2.

315.2 Permits. Permits shall be obtained from the fire official in accordance with Table 107.2.

319.0 Waste Materials and Junk Yards.

319.1 General. No person making, using, storing, having charge of or having under his control in a building or on any vacant lot, alley, parking lot, open space or property any combustible excelsior, rubbish, sacks, bags, litter, hay, straw or other combustible waste material shall fail at the close of each day to remove all such material which is not compactly baled and/or stacked in an orderly manner, from the building or on any vacant lot, alley, parking lot, open space or property or store it in suitable vaults or in metal-lined and covered receptacles or bins. The fire official shall require suitable baling equipment to be installed in stores, apartment buildings, factories and other buildings where accumulations of paper and waste material are not removed at least every second day.

319.2 Permits. Permits shall be obtained from the fire official in accordance with Table 107.2 for the operation of waste material facilities, junkyards or any facility where 2500 cubic feet of material is stored.

320.0 Noxious, Flammable or Combustible vapors.

320.1 General. This section shall apply to any process or operation which produces flammable, combustible or noxious fumes or vapors, other than during the regular course of processes or operations normally conducted at the premises.

320.2 Ventilation. All such processes or operations shall have sufficient natural or supplied ventilation to prevent the migration of such fumes or vapors within the structure. Such processes or operations shall be conducted at times when the building has the fewest number of occupants.

320.3 Ignition sources. No such process or operation shall be conducted prior to assuring that all potential ignition sources have been identified and extinguished.

320.4 Alarm and sprinkler systems. If the potential exists to activate an alarm system by conducting such a process or operation, the alarm system shall be disabled and a fire watch in accordance with the requirements of Chapter 9 section 901.7 in this code shall be maintained by a person other than the person conducting the process or operation. The person maintaining the fire watch shall have the capability of contacting the Fire Department without having to reactivate the alarm system. No disabling of the alarm system shall be permitted, without prior notification to the Alexandria Department of Emergency Communications. Any protective measures taken to protect either the fire alarm or sprinkler systems at the premises, such as covering detectors or taping sprinkler heads, shall be reported to the communication section of the fire department, prior to such measures being taken. At the completion of the process or operation, all such systems shall be fully restored to function and the fire department shall be so notified.

320.5 Fire Department notification. Any person conducting such process or operation shall notify the Alexandria Department of Emergency Communications of the time, date and place at which such process or operation will be conducted at least 24 hours prior to commencement. Such notice is required even if a permit has previously been obtained for the process or operation.

320.6 Occupant notification. The owner, tenant, property manager or other person responsible for causing such process or operation to be conducted shall give reasonable notice to occupants of the premises of the type of process, date and time of occurrence and of the potential for the production of flammable, combustible or noxious fumes or vapors.

321.0 Portable Food Vending Vehicles.

321.1 Food Vending Vehicles Producing Grease Laden Vapors. Vehicles containing commercial cooking operations that produce grease laden vapors shall comply with Section 609 of the Virginia Statewide Fire Prevention Code when stationary and functioning as a fixed stationary facility. Vehicles containing commercial cooking operations that are in transit shall be governed by the Department of Transportation (DOT) when mobile.

321.2 Food vending Vehicles Containing Fixed Fire Protection Systems. Vehicles containing commercial cooking exhaust fire protection systems shall comply with Sections 904.11 through 904.11.6 of the Virginia Statewide Fire Prevention Code when stationary and functioning as a fixed stationary facility. Vehicles containing commercial cooking exhaust fire protection systems shall be governed by the Department of Transportation (DOT) when mobile.

321.3 Food Vending Vehicles Containing Hazardous Materials. Vehicles containing hazardous materials shall comply with Chapters 50, 57, 58, and 61 of this code when stationary and functioning as a fixed stationary facility. Vehicles containing hazardous materials that are in transit shall be governed by the Department of Transportation (DOT) when mobile.

321.4 Permits. Permits shall be obtained from the fire official in accordance with Table 107.2.

401.9 Permits. Permits shall be obtained from the fire official for all places of education in accordance with Table 107.2.

401.10 Permits. A permit shall be obtained from the fire official for all indoor exhibits, trade shows, and special amusement buildings and areas in accordance with Table 107.2.

401.11 Permits. A permit shall be obtained from the fire official for the utilization of a space or structure for the purpose of assembly in accordance with Table 107.2.

403.1.2 Submission of Safety plan. A safety plan outlining the event shall be submitted to the fire official 30 days prior to the event start date. The safety plan shall include a site map identifying locations of fire lanes, apparatus access points, food vendors, amusement rides, tents, hazardous materials, hydrants, citizen assembly points and emergency evacuation shelters.

403.1.3 Emergency coordinators. The event coordinator shall provide the fire official with on-site and emergency contact telephone numbers for at least five event coordinators.

403.1.4 Outdoor food handling. All deep fat fryers, woks utilized for deep fat frying or similar cooking devices using hot oil or grease, or producing grease laden vapors, shall be in a mobile unit or trailer with a vented hood and an approved fire suppression system.

403.4.2 Plan Approval Group E. Fire evacuation plans for all educational occupancies shall be submitted to the fire official for review and approval at least 30 days prior to the start of each school session, unless otherwise approved by the fire official.

403.10.1 Covered mall buildings. Covered and open mall buildings shall comply with the requirements of Sections 403.10.1.1 through 403.10.1.7.

403.10.1.7 Permit required. A permit shall be obtained from the fire official in accordance with Table 107.2.

403.11.2.1 Permits. A permit shall be obtained from the fire official for special outdoor assembly events, carnivals, and fairs in accordance with Table 107.2.

403.11.2.2 Submission of Safety Plan. A safety plan outlining the event shall be submitted to the fire official 30 days prior to the event start date. The safety plan shall include a site map identifying locations of fire lanes, apparatus access points, food vendors, amusement rides, tents, hazardous materials, hydrants, citizen assembly points, and emergency evacuation shelters.

403.11.2.3 Emergency coordinators. The event coordinator shall provide the fire official with on-site and emergency contact telephone numbers for at least five event coordinators.

403.11.2.4 Outdoor food handling. All deep fat fryers, woks utilized for deep fat frying, or similar cooking devices using hot oil or grease that produce grease-laden vapors shall be in a mobile unit or trailer with a vented hood and an approved fire suppression system.

403.11.2.4.1 Permits. Food vendors preparing food that utilize LPG, fuel tanks, open flames, heating devices, tents or a combination thereof shall obtain Operation Permits from the fire official in accordance with Table 107.2.

Table 405.2

e. In those buildings equipped with "areas of rescue assistance" or "horizontal exits", evacuation to such areas by persons designated to use such areas, shall be deemed to comply with the requirements of this section.

503.1 Emergency access roadways. Emergency vehicle access shall be installed and maintained in accordance with this section and Appendix D, Emergency Vehicle Access.

503.1.4 Temporary Emergency Vehicle Easements. The fire official is authorized to designate and identify temporary emergency vehicle easements during emergency conditions to ensure access of fire department equipment and personnel.

503.2 Signs and markings. The property owner or designee shall supply, install and maintain signs and other markings to designate and identify emergency vehicle easements as directed by the fire official. The signs shall identify the starting point, continuation and end point for all emergency vehicle easements.

503.3 Sign Specifications. Emergency Vehicle Easement signs shall conform to the following standards, and shall be installed in accordance with the requirements of Appendix D, Emergency Vehicle Easements.

503.4 Obstruction of fire apparatus access roads. Fire apparatus access roads and emergency vehicle easements shall not be obstructed in any manner, including the parking of vehicles. The minimum widths and clearances established in Appendix D, Emergency Vehicle Easements shall be maintained at all times.

503.6.1 Security Gate Override. All newly installed security gates that restrict automatic operation by the fire department and require special tools or knowledge to override shall be fitted with two override functions including a yelp siren sensor and a manual key override (Knox®; item number 3501) as approved by the fire official.

506.1 Key Box. Owners of buildings in which fire alarm or fire suppression systems are installed after June 14, 1997, shall provide a key box to the satisfaction of the fire official. Keys shall be placed in the key box to allow the fire department access to investigate alarms of fire reported from the building. This key box shall be of a type approved by the fire official and shall be located on

the exterior of the building, within 5 feet of the main entrance and other entrances as determined by the fire official or designee. The key box shall not be more than 5 feet or less than 4 feet above grade. The types of key boxes and the number of key sets placed in boxes shall be determined by the fire official or designee. Key boxes shall be of sufficient size to handle the number of key sets necessary to permit the fire department to operate during an emergency. Keys shall be labeled and coded as follows:

1. Master Key (White)
2. Main Entrance (Green)
3. Any additional entrance or exit points (Yellow)
4. Stairwell doors that are locked to prevent entry back on to a floor if an automatic override is not provided (Yellow)
5. Roof (Yellow)
6. Fire Control Room (Red)
7. Fire Alarm Reset (Red)
8. Sprinkler control pad lock(s) (Red)
9. Sprinkler Room (Red)
10. Elevator Firemen's Service (Red)
11. Elevator Machine Room (Blue)
12. Storage Room(s) (Orange)
13. Laundry Room(s) (Brown)
14. Mechanical Room(s) (Brown)
15. Trash Room(s) (Brown)
16. Electrical Room(s) (Purple)
17. Apartment Master (Black)

507.3 Fire flow. Fire flow requirements for buildings or portions of buildings and facilities shall be determined in accordance with Appendix B, Fire Flow Requirements for Buildings.

507.3.1 Reduction for fire sprinkler system installation. Percentage reductions in the calculated needed fire flow may be applied at the discretion of the fire official or designee for the following types of systems:

1. NFPA 13 Systems - 50%
2. NFPA 13R Systems - 33%
3. NFPA 13D Systems - 25%

507.5.1 Where required. Fire hydrants shall be installed as required by Appendix C, Fire Hydrant and Fire Main Requirements.

507.5.7 Permits. Permits shall be obtained from the fire official in accordance with Table 107.2 for all private and public fire hydrants to operate or use fire hydrants or valves used for fire suppression service. All private fire hydrant use shall be coordinated with the property owner and the fire official.

Exception: A permit is not required for authorized employees of the City of Alexandria, the Virginia American Water Company or their designees that manage the water system, or the Fire Department to use or operate fire hydrants or valves.

508.1.5 Required Features.

19. All buildings that have a fire control room shall equip that room with an operations manual. The fire official shall review and approve the contents of the manual.

511 Emergency Information

511.1 Emergency Building Contact Information. Commercial building owners and or tenants shall provide the Alexandria Department of Emergency Communications with a minimum of three contact names and phone numbers for after-hours emergency contact.

Exception: Requirements for emergency contact information shall not apply to single family homes or occupants in dwelling units.

