ORDINANCE NO. 211

AN ORDINANCE to amend Ordinance 207 of the City of Alexandria approved March 30th, 1936, entitled "An Ordinance for the regulation of plumbing work; for the appointment of a plumbing inspector and for the licensing of plumbers in the City of Alexandria, Virginia," by repealing and re-enacting Section 16 of Part IA; by repealing and re-enacting Section I of Part III; and by adding thereto Parts XVIII, XIX, XX, XXI, XXII, XXIII, XXIV, XXV, XXVI and XXVII.

BE IT ORDAINED by the Council of the City of Alexandria, Virginia:

Section 1. That Ordinance 207 of the City of Alexandria, approved March 30, 1936, be amended by repealing and re-enacting Section 16 of Part IA, by repealing and re-enacting Section I of Part III, and by adding thereto Parts XVIII, XIX XX, XXI, XXII, XXIII, XXIV, XXV, XXVI and XXVII, the same to read as follows:

PART IA—EXAMINATION, LICENSE, PENALTY

Section 16. It shall be unlawful for any master plumber to do any plumbing or gas fitting except minor repair work not involving the installation, removal or renewal of pipe or fixtures until he shall have applied for and received a permit from the Inspector of Plumbing.

The fees for permits shall be as follows:

Plumbing in new buildings (plus $0.50 for every plumbing fixture or floor drain). (This fee applies also to putting complete new plumbing in existing unplumbed buildings."..... $5.00

Plumbing in additions, or remodeling or changes in existing plumbing systems (plus $0.50 for every plumbing fixture or floor drain) $2.00

Adding plumbing fixtures to an existing system without changes thereto (plus $0.50 for every plumbing fixture or floor drain)... $1.00

Installation of gas service piping in any building (plus $0.50 for every appliance) $2.00

Setting and connecting gas ranges, gas water heaters, or gas heating appliances ..... $ .50

Additional inspections made necessary by undue delays in work, the use of improper materials, failure to be ready for inspection when ordered, or failure to have system tight, each..... $1.00

PART III—DEFINITION OF PLUMBING

Section 1. Plumbing. Plumbing shall be deemed to mean the profession, art, or trade of, and all work done and all materials used in and for: (a) introducing, maintaining and extending a supply of water through a pipe or pipes, or any appurtenances thereof, in a building, lot, premises, or establishment; (b) installing, connecting, or repairing any system of drainage whereby soil, foul waste, surplus water, gas, odor vapor or fluid is discharged or proposed to be discharged through a pipe or pipes from any building, lot, premises or establishment into any main public or private sewer, drain, pit, box, filter bed, leaching well, septic tank or other receptacle or into any natural or artificial body of water, or water course or open ditch, on public or private property; (c) ventilating any building sewer or fixtures, or appurtenances connected therewith; (d) connecting any building, lot premises or establishment, with any public or private water main or service pipe, or with any public or private sewer or other underground structure; (e) and in performing all class of work generally done by plumbers.

The installation and connection of gas ranges, gas water heaters, and gas heating appliances and the running of gas pipes therefor shall also be done by licensed Master Plumbers, or by gas fitters.

PART XVIII—GAS FITTING

Section 1. Definition. Gas fitting shall mean the installation of a piping system and fixtures or devices (gas engines, refrigerators, ranges, stoves, logs, heaters, furnaces, lights, etc.) for conveyance and consumption of gas for power, refrigeration, heating or illumination purposes, and all their attachments and appurtenances and the maintenance in good and safe condition of the system and the alteration or repair of same.

Section 2. Scope. Every building shall have its system supplied by an independent gas service. The gas company shall install the service pipe and connect same with the piping system through an approved meter, only after receiving notification of issuance of certificate of approval of gas fitting. Service pipes passing through masonry walls shall be protected by an approved sleeve, with such openings made thereby closed in a waterproof and gasproof fashion. Service pipes shall be run in the open from entrance wall to meter.

PART XIX—MATERIALS AND FITTINGS

Section 1. Outside Cocks. Every building supplied with gas through a pipe of 2 inch diameter or more, or in which more than one gas meter is operated, and all places of public assembly regardless of size of supply pipe, shall be provided with a manually operated approved emergency gas shutoff valve by the gas company. This valve shall be placed as directed by the Chief of the Fire Department and arranged for immediate use by the Fire Department when necessary.

Section 2. Inside Cocks. Each service pipe, whether branch of main, shall have a heavy fullway cock installed close to the inside of the foundation wall, outside the fire shut-off valve. Brass-seated valves shall be used for service pipes over 2 inches in diameter.

Section 3. Meters and Their Location. An approved meter shall be placed in the service line to each gas piping system.

Meters placed in the cellar shall be set on the entrance wall whenever practicable, four (4) feet from the cellar floor. An unobstructed passageway leading thereto shall be maintained. In no case shall the meter be set beneath a stairway, bulkhead, show-window; nor in a cellar, hallway, closed closet, coal or ash vault closer to any furnace, open grate range or gas light than ten (10) feet.

No electrical apparatus capable of producing an arc shall be set with any part thereof closer in horizontal measurement than two (2) feet to a gas meter, nor vice-versa.

Section 4. Materials, Pipes and Fittings. The pipe shall be of the best quality, standard size, wrought iron or steel, or equivalent (except that copper or other approved nonferrous tubing, having a minimum size of $\frac{3}{8}$ inch, may be used for low-demand appliances with the permission of the Inspector of Plumbing).

All fittings (except stopcocks and valves) shall be of malleable iron, galvanized. No concealed unions will be permitted, and only ground joint unions will be permitted when exposed.

All pipes and fittings shall be free from any and all defects.

Section 5. Pipe Sizes. All pipes in the distribution of gas shall be sized suitable for the length required and the capacity of the fixtures or apparatus supplied, in accordance with the following table: (No pipe smaller than $\frac{1}{2}$ inch shall be used except as noted herein):

The following table may be used to indicate the capacity of various pipes for 0.3 inch water column drop. In extending piping the drop in the existing system shall be included, and in no case shall extensions be made of smaller sizes than indicated in Table 1.

TABLE I

Cubic Feet of Gas Per Hour

Diameter of Pipe—Inches

Length of Pipe (Ft.)	½	¾	1	1¼	1½	2	3	4	6	8
15	76	218	440	750	1220	2480	6500	13880	38700	79000
30	55	155	320	535	850	1780	4700	9700	27370	55850
45	44	124	260	435	700	1475	3900	7900	23350	45600
60	38	119	226	380	610	1290	3450	6800	19330	39500
75		97	200	345	545	1120	3000	6000	17310	35300
90		88	180	310	490	1000	2700	5500	15800	32250
105		80	168