608.1.1 Permits. Permits shall be obtained from the fire official in accordance with Table 107.2.

609.3.3.4 Documentation Alternatives. Contractors and service technicians shall install approval stickers on the exterior of the kitchen exhaust hood and each clean-out opening during the required inspections that identifies the date cleaned, the next due cleaning date, non-accessible areas, and the service technician's name and company affiliation. Fire protection service technicians shall attach an inspection tag to the manual pull station and product cylinder identifying the service date, the next required service date, and the technician's name and company name.

805.4 Use Group A and R-2 college and university dormitories. The requirements of sections 805.4.1 through 805.4.2.3 shall apply to assembly areas, and college and university dormitories classified in Group R-2, including decks, porches, and balconies.

805.4.1 Upholstered furniture. New and existing upholstered furniture shall meet the requirements of sections 805.4.1.1 through 805.4.1.3.

901.6.2 Test records. A completed written record of all tests and inspections required under this chapter shall be maintained on the premises by the owner or occupant responsible for said premises and a copy of any such record shall be provided to the fire official after the completion of any test or inspection if requested. Accurate logs shall be maintained, indicating the number, location and type of device tested. Any defect, modification or repair shall be logged, and the log shall be made available to the fire official. All records of system inspections, tests and maintenance required by the referenced standards shall be maintained on the premises for a minimum of 5 years and made available to the fire official upon request.

901.6.3 Test responsibility and notification. The fire official shall not be responsible for any damages incurred during any test required under the provisions of this chapter. Any test required under the provisions of this chapter shall be performed in the presence of the fire official, unless such requirement is waived by the fire official. Any such test shall be scheduled at the convenience of the owner or occupant responsible for said premises and the fire official.

901.6.4 Periodic testing, inspection and maintenance. All water-based extinguishing systems including fire sprinkler, water mist, water-spray, and standpipe systems shall be periodically inspected, tested, and maintained in accordance with the requirements of NFPA 25 listed in Chapter 80 of this code. Any required inspections and tests shall be performed in the presence of the fire official, unless such requirement is waived by the fire official. Fees for the attendance of the fire official shall be charged in accordance with the fee schedule of the Fire Prevention and Life Safety Section of the Alexandria Fire Department.

901.6.5 Periodic testing, inspection and maintenance. All foam-extinguishing systems shall be periodically inspected tested, and maintained in accordance with NFPA 11, NFPA 16, and NFPA 25 listed in Chapter 80 of this code and Section 904.7 through 904.7.1. Any required inspections and tests shall be performed in the presence of the fire official unless such requirement is waived by the fire official. Fees for the attendance of the fire official shall be charged in accordance with the fee schedule of the Fire Prevention and Life Safety Section of the Alexandria Fire Department.

901.6.6 Periodic testing, inspection and maintenance. All fire suppression systems including those listed in Sections 901.6.7 through 901.6.11 shall be periodically inspected, tested, and maintained in accordance with the requirements and standards listed in Chapter 80 of this code. Any required inspections and tests shall be performed in the presence of the fire official unless such requirement is waived by the fire official. Fees for the attendance of the fire official shall be

charged in accordance with the fee schedule of the Fire Prevention and Life Safety Section of the Alexandria Fire Department.

901.6.7 Periodic testing, inspection and maintenance. All carbon dioxide extinguishing systems shall be periodically inspected, tested, and maintained in accordance with NFPA 12 listed in Chapter 80 of this code and Sections 904.8 through 904.8.5. Any required inspections and tests shall be performed in the presence of the fire official unless such requirement is waived by the fire official. Fees for the attendance of the fire official shall be charged in accordance with the fee schedule of the Fire Prevention and Life Safety Section of the Alexandria Fire Department.

901.6.8 Periodic testing, inspection and maintenance. All halogenated extinguishing systems shall be periodically inspected, tested, and maintained in accordance with NFPA 12A listed in Chapter 80 of this code and Sections 904.9 through 904.9.4. Any required inspections and tests shall be performed in the presence of the fire official unless such requirement is waived by the fire official. Fees for the attendance of the fire official shall be charged in accordance with the fee schedule of the Fire Prevention and Life Safety Section of the Alexandria Fire Department.

901.6.9 Periodic testing, inspection and maintenance. All clean agent fire extinguishing systems shall be periodically inspected, tested, and maintained in accordance with NFPA 2001 listed in Chapter 80 of this code, the system manufacturer's instructions and Sections 904.10 through 904.10.3. Any required inspections and tests shall be performed in the presence of the fire official unless such requirement is waived by the fire official. Fees for the attendance of the fire official shall be charged in accordance with the fee schedule of the Fire Prevention and Life Safety Section of the Alexandria Fire Department.

901.6.10 Periodic testing, inspection and maintenance. All dry-chemical extinguishing systems shall be periodically inspected, tested, and maintained in accordance with NFPA 17 listed in Chapter 80 of this code, the system manufacturer's instructions and Sections 904.6 through 904.6.2. Any required inspections and tests shall be performed in the presence of the fire official unless such requirement is waived by the fire official. Fees for the attendance of the fire official shall be charged in accordance with the fee schedule of the Fire Prevention and Life Safety Section of the Alexandria Fire Department.

901.6.11 Periodic testing, inspection and maintenance. All wet-chemical extinguishing systems shall be periodically inspected, tested, and maintained in accordance with NFPA 17A listed in Chapter 80 of this code and Sections 904.5 through 904.5.2. Any required inspections and tests shall be performed in the presence of the fire official unless such requirement is waived by the fire official. Fees for the attendance of the fire official shall be charged in accordance with the fee schedule of the Fire Prevention and Life Safety Section of the Alexandria Fire Department.

901.6.12 Periodic testing, inspection and maintenance. All fire detection and alarm systems shall be periodically inspected, tested, and maintained in accordance with NFPA 72 listed in Chapter 80 of this code and sections 907.8 through 907.8.5. Any required inspections and tests

shall be performed in the presence of the fire official unless such requirement is waived by the fire official. Fees for the attendance of the fire official shall be charged in accordance with the fee schedule of the Fire Prevention and Life Safety Section of the Alexandria Fire Department.

901.6.13 Periodic testing, inspection and maintenance. Emergency alarms in building, rooms or areas used for the storage of hazardous materials shall be periodically inspected, tested, and maintained. Test methods and frequency shall be in accordance with NFPA 72 listed in Chapter 80 of this code and Section 908. Any required inspections and tests shall be performed in the presence of the fire official unless such requirement is waived by the fire official. Fees for the attendance of the fire official shall be charged in accordance with the fee schedule of the Fire Prevention and Life Safety Section of the Alexandria Fire Department.

901.6.14 Periodic testing, inspection and maintenance. All fire pumps shall be periodically inspected, tested, and maintained in accordance with NFPA 25 listed in Chapter 80 of this code and Section 913. Any required inspections and tests shall be performed in the presence of the fire official unless such requirement is waived by the fire official. Fees for the attendance of the fire official shall be charged in accordance with the fee schedule of the Fire Prevention and Life Safety Section of the Alexandria Fire Department.

901.6.15 Periodic testing, inspection and maintenance. Water tanks, fire service mains, and fire hydrants shall be periodically inspected, tested and maintained in accordance with NFPA 25 listed in Chapter 80 of this code. Any required inspections and tests shall be performed in the presence of the fire official unless such requirement is waived by the fire official. Fees for the attendance of the fire official shall be charged in accordance with the fee schedule of the Fire Prevention and Life Safety Section of the Alexandria Fire Department.

901.6.16 Periodic testing, inspection and maintenance. All fire department connections shall be periodically inspected and tested and maintained in accordance with NFPA 25 listed in Chapter 80 of this code and Section 912. Any required inspections and tests shall be performed in the presence of the fire official unless such requirement is waived by the fire official. Fees for the attendance of the fire official shall be charged in accordance with the fee schedule of the Fire Prevention and Life Safety Section of the Alexandria Fire Department.

901.6.17 Periodic testing, inspection and maintenance. All smoke control and smoke management systems shall be periodically inspected, tested, and maintained in accordance with the requirements listed in Section 909.20. Any required inspections and tests shall be performed in the presence of the fire official unless such requirement is waived by the fire official. Fees for the attendance of the fire official shall be charged in accordance with the fee schedule of the Fire Prevention and Life Safety Section of the Alexandria Fire Department.

901.6.18 Periodic testing, inspection and maintenance. All access control systems shall be periodically inspected, tested, and maintained in conjunction with any fire protection system inspection and test. Any required inspections and tests shall be performed in the presence of the

fire official unless such requirement is waived by the fire official. Fees for the attendance of the fire official shall be charged in accordance with the fee schedule of the Fire Prevention and Life Safety Section of the Alexandria Fire Department.

901.6.19 Periodic testing, inspection and maintenance. All fire extinguishers shall be periodically inspected, tested, and maintained in conjunction with the requirements of NFPA 10 listed in Chapter 80 of this code and Section 906. Any required inspections and tests shall be performed in the presence of the fire official unless such requirement is waived by the fire official. Fees for the attendance of the fire official shall be charged in accordance with the fee schedule of the Fire Prevention and Life Safety Section of the Alexandria Fire Department.

901.7 Systems out of service. When a system becomes impaired or is unable to provide the proper protection for which it was designed, for short term and on a temporary basis, a fire watch shall be established in accordance with the following requirements to provide onsite observation, documentation, and notification in the event of a fire emergency.

901.7.1 Procedures. When the establishment of a fire watch is ordered by the fire department operations personnel, the fire official, the owner or the owner's representative shall implement the following procedures and requirements for the duration of the fire watch. The fire watch shall be maintained until such time the noted system(s) is returned to normal ready service and approved for use by the fire official.

901.7.2 Requirements. A fire watch shall consist of a designated number of staff (minimum of two personnel) at all times until the compromised system has been repaired, inspected, tested and certified to be placed back in service by the fire official. Each participating staff member shall be equipped with reliable two-way communications. One staff member shall always be stationed in an area or room equipped with a working telephone or cellular phone to report an alarm by dialing 9-1-1.

When dialing 9-1-1 from a cellular phone, some cellular phone systems may connect the user with another jurisdiction's emergency communications center, therefore the caller should confirm they are speaking with the Alexandria Department of Emergency Communications. A walking tour of all areas of the building shall occur no less than every 10 minutes to observe for conditions where fire, smoke, or hazardous situations require fire department response, or a complete tour of the facility shall occur within a time frame prescribed by a representative of the fire department operation personnel, fire official, or designee and with the staffing level contingent upon the size of the facility and the type of occupancy.

If the building or property is of such size that two individuals cannot adequately perform the required fire watch, fire department personnel or the fire official may require additional on site personnel. Fire Department personnel or the fire official may permit one person to perform the fire watch if the building or property is of a size that one person can adequately perform the fire watch.

901.7.3 Required documentation. A legibly written log shall be kept on site at all times for review by any fire department operations personnel or the fire official, and it shall contain the following information: reason the fire watch was implemented; date and time the fire department was notified that the fire watch was initiated and concluded; start and stop time of each building or property tour; key locations visited in the building(s) requiring the fire watch; name(s) of personnel conducting the fire watch; and name(s) of personnel recording the information.

901.7.3.1 Tag Required. A tag shall be used to indicate that a system, or portion thereof, has been removed from service.

901.7.3.2 Placement of Tag. An all-weather tag shall be posted at each fire department connection, system, control valve, fire alarm control unit, fire alarm annunciator, and fire command center indicating which system or part thereof has been removed from service. The fire official shall specify where the tag is to be placed.

901.7.4 Requirement for Personnel. In all cases, the sole duty of personnel assigned to the fire watch shall be to perform constant patrols of the protected premises, to keep watch for fires, and if necessary to summon the fire department. Personnel conducting the fire watch shall be: capable of performing patrol duties; reliable; not addicted to the use of or under the influence of intoxicants, narcotics, illegal drugs, and/or physically or mentally impaired by prescription drugs; able to clearly and accurately converse with fire department personnel in English, in the event of any emergency; able to remain awake and alert at all times.

901.7.5 Determination of a Fire Emergency. If a fire is located, the fire watch staff shall not attempt to extinguish the fire. The fire watch staff shall immediately call 9-1-1 and report the location of the fire within the building. If possible, the fire watch staff shall sound the building alarm by activation of a manual station. If safe to do so, the fire watch staff shall begin the evacuation of the building starting on the fire floor, then above the fire floor, then below the fire floor.

901.7.6 Restoration of fire protection system. When the fire sprinkler, alarm, detection or suppression system is back in service, the fire watch personnel shall contact the Alexandria Department of Emergency Communications to place the system back in normal ready service.

901.7.7 Systems out of service for routine inspection, testing, and maintenance. The fire department and or fire official shall be immediately notified when a fire sprinkler, alarm, detection, suppression, or protection system is out of service for routine inspection, testing and maintenance. Any person or organizations performing any of these activities shall notify the Alexandria Department of Emergency Communications and provide the name of the responsible person and organization, telephone number, and estimated time the system or systems will be out of service. If it is determined by the fire official that the inspection, testing, or maintenance of the system or systems presents an unacceptable level of risk for the period of the inspection, test, or maintenance, a fire watch shall be required by the fire official.

901.7.7.1 Restoration of fire protection system. Upon completion of the inspection, testing, or maintenance, the responsible party shall contact the Alexandria Department of Emergency Communications to place the system back in normal ready service.

903.5.1 Flow test. All systems shall be tested at the inspector's test pipe with the proper test orifice to determine that the water-flow detecting devices, including the associated alarm circuits are in proper working order.

906.11 Maintenance. Maintenance of fire extinguishers shall be in accordance with NFPA 10, but at not less than monthly visual checks, yearly service by a certified individual or organization, and hydrostatic test of cylinders every five years.

912.4.1 Additional identification sign. All fire department connections shall have an additional sign that is visible from the street and permanently mounted at the height approved by the fire official above the location of each fire department connection. Signs shall be 8 inch × 12 inch reflective metal and have red letters "FDC" that are 6 inches in height and 2 inches wide on a white background. Where the FDC cannot be seen from the street, a sign shall be mounted on the street front or at a viewable location that indicates by use of words or an arrow the location of the fire department connection. All signs are subject to approval by the fire official.

1001.3 Overcrowding. Admittance of any person beyond the approved occupant load established by the building official or the building code under which the building was constructed, or obstructing aisles, passageways or any part of the means of egress shall not be allowed. The fire official, upon finding any condition that constitutes a life safety hazard, shall be authorized to cause the event to be stopped until such condition or obstruction is corrected.

1001.4 Accountability. A person responsible for controlling the occupancy capacity shall develop a system to manage the occupancy capacity for approval by the fire official. This system shall be implemented outside the main entrance and consist of a mechanism to count persons as they enter a facility without restricting egress.

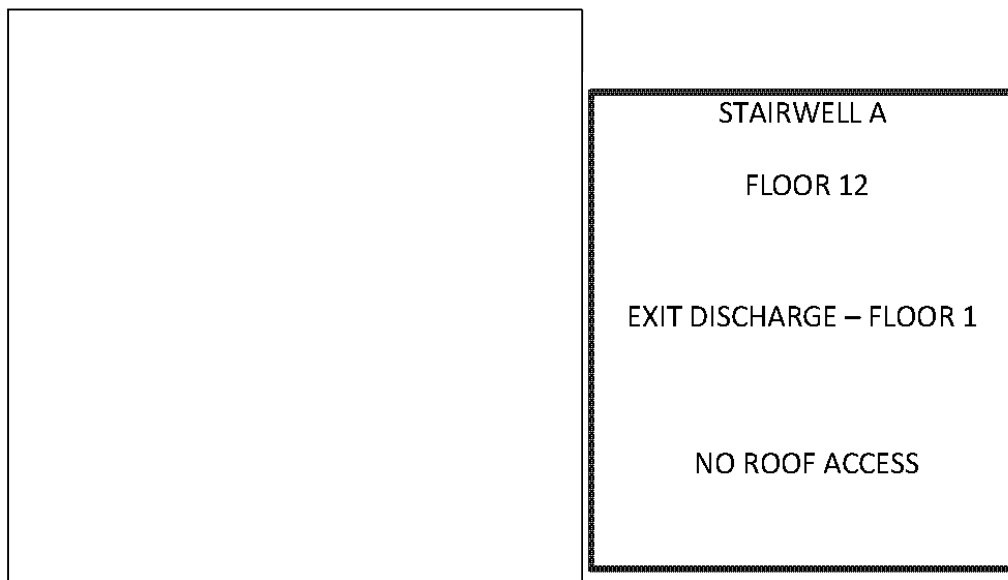
1001.5 Operator responsibility. The operator or the person responsible for the operation of an assembly or educational occupancy shall check egress facilities before such building is occupied to determine compliance with this section. If such inspection reveals that any element of the required means of egress cannot be accessed, is obstructed, locked, fastened or otherwise unsuited for immediate utilization, admittance to the building shall not be permitted until necessary corrective action has been completed.

1004.3.1 Occupancy placards. Occupancy load placards required by the building and/or fire code shall be maintained by the owner, occupant, or lessee.

1022.9 Stairway identification signs. Stairway identification signs shall be provided at each landing in all interior exit stairways connecting more than three stories. Stairways shall be

identified by letter designation starting next to the main entrance with "A" and continuing in a clockwise or left to right pattern using consecutive letters of the alphabet for each additional stairway. Two copies of the stairway signs shall be submitted to the fire official for approval within 30 days of completion of construction or receipt of notification.

1022.9.1 Sign requirements. Stairway signs shall designate the stairway letter, state the floor level, the level of exit discharge, and if there is access or no access to the roof regardless if the access door or roof hatch locks. The bottom of the sign shall be located five (5) feet above the floor landing in a position that is readily visible when the stairwell door is opened or closed. The signs must have lettering that is a minimum of 2 inches but no greater than 4 inches in height. This information may be stenciled directly onto the wall but all lettering must be of a color contrasting with the background stairway wall color. (See Figure 1022.9.1)



**Figure 1022.9.1 Example
Stairway Identification Sign**

1022.9.2 Footprint requirements. In buildings greater than three stories where there is no graphic representation of the building footprint, a simplified building schematic must be on display in the lobby. The simplified building footprint shall be an overhead view of the building's exterior and the general layout of the lobby of the first floor. Stairways shall be denoted by letter as stated in section 1022.9 (See Figure 1022.9.2)

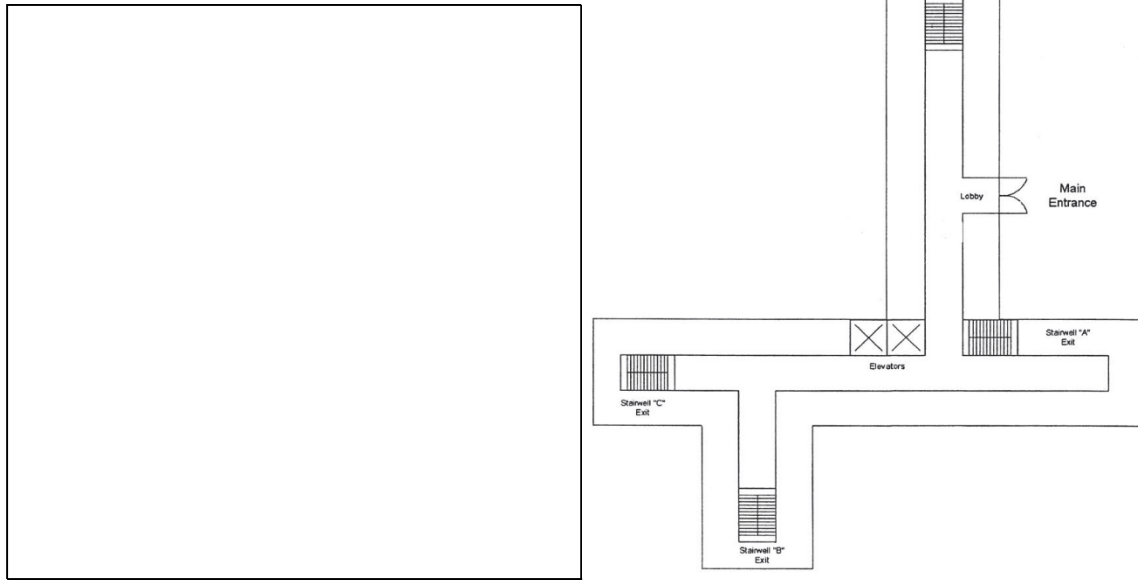


Figure 1022.9.2 Example Building Footprint Sign

1030.3.1 Overcrowding. The fire official, upon finding any condition which constitutes a life safety hazard or where the reliability of the means of egress has been reduced as a result of overcrowding shall be authorized to cause the event to be stopped until such conditions or obstructions are corrected.

2007.1.1 Permits. Permits shall be obtained from the fire official in accordance with Table 107.2.

2007.1.2 Safety Personnel. A minimum of two trained safety personnel shall supervise the landing area during landing and takeoff. Safety personnel shall be dedicated to the landing area and ensure the area is clear of pedestrians and unauthorized personnel.

2101.2 Permits. Permits shall be obtained from the fire official in accordance with Table 107.2.

2201.2 Permits. Permits shall be obtained from the fire official in accordance with Table 107.2.

2301.2 Permits. Permits shall be obtained from the fire official in accordance with Table 107.2.

2401.3 Permits. Permits shall be obtained from the fire official in accordance with Table 107.2.

2404.10 Exterior Spray Operations. This section applies to exterior spray painting operations of flammable or combustible finishes that do not exceed an accumulative area of 9 (nine) square feet per day.

2404.10.1 Permit Requirements. A permit shall be applied for with all required supporting documentation, and upon approval, issued to perform limited exterior spray-painting of flammable

or combustible finishes. The applicant shall submit two copies of the proposed procedure outlining the process to include the following: a complete list of Material Safety Data Sheets for materials to be utilized, a chemical/paint inventory, the method of on site storage, the method of transportation between sites, the method of paint application, the method of waste/spray paint recovery, site plans, a list of all application areas in which spraying will occur, the type of on site fire protection, 24 hour emergency contact information and the site contact. The Hazardous Use Permit shall be kept in the on site contractor's vehicle at all times. Absence of the on site permit will void permitted process and the area will be deemed non-compliant. If this occurs, all equipment and paint shall be removed from the City of Alexandria limits.

2404.10.2 General Requirements. The following general requirements shall apply to all exterior spray painting operations of flammable and combustible finishes and are subject to review and approval by the fire official or designee prior to commencing exterior spray painting operations. The following requirements apply to the exterior application of flammable and combustible finishes:

- 1) As practical, the applicant shall locate spray-painting operations away from a building, structure or a property line.
- 2) The applicant shall ensure the spray painting operation is not continuous in nature.
- 3) The applicant shall ensure that no exterior electrical equipment is within 20 feet unless it meets the requirement of NEC Class I, Division II, including flexible electrical extension cords, and is approved by the Department of Code Administration.
- 4) The applicant shall not use portable electrical lamps inside the spray-painting area.
- 5) The applicant shall provide a minimum of one (40-BC) dry chemical fire extinguisher outside the application area and within 30 feet of travel.
- 6) The applicant shall remove all possible ignition sources. This shall include securing and stopping all motors on vehicles.
- 7) The applicant shall not permit open flames within 20 feet of the designated spray area.
- 8) The applicant shall not permit hot or heated surfaces within the designated spray area.
- 9) The applicant shall not permit smoking within the spray area. Signage shall be posted and visible from the exterior of the designated spray areas.
- 10) The applicant shall clean spray-painting equipment in a manner approved by the fire official. Only Class II or III solvents shall be utilized on the exterior.
- 11) The applicant shall provide a smooth surface for the limited area spray operation. A porous surface such as asphalt is not permitted.

- 12) If an interior limited area spray operation is approved and utilized, the applicant shall provide the area with approved fire protection and positive ventilation approved for flammable liquids.
- 13) The applicant shall ensure that all equipment and containers are listed for the flammable or combustible liquid use.
- 14) If flammable liquids will be transferred from one container to another, the applicant shall ensure that at least one container is bonded and/or grounded.
- 15) The applicant shall ensure that Class I flammable liquids and/or solvents are not utilized for cleaning of equipment. Only Class II and III combustible liquids may be utilized for cleaning of equipment.
- 16) The applicant shall keep the limited spray-painting area clean of over spray and residue.
- 17) The applicant shall provide self-closing metal waste cans to handle waste and rags.
- 18) The applicant shall control odors, smoke and any other air pollution from operations at the site and prevent them from leaving the property or becoming a nuisance to neighboring properties, as determined by the Department of Transportation and Environmental Services.
- 19) The applicant shall not dispose of material by venting material into the atmosphere.

2410.1.1 Permits. Permits shall be obtained from the fire official in accordance with Table 107.2.

2501.2 Permits. Permits shall be obtained from the fire official in accordance with Table 107.2.

2601.2 Permits. Permits shall be obtained from the fire official in accordance with Table 107.2.

2701.5 Permits. Permits shall be obtained from the fire official in accordance with Table 107.2.

2801.2 Permits. Permits shall be obtained from the fire official in accordance with Table 107.2.

2807.1.1 Permits. Permits shall be obtained from the fire official in accordance with Table 107.2.

2901.2 Permits. Permits shall be obtained from the fire official in accordance with Table 107.2.

3001.2 Permits. Permits shall be obtained from the fire official in accordance with Table 107.2.

3103.4 Permits. Permits shall be obtained from the fire official in accordance with Table 107.2.

3201.2 Permits. Permits shall be obtained from the fire official in accordance with Table 107.2.

3303.1.1 Plans. Floor plans designating the location of heating equipment, heating fuel source, exits, fire extinguishers and fire department access points shall be submitted to the fire official for approval prior to implementation of temporary heating operations.

3303.1.2 Membranes and Sheathing. All material utilized for isolation of heating areas shall be fire retardant.

3304.5 Fire watch. When required by the fire official for building demolition that is hazardous in nature, a fire watch shall be implemented in accordance with the requirements in Section 901.7.

3304.8 Refueling Tanks. All tanks utilized on construction sites shall be equipped with secondary containment and vehicle protection.

3401.2 Permits. Permits shall be obtained from the fire official in accordance with Table 107.2.

3403.1.1 Permits. Permits shall be obtained from the fire official in accordance with Table 107.2.

3409.2 Indoor Storage of Scrap Tires and Tire Byproducts. The indoor storage of scrap tires and tire byproducts exceeding 2,500 cubic feet (71 m³) shall require a permit.

3501.2 Permits. Permits shall be obtained from the fire official in accordance with Table 107.2.

3504.2.7 Exterior Operations. When welding and cutting carts are moved or relocated out of an approved welding and cutting area, the welding and cutting carts shall be equipped with a securely mounted and approved 2A-20BC fire extinguisher.

5001.5 Permits. Permits shall be obtained from the fire official in accordance with Table 107.2.

5101.2 Permits. Permits shall be obtained from the fire official in accordance with Table 107.2.

5201.3 Permits. Permits shall be obtained from the fire official in accordance with Table 107.2.

5301.2 Permits. Permits shall be obtained from the fire official in accordance with Table 107.2.

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5501.2 Permits. Permits shall be obtained from the fire official in accordance with Table 107.2.

5601.1.3 Fireworks. The possession, manufacture, storage, sale, handling, display, and use of fireworks within the City of Alexandria is prohibited. The fire official or designee shall seize, take, remove or cause to be removed at the expense of the owner, all fireworks that are offered for sale, stored, or are held in violation of this code.

Exception: For public and private displays as permitted by the fire official where a permit is obtained prior to any display in accordance with the requirements of this chapter.

5601.2 Permits. Permits shall be obtained from the fire official in accordance with Table 107.2 for all blasting operations, firework aerial displays, pyrotechnic events before an audience, the transportation, manufacture, possession, use, storage of explosives and fireworks and the operation of a terminal for handling explosive material and the delivery to or receipt from a carrier at a

terminal between sunset and sunrise. An application for the display of aerial fireworks shall be completed and submitted to the fire official 45 days before the scheduled event. The application for aerial fireworks display shall include the following:

- 1) A copy of an insurance policy with the City of Alexandria named as a co-insured.
- 2) A site plan with the layout of the discharge site, spectator site, viewing area, parking area, fallout area and the distances for each; the distances to all tents, buildings and structures shall be included.
- 3) A complete list of aerial fireworks to be displayed.
- 4) The type and amount of fire protection.
- 5) The type of physical barrier that will be installed around the display site and the number of monitors that will be used during performance.
- 6) Identification of the type of security and the number of monitors that will be onsite during the display.
- 7) The shooter/operator's name, address, social security number, and date of birth.
- 8) The fireworks display company's address and emergency contact numbers.
- 9) Emergency contact information, including the owner of the property name and phone number, third shooter/operator (within one hour of travel), and the hazardous material transport company responsible for transportation and security.
- 10) The method of storage and location that display fireworks are to be stored.
- 11) A copy of the current ATF shooters license.

5601.2.2 Sale and Retail Display. The sale and retail display of fireworks, explosives or any explosive materials is prohibited within the City of Alexandria.

5601.2.4 Insurance Responsibility. The fire official shall not issue any permit until the requirements of this chapter are met and an application has been submitted for review, approved, and the applicant files a certificate of insurance with the City of Alexandria named as a co-insured on all policies in the amount of two million (\$2,000,000) dollars for each bodily injury and property damage. The insurance policy shall become available for the payment of any damage arising from acts or omissions of the applicant, his agents or his employees in connection with the display of aerial fireworks. The applicant shall ensure the insurance policy is in effect at the time of the commencement of activities authorized by the permit and remains continuously in effect until such are completed.

5602.1 (see Chapter 2 also) Definitions. Fireworks (added to existing list). "Fireworks" shall mean and include any combustible or explosive composition, or any substance or combination of substances or articles prepared for the purpose of producing a visible or an audible effect by combustion, explosion, chemical reaction, deflagration or detonation and shall include blank cartridges, toy pistols, toy cannons, toy canes or toy guns in which explosives are used, the type of balloons which require fire underneath to propel them, firecrackers, torpedoes, skyrockets, model rockets, Roman candles, Daygo bombs, sparklers, pinwheels, poppers, or other devices containing any explosive or flammable compound, or any tablets or other devices containing any explosive; except that the term "fireworks" shall not include auto flares, paper caps containing not in excess of an average of twenty-five hundredths of a grain of explosive content per cap manufactured in accordance with the DOT regulations for packing and shipping as provided therein, and toy pistols, toy cannons, toy canes, toy guns or other devices for use of the caps, the sale and use of which shall be permitted at all times. Pyrotechnics (special fireworks) shall comply with the applicable provisions of this Chapter.

5603.2.1 Records. Daily records shall be kept of the amount of explosives received from a supplier and the amount delivered to the magazine. A daily record shall be kept of the amount of explosives removed from the magazine for daily use and the amount returned to the magazine. This record will be kept within the magazine so that, on inspection of the magazine, an inventory for all explosives can be made. The inventory shall be separated as to the different types of explosives stored and used. Forms for these records shall be approved by the fire official.

5604.5.2.3 Type 3 magazines. Type 3 magazines may be used for temporary storage of explosives at the site of blasting operations where the amount constitutes not more than one day's supply for use at the blast site. All explosives not used in the day's operation shall be returned to a Type 1 magazine at the end of the work day for overnight storage. In no case shall a Type 3 magazine be used for overnight storage unless approved by the fire official. Type 3 magazines shall be allowed only in the I/Industrial Zone.

5606.4.3 Small arms primers and ammunition. No more than 10,000 small arms primers and ammunition shall be stored in occupancies limited to Groups R-3 and R-5.

5607.1.1 Permits. Permits shall be obtained from the fire official in accordance with Table 107.2.

5608.1.1 Permits. Permits shall be obtained from the fire official in accordance with Table 107.2.

5608.11 Retail display and sale. The retail display or sale of fireworks is prohibited.

SECTION 5610 TRANSPORTATION

5610.1 Prohibited transportation. Explosive materials shall not be carried or transported on a public conveyance or vehicle carrying passengers for hire.

5610.2 Vehicle design. Vehicles transporting explosive materials shall be strong enough to carry the load and shall be in good and safe mechanical condition. The floors shall be tight and shall have no exposed spark producing surface on the inside of the body. Where explosive materials are transported on a vehicle with an open body, the explosive material shall be stored in a portable magazine or other closed container that is securely fastened to the vehicle body.

5610.3 Vehicle prohibitions. The attachment of a trailer behind a truck, tractor or semi-trailer combination for transporting explosive materials is prohibited. The transport of explosive materials in any pole trailer is prohibited. Exception: Such transport as permitted by DOTn 49 CFR listed in Chapter 80 of this code.

5610.4 Vehicle restrictions. Vehicles containing explosive materials shall not be taken into a garage or repair shop for repair or storage.

5610.5 Vehicle contents. Only those articles authorized to be loaded with explosive materials in accordance with the provisions of this chapter shall be carried in the body of a vehicle transporting explosive materials.

5610.6 Vehicle inspections. The person to whom a permit has been issued to transport explosive materials over the streets and highways of the city shall inspect each vehicle used for such purposes daily, to ensure that:

1. Fire extinguishers are filled and in working order.
2. All electrical wiring is completely protected and is securely fashioned to prevent short circuiting.
3. The motor, chassis, oil pan and body undersides are reasonably clean and free of excess grease and oil.
4. Both the fuel tank and fuel line are secure and free from leaks.
5. The brakes, lights, windshield wipers, horn and steering mechanism are functioning properly.
6. The tires are property inflated, have proper tread depth, and are free of defects.
7. The vehicle is otherwise in proper operating condition and is acceptable for transporting explosive materials.
8. The operator shall maintain all inspection reports in the vehicle at all times.

5610.6.1 Prior Inspection. Vehicles routinely transporting explosive materials within the city shall be inspected by the fire official prior to entering the city limits. Inspection shall occur at six month intervals. The fire official shall issue a fire prevention permit to all approved vehicles.

5610.6.1.2 Permits. Permits shall be obtained from the fire official in accordance with Table 107.2.

5610.7 Vehicle signs. Vehicles transporting any quantity of explosive materials shall display all placards, signs lettering or numbering in accordance with DOTn 49 CFR listed in Chapter 80.

5610.8 Separation of detonators and explosives. Detonators shall not be transported in the same vehicle with Class A or Class B explosive materials or blasting agents, except as permitted by DOTn 49 CFR listed in Chapter 80.

5610.9 Vehicle traveling clearances. Vehicles transporting explosive materials and traveling in the same direction shall not be driven within 300 feet (91,440 mm) of each other.

5610.10 Vehicle routing. The route followed by vehicles transporting explosive materials shall not pass through congested areas or heavy traffic, except as permitted by the fire official. A transportation plan identifying the route of travel shall be submitted to the fire official for review and approval.

5610.11 Restricted transportation. Explosive materials shall not be transported through any vehicular tunnel or subway or over any bridge, roadway or elevated highway through or over which such transport is prohibited.

5610.12 Portable fire extinguishers. Every vehicle transporting explosive materials shall be equipped with portable fire extinguishers capable of being readily accessed, filled and ready for immediate discharge.

5610.12.1 Vehicles 14,000 lbs. or greater. At least two portable fire extinguishers with a minimum 2-A:40-B:C rating shall be provided on trucks with a gross vehicle weight of 14,000 lbs. (6356 kg) or greater.

5610.13 Operating precautions. No person shall carry matches of any other flame producing device, or carry unauthorized firearms or cartridges while in or near a vehicle transporting or storing explosive materials. No person shall drive, load or unload such a vehicle in a careless or reckless manner.

5610.14 Spark protection. Spark producing metal or tools, oils, matches, firearms, electric storage batteries, flammable materials, acids, oxidizers or corrosives shall not be transported or stored in the body of any vehicle that is being used to store or transport explosive materials or blasting agents.

5610.15 Unattended vehicles. Vehicles being used to store or transport explosive materials shall not be left unattended at any time within the city. No unauthorized person shall ride or be permitted to ride on any such vehicle.

5610.15.1 Responsibilities. The authorized vehicle attendant shall remain awake and alert at all times.

5610.16 Vehicle parking and transfer. Vehicles being used to transport explosive materials shall not be parked, attended or unattended, on any street or road within the city or adjacent to or in proximity to any building or structure, including a bridge or tunnel, or other place where persons work, congregate or assemble, prior to reaching the vehicles' destination. Explosive materials shall not be transferred from one vehicle to another except in an emergency and under the supervision of the fire official.

5610.16.1 Emergency conditions. In the event a vehicle being used to transport explosive materials breaks down, is involved in an accident, or catches on fire, the city police and fire department shall be notified immediately. Only in the event of a breakdown or accident shall explosive materials be transferred from the disabled vehicle to another, and then only by proper and qualified personnel and under the supervision of the fire official.

5610.17 Delivery. Delivery of explosive materials shall only be made to authorized persons and into approved magazines or approved temporary storage or handling areas.

5610.18 Explosive materials at terminals. The fire official shall designate the location and specify the maximum quantity of explosive materials which are to be loaded, unloaded, reloaded, or stored at any given time at each terminal where such operations are permitted.

5610.19 Carrier responsibility. A carrier shall immediately notify the fire official when explosive materials or blasting agents are to be transported within the City.

5610.20 Notice to consignee. A carrier shall immediately notify the consignee of the arrival of explosive materials at the carrier's terminal.

5610.21 Consignee responsibility. Upon notification that a shipment of explosive materials has arrived at a terminal, the consignee shall remove such materials to a storage area complying with the provisions of this chapter. Such removal shall be accomplished within 48 hours after receipt of notice, excluding Saturdays, Sundays and legal holidays.

5701.4 Permits. Permits shall be obtained from the fire official in accordance with Table 107.2.

5704.2.7.12 Spill prevention plan. The owner or operator of any storage facility comprised of one or more tanks above or below ground with a total capacity of 5,000 gallons or more shall prepare and maintain on site a plan for product spill prevention, control and countermeasures certified by a professional engineer registered in the Commonwealth of Virginia and approved by the fire official. The certification of the professional engineer shall be that the plan is in substantial compliance with the spill prevention, control and countermeasures plan requirements of the Environmental Protection Agency contained in part 112 of Title 40, Code of Federal Regulations.

A plan that has been approved by the Environmental Protection Agency may be submitted to the fire official in lieu of one certified by a professional engineer.

5704.2.7.13 Clean-up of spill and leaks. The owner, tenant or other person in control of premises where a spill or leak has occurred shall be responsible for taking immediate and effective countermeasures to contain the spill, clean up the flammable or combustible liquid and dispose of all waste in an approved manner. Upon notification by the city that it has determined that such person lacks the capability or intent to perform these countermeasures, the person notified shall have a reasonable opportunity to elect either to contract with another for the performance of these countermeasures or to join the city in a contract with another for such work. In either case, the person shall pay the entire cost of the work. If a person who has received a notice from the city under this section fails to inform the city of his election within the time specified in the notice, the city may proceed without delay to undertake the required countermeasures, and to charge the owner, tenant, or other person in control of the premises, the entire cost of such work.

5704.2.7.14 Monitoring wells. Two permanent monitoring wells shall be installed in opposing corners of the tank field on all new installation after the effective date of this regulation. These wells shall extend to a minimum depth of two feet below the bottom of the tanks in the tank field. These wells shall be a minimum of four inches schedule 40 PVC screen pipe or equivalent and shall be flush with covering surface and covered with standard metal cover and gravel packed to prevent clogging. The screened section shall have a minimum size of .025 inch.

5704.2.7.15 Tank closure. All underground storage tanks permanently removed from service shall have a site assessment in accordance with the regulations of the Virginia Statewide Water Control Board. A copy of this assessment must be submitted to the fire official and to the Virginia Water Control Board if it so requires. A minimum of three soil samplings should be obtained to complete this assessment. Previously used tanks which are removed from the ground shall not be reinstalled unless the original manufacturer certifies that they are suitable for service. The manufacturers written certification must be kept on file at the facility and be available for inspection by the fire official.

5704.2.7.16 Product inventory. All buried tanks installed after this regulation is effective shall have provision for taking direct measurements of readings of content level by the stick method. Liquid levels of storage tanks shall be measured by the operator each day of operation and compared with pump meter readings taken on receipt of the product. These records shall be kept in a log book and be available for reasonable inspection by the fire official. Loss of product above normal evaporation (one-half of one percent of pump meter sales readings) shall be reported immediately to the fire official. Records shall be retained for two years. This period shall be extended upon request of the fire official.

5704.2.7.17 Special equipment. High liquid level gauges or alarm systems as well as pump cut-off devices shall be installed by the owner or the authorized operator in all oil storage tanks

wherever in the judgment of the fire official there is a possibility that product may be lost by overflowing. Since these emergency devices can fail to operate, their use for spill prevention purposes shall be considered only as auxiliary and supplementary to the use of personnel engaged in a transfer of fill operation.

5706.6.5 Maintenance. Tank vehicles operating within the city while in transit into or out of the city shall be maintained in accordance with the federal regulations contained in parts 390 through 397 of Title 49, Code of Federal Regulations. Part 397.3 of Title 49 requires that all motor vehicles carrying hazardous materials comply with state and local laws, ordinances and regulations, unless the regulations of the U.S. Department of Transportation apply and are stricter. Any duly sworn law enforcement officer of the city, including the fire official, fire marshal, assistant fire marshal, and any deputy fire marshals may halt any tank vehicle which is observed to have a condition or characteristic which indicates that there is a violation of city, state or federal regulations governing the transportation of hazardous materials. The vehicle may be detained long enough to determine whether the permits required for transporting hazardous materials have been obtained, whether the cargo is secure, and whether the observed condition or characteristic presents an immediate threat of a transportation related spill or other catastrophic event. The tank vehicle may resume operation if it is found to be in good repair and free of leaks in accordance with NFPA 385. If that finding is not made, the vehicle shall not be detained any longer than necessary for the officer or official to determine that arrangements for the repair of the vehicle where situated or for its removal to a safe place and repair there, whichever in the judgment of the officer or official if appropriate, are made. Upon refusal of the operator to make arrangements required by the officer or official, the vehicle shall be impounded and held until the repair is made or until the officer or official is certain that it will be made.

5801.2 Permits. Permits shall be obtained from the fire official in accordance with Table 107.2.

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5906.1.1 Permits. Permits shall be obtained from the fire official in accordance with Table 107.2.

6001.2 Permits. Permits shall be obtained from the fire official in accordance with Table 107.2.

6101.2 Permits. Permits shall be obtained from the fire official in accordance with Table 107.2.

6103.2.2.1 Permits. Permits shall be obtained from the fire official in accordance with Table 107.2 for the storage and operation of industrial vehicles and floor maintenance machines.

6201.2 Permits. Permits shall be obtained from the fire official in accordance with Table 107.2.

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APPENDIX A - SITE PLAN REQUIREMENTS

SECTION A101 - GENERAL

A101.1 Scope. Appendix A, Site Plan Requirements provides specific information concerning various fire protection related issues including, fire hydrant and fire main requirements, emergency vehicle access and easements (emergency vehicle easement requirements), and construction features.

A101.2 Alternatives. Alternative approaches to these requirements will be considered on a case-by-case basis and are subject to the review and approval by the fire official.

SECTION A102 - SITE PLAN INFORMATION

A102.1 Site Plan Requirements. The following general and fire protection information shall be provided on site plans:

1. Submitter name, address, telephone number.
2. Building name and address.
3. Edition of the building code (Virginia Uniform Statewide Building Code), occupancy classification, use group and type of construction. Height of building in feet and stories.
4. Foot print area of building and gross floor area of building.
5. Identification of fire walls, fire barriers, other fire separations with hourly rating.
6. Existing and proposed water and fire main locations and sizes.
7. Existing and proposed fire hydrants locations, size of pipe, and expected flow and pressure.
8. State if a full or partial fire sprinkler system will be installed.
9. If fire sprinkler system will be installed, show location of fire department connections(s). Fire department connection shall be located on street front, address side of building but provide additional fire department connection for buildings five stories or 50 feet or greater, on the other side of the building. Fire department connection shall be visible and accessible with no obstructions within 3 feet of fire department connection. Note: Type of fire department connection will be determined by fire sprinkler system water demand.
10. Topographical map relating grade and elevation to fire department connections.

11. Available water pressure and flow capacity, static pressure, residual pressure, flow in gpm.
12. Calculate required fire flow and indicate available fire flow at 20 psi per Insurance Services Office (ISO) methodology as described in Appendix B of this document.
13. Location of all Emergency Vehicle Easements (EVE) and locations of EVE signs.
14. Adequate emergency vehicle access, turning radii.

Note:

- (a) Dead-end emergency vehicle easements greater than 100 feet require turnaround.
- (b) Emergency vehicle access to within 100 feet of main entrance.
- (c) Show all overhangs and obstructions to emergency vehicle easement. The minimum emergency vehicle clearance for canopies, overhangs, and obstructions is 15 feet.

APPENDIX B - FIRE-FLOW REQUIREMENTS FOR BUILDINGS

B101.1 Fire-Flow Requirements. Fire-flow requirements shall be based on the methodology described in the Insurance Services Office's (ISO) Guide For Determination of Needed Fire Flow, Edition 06-2014.

APPENDIX C - FIRE HYDRANT AND FIRE MAIN INSTALLATION REQUIREMENTS

C101.1 Fire Hydrant Requirements. Fire hydrant installation shall conform to the requirements found in Design and Construction Standards, Department of Transportation & Environmental Services July 1989, Fire Hydrant Installation, CSFH - 1, Page 9. Hydrants shall be Mueller "Super Centurion" (Catalog #A-423) provided with a 6-inch connection to the water main. The hydrant shall have on 1-½ inch pentagon-operating nut, left turn to open, two 2-½ inch NSH nipple outlets capped, and one 4-inch NSH nipple outlet capped. The hydrant shall be connected to a Mueller Gate Valve (Catalog #A2360-20 or Virginia American Water Company approved equivalent) by the 6 inch water supply line and have a minimum 5¼ inch valve opening with 6 inch mechanical joints. Additional requirements are as follows:

1. The hydrant shall be supported by hard, compacted block with hard gravel bedding.
2. The pipe has to have a minimum bed of 6" of 21-A bluestone under hydrant laterals. All underground piping must be poly wrapped.
3. Hydrants shall have a minimum of 9 cu. yds. of 57 stone for the bleeders, tar paper between the concrete kicker and stone, and sitting on a concrete block.

4. The hydrant shall be located so that the thrust block is placed in undisturbed soil. Where this is not practical, the soil beneath the surrounding thrust block shall be compacted to 95% of maximum density.
5. The hydrant shall be plumb and the center of the hydrant (4-inch nozzle cover) shall be a minimum of 18 inches and maximum of 24 inches from the top face of the curb.
6. Excavation shall contain one ton of coarse washed gravel around base of hydrant for drainage.
7. The bottom of the safety flange shall be 2½ inches above the edge of the shoulder on streets without curb and gutter and 2½ inches above the elevation of curb on streets with curb and gutter.
8. Bends in underground piping shall be rodded and blocked.
9. Laterals shall be equipped with shut-off valves at tees or tapping sleeves. Valves shall be secured by rods or bolts, to tees or mains. Valves shall be equipped with standard two-inch square operating nuts and valve boxes with covers. Valves shall have right hand closure.
10. All hydrant branches shall have a minimum cover of four feet at the ditch line.
11. Public hydrants shall be painted with rust inhibitive primer and exterior enamel in the following color(s): Sherwin Williams "Safety Yellow" #B54YZ437 for barrels and Sherwin Williams "Pure White" #B54WZ401 for hydrant bonnets and caps.
Exception: Public hydrant barrels may be painted with an approved flat black paint where such locations are specifically approved in writing by the fire chief. Private hydrant shall be painted with a rust inhibitive primer and exterior enamel Sherwin Williams "Safety Yellow" #B54YZ437 for the barrels and bonnets and Sherman Williams "Pure White" #B54WZ401 for the caps only.
Exception: Hydrant barrels may be painted with an approved flat black where such locations are specifically approved in writing by the fire chief.
12. The building official or designee shall witness all flushing, perform visual inspection, hydrostatic and flow testing of all public and private hydrants by a licensed contractor. The building official or designee personnel shall confirm the hydrant meets the 100% design flow requirement.
13. Sidewalks shall be wrapped around hydrants located in areas where the grass area is shown as two feet or less.
14. Easements shall be required for hydrants located in ditch section streets where there is less than five feet clearance from hydrant to the property line.
15. Hydrants shall be installed, either five feet from the point of curvature of curb returns or on the property line in subdivisions.

16. Fire hydrants shall be located at least 40 feet from all buildings served by the hydrant. When a hydrant cannot be placed at the required distance, the fire official or designee will consider exceptions.

17. No plantings or other obstructions shall be located within three feet of any hydrant or fire department connection.

18. Fire hydrant protection pipe bollards shall be installed as needed for industrial and commercial developments where curbs are not available and in locations where the potential for damage is greater than normal due to vehicular traffic as determined by the fire official. Bollards shall be located adjacent to the hydrant and in such a manner as not to interfere with the ability to connect hoses or operate the hydrant. Steel pipe bollards shall be installed in accordance with Virginia American Water Company Specifications for Pipeline Installation and Street Restoration - Fire Hydrant Protection Pipe Bollard Detail 31-60013 SK. Where possible, bollards shall be at least 36 inches from the center of the hydrant-operating nut in all directions. The bottom of the bollards and encasement shall not be located above the hydrant supply piping and valve or within the area of the hydrant supply piping to prevent the possibility of damage to the underground piping should the bollard be displaced by vehicular contact. Exact locations of bollards will be determined by the engineer of record and approved by the fire official.

19. Where standpipes or sprinkler systems are provided within buildings, a fire hydrant shall be located within 100 feet of the fire department connection. Where possible and practical, the fire hydrant shall be located on the same side of the street as the fire department connection if the hydrant does not violate the minimum distance from all buildings requirement in Item 16.

20. All fire hydrants shall be located so the maximum distance measured from the hydrant to the most remote point of vehicular access on the site is 300 feet.

21. Dead-end water main to fire hydrant distance shall be as follows:

6" line = 380 feet max. distance

8" line = 1,550 feet max. distance

10" line = 4,600 feet max. distance

12" line = 11,150 feet max. distance

SECTION C102 - INSTALLATION AND TESTING OF UNDERGROUND FIRE MAINS AND FIRE LINES

C102.1 Fire Main and Fire Lines Requirements. All installation and testing shall be in accordance with Virginia American Water Company Standards. A Contractors Material and Test Certificate for Underground Piping, (see NFPA 24 appendix) shall be completed and signed by

the installing contractors. The building official or designee shall witness all required inspections and tests.

C102.2 General Requirements. The following general requirements shall be followed when installing fire main and fire lines:

1. Fire lines shall have at least four (4) feet of ground cover from the top of the pipe.
2. All bends and tees shall be provided with thrust blocks in accordance with NFPA 24.
3. All rods shall be a minimum of 5/8 inch in diameter. The number of rods shall be determined by the pipe size.
4. All rods, nuts, bolts, washers, clamps and other restraining devices shall be cleaned and thoroughly coated with bituminous or other acceptable corrosion-retarding material.
5. Thrust blocks shall be placed against undisturbed soil. Pipe clamps and tie-rods, thrust blocks, locked mechanical or push-on joints, mechanical joints utilizing set screw retainer glands, or other approved methods or devices shall be used. The type of pipe, soil conditions and available space shall determine the method.
6. When using clamps, rods shall be used in pairs, two to each clamp.
7. Fire lines shall not run under buildings.
8. All pipe shall be hydrostatically tested and visually inspected before being covered. The trench shall be backfilled between joints before testing to prevent movement of pipe.
9. The hydrostatic test of 200 psi or 50 psi over static pressure, whichever is higher shall be conducted for two (2) hours.
10. The contractor shall remain responsible for locating and correcting any leakage. If pipe is covered, no drop in pressure during the hydrostatic test is permitted.
11. Gauges used in performing acceptance tests shall meet the following:
 - (a) Gauges shall be appropriate for the type of test (i.e., air gauge for air pressure test, water gauge for hydrostatic test.)
 - (b) Air gauges shall have increments of two (2) pounds or less. Water gauges shall have increments of ten (10) pounds or less.
 - (c) The gauge shall be capable of registering pressures above the minimum pressure required during the test. The pressure registered during the actual test shall be at least the minimum required for the test and less than the maximum of the gauge register. Gauges shall be marked as accepted

by UL, FM, or other approved testing laboratories. No valves shall be installed in a fire line between the street valve at the water main and the OS&Y valve inside the building.

12. All fire lines shall be thoroughly flushed with an opening the same size as the pipe. The minimum rate of flow shall be not less than the water demand rate of the system, which is determined by the system design, or not less than that necessary to provide a velocity of 10 feet per second, whichever is greater. The flushing operation shall continue for sufficient time to ensure thorough cleaning.

13. When the above flow rate cannot be verified or met, supply piping shall be flushed at the maximum flow rate available to the system under fire conditions.

14. Approved site plans showing the size and location of pipe shall be on the job site before the inspection or test is performed.

15. Galvanized spool piece (potable water). The procedure for installing a galvanized pipe between the ductile iron fire line and the OS&Y valve is as follows:

(a) If a spool piece is used between the fire line stub and the OS&Y valve to raise the valve off the fire line stub, then it shall be galvanized pipe. This spool may be hydrostatically tested as part of the underground, or part of the sprinkler riser.

- or -

(b) If the OS&Y valve is rated by the AWWA as suitable for connection to a potable water system, this valve is a suitable transition piece between the fire line stub and the check valve. This OS&Y valve may be attached directly to the fire line stub if there is adequate clearance for proper operation of the valve, and then no galvanized pipe is required.

16. All items shall be inspected before any backfill.

17. Electrical ground wires shall not be connected to underground fire lines.

18. Backfill shall be well tamped, free of rocks and construction debris and free of corrosives.

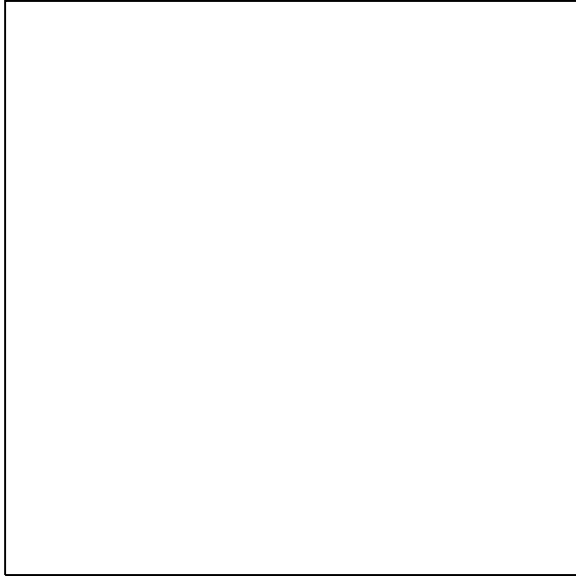
APPENDIX D - EMERGENCY VEHICLE ACCESS

D101.1 Requirements. The following requirements shall be followed when designing emergency vehicle access:

1. Access for emergency vehicles shall be provided to within 100 feet of the main or principal entrance to every building. The access shall be provided by a public or private street or parking lot.

2. Buildings 5 stories or 50 feet or more in height require ladder truck access (open perimeter) completely on one of the longest sides and a continuance side. When that cannot be achieved, 48% of the total perimeter of the building shall be accessible by ladder truck.
3. When neither of the ladder truck access methods can be achieved, access requirements necessary for fire and EMS operations will be determined by the fire official.
4. Buildings 5 stories or 50 feet or more in height up to the minimum defined height for a High Rise Building as defined in the Virginia Construction Code that cannot meet one of the two ladder truck access requirements shall meet the emergency escape and rescue, elevator, standby power, emergency power, stairway communication, and smoke proof exit enclosure provisions found in Chapter 4 of the Virginia Uniform Statewide Building (International Building Code Section 403) relating to High Rise Buildings. When in the opinion of the fire official it is impractical or unnecessary to meet specific high rise building requirements noted in this section to meet reduced ladder truck access, the fire official will provide written notification to the building official verifying which provisions are not necessary.
5. The access to the rear may be provided by a street, parking lot or emergency vehicle easement designed to all appropriate standards.
6. The inner surface of the ladder truck access way shall be no less than 15 feet and no more than 30 feet from the exterior building wall.
7. Where required, emergency vehicle easements shall have a minimum width of 22 feet.
8. Required fire department access ways over 100 feet in length shall have provisions for turning apparatus around according to the requirements established by the Transportation and Environmental Services Department for emergency vehicle easements.
9. Building overhangs which cross an emergency vehicle easement threshold shall not be occupied space and shall be no less than 15 feet in height, as measured from the top surface of the roadway to the lowest protrusion of the overhang.
10. Residential rear service alleys that function as fire department emergency vehicle access shall meet the access criteria established by the Transportation and Environmental Services Department.
11. Where there is an emergency vehicle easement over a parking structure, the design live load for the parking structure deck shall conform to A.A.H.S.T.O. Loading Standard HS-20.
12. Where curbing is a component of the emergency vehicle easement, the curbing construction shall conform to weight and grade requirements for vehicular traffic. In no circumstances shall a raised curb be located in the path of travel in an emergency vehicle easement. Where a mountable curb is provided as part of an emergency vehicle easement, emergency vehicle easement signs

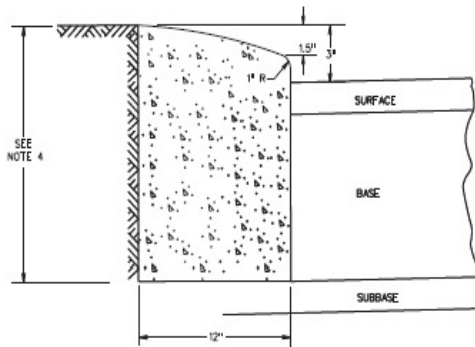
shall be posted at the point nearest the edge of the emergency vehicle easement, but in no case within the clear width of the emergency vehicle easement. With the exception of flush curbs, any fire department access points that require fire apparatus to mount a curb shall conform to the modified 3 inch curb design standard MOD CG-3 or MOD CG-7 design as shown.



MOD. CG-3

NOTES:

1. THIS ITEM MAY BE PRECAST OR CAST IN PLACE.
2. CONCRETE TO BE CLASS A3 IF CAST IN PLACE, 4000 PSI F' PRECAST.
3. CURB HAVING A RADIUS OF 300 FEET OR LESS (ALONG FACE OF CURB) WILL BE PAID FOR AS RADIAL CURB.
4. THE DEPTH OF CURB MAY BE REDUCED AS MUCH AS 3" (3" DEPTH) OR INCREASED AS MUCH AS 3" (3" DEPTH) IN ORDER THAT THE BOTTOM OF CURB WILL COINCIDE WITH THE TOP OF A COURSE OF THE PAVEMENT SUBSTRUCTURE. OTHERWISE, THE DEPTH IS TO BE 15" AS SHOWN. NO ADJUSTMENT IN THE PRICE BID IS TO BE MADE FOR A DECREASE OR AN INCREASE IN DEPTH.
5. WHEN THE MODIFIED CURB IS TO BE TIED INTO BARRIER CURB, THE TRANSITION IS TO BE MADE WITHIN 10' OR THE CHANGE IN STANDARDS MADE AT REGULAR OPENINGS.



MODIFIED 3" CURB

Figure D101.1 Modified 3 inch curb MOD CG-3

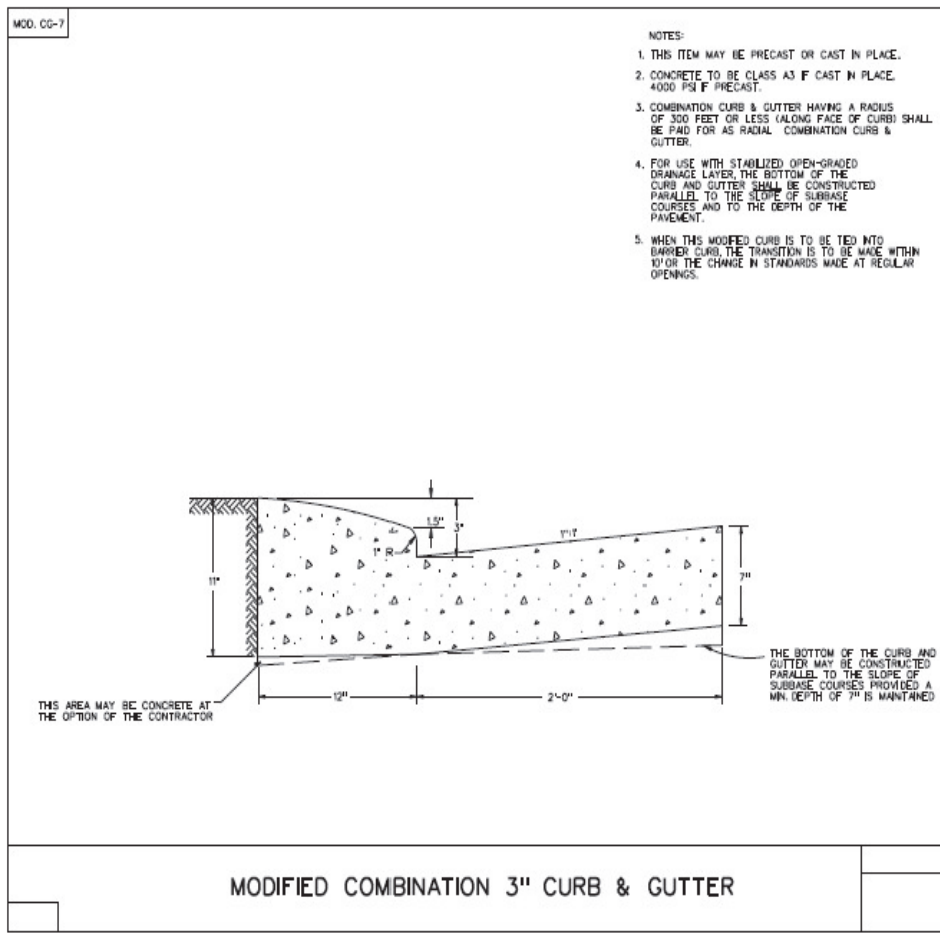
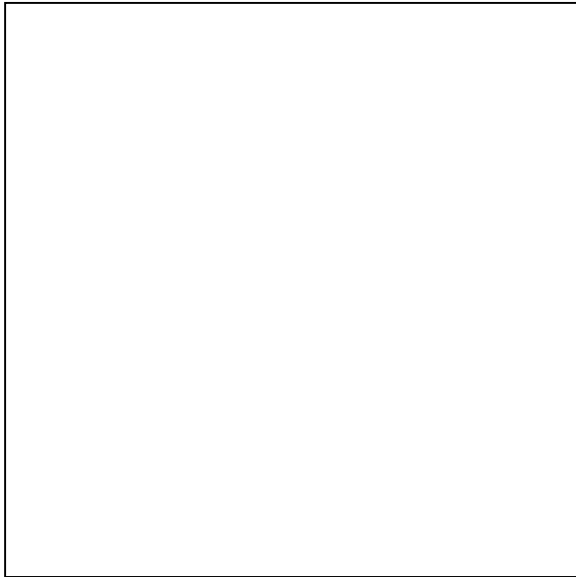


Figure D101.1 Modified Combination 3 inch curb MOD CG-7

D102 - Emergency Vehicle Easements

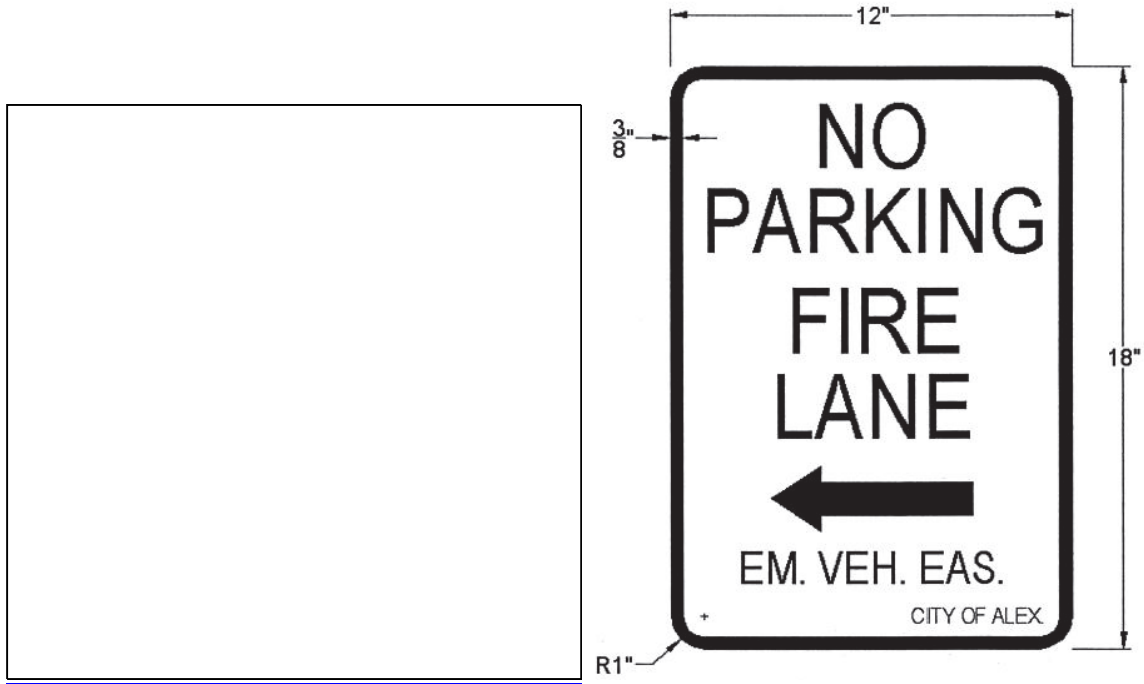
D102.1 Emergency Vehicle Easements. Emergency vehicle easements shall be a minimum of 22 feet across the travel lane. The emergency vehicle easement shall provide access to strategic areas of the building and fire protection systems. Curbing and street components shall conform to the standards established by Transportation and Environmental Services and this document for emergency vehicle easements.

D102.2 Sign Specifications. Emergency vehicle easement signs shall be metal construction, 12-inches wide and 18 inches in height. Provide red letters on reflective white background with a 3/8 -inch red trim strip around the entire outer edge of the sign.

The lettering shall say "NO PARKING," "EMERGENCY VEHICLE EASEMENT," "EM. VEH. EAS," and "City of Alex.," Lettering size shall be as follows: "NO PARKING" - 2 inches, "EMERGENCY VEHICLE EASEMENT" - 2½ inches. EM. VEH. EAS. - 1 inch, CITY OF ALEX. - ½ inch. Directional Arrows - 1 inch by 6 inches solid shaft with solid head - 1½ inches wide and 2 inches deep (For examples, see Figures D102.1, D102.2, and D102.3). Signs shall be mounted with the bottom of the sign 7 feet above the roadway, and shall be properly attached to a signpost or other approved structure such as designated by the fire official. Posts for signs, when required, shall be metal and securely mounted. Signs shall be parallel to the direction of vehicle travel and posted so the directional arrows clearly show the boundaries and limits of the Emergency Vehicle Easement. In areas where emergency vehicle easements involve two-way traffic, double mounted signs shall be provided. The maximum distance between signs shall be 100 feet. Other special signs or modifications to emergency vehicle easement signs shall be approved by the fire official.

D102.3 Fire Dept. Access Lanes/Mountable Curbs. Where curbing is a component of the emergency vehicle easement, the curbing construction shall conform to weight and grade requirements for vehicular traffic. In no circumstances shall a raised curb be located in the path of travel in an emergency vehicle easement. Where a mountable curb is provided as part of an emergency vehicle easement, emergency vehicle easement signs shall be posted at the point nearest the edge of the emergency vehicle easement, but in no case within the clear width of the emergency vehicle easement.

D102.4 Maintenance of Emergency Vehicle Easements. It is the responsibility of the property owner to maintain signage, access, and the drivability of the Emergency Vehicle Easement at all times. This includes Emergency Vehicle Easements constructed with materials that permit apparatus to drive on grass surfaces.



**Figure D102.1 EVE Sign
Left Arrow**

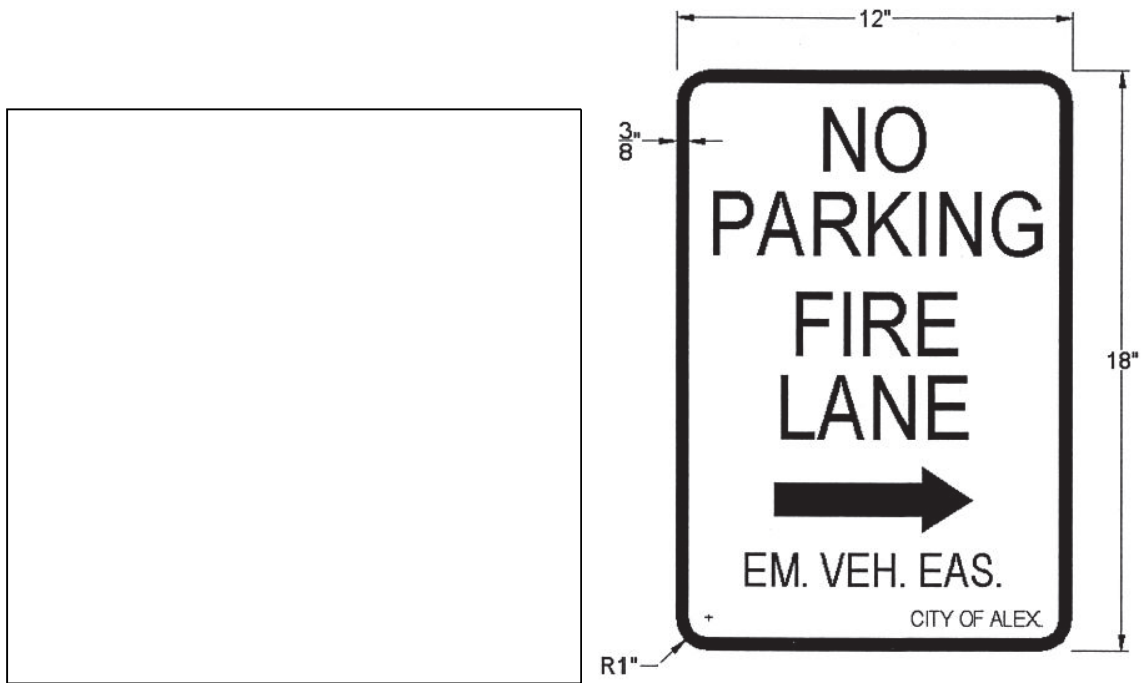


Figure D102.2 EVE Sign Right Arrow

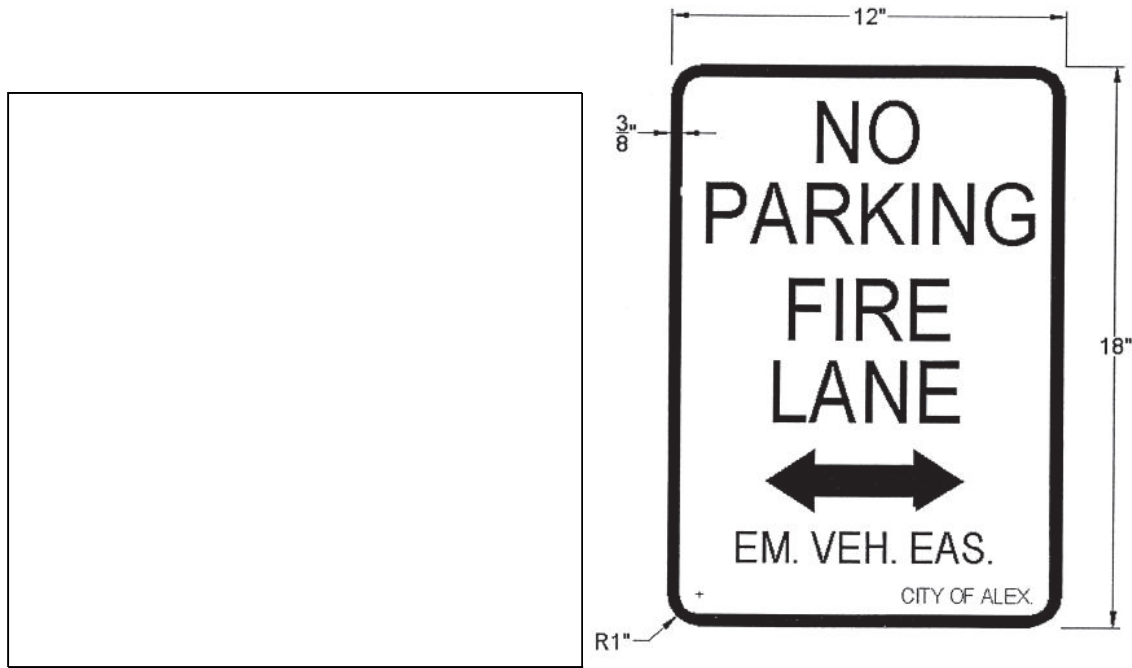


Figure D102.3 EVE Sign Left and Right Arrow

SECTION D103 - CONVEYANCE OF EMERGENCY VEHICLE EASEMENT TO CITY OF ALEXANDRIA

D103.1 General. The property owner shall have an Engineer or Surveyor submit to the Transportation & Environmental Services Department a preliminary plat indicating location, width, boundary and a description of the composition of easement for the Emergency Vehicle Easement.

D103.2 Agency Review. The Transportation & Environmental Services Department and the fire official shall review the plat to determine whether the Emergency Vehicle Easement is necessary or desirable and has adequate access, width, and turning radius. Transportation & Environmental Services Department will determine if the existing paved surface meets city standard (CSAP-1A). All elevated surfaces shall meet H-20 specifications. If the Emergency Vehicle Easement is attached to the terms and conditions of a Special Use Permit, then the applicant must also file with the City's Planning & Zoning Office for review. All appropriate agencies will comment on the content of the plat.

D103.3 Approval. If approved, the applicant will submit a final plat and descriptive deed. The City of Alexandria will sign and return to applicant for recordation.

D103.4 Recordation. Upon recordation, the applicant will report deed book and page number (instrument number) to Transportation & Environmental Services Department so information can

be kept on file. The final plat and bond will not be released until the deed has been recorded. (Ord. No. 4725, 6/25/11, Sec. 1; Ord. No. 4960, 6/13/15, Sec. 1)

Section 2. That this ordinance shall become effective on July 1, 2018.

ALLISON SILBERBERG
Mayor

Final Passage: June 23, 2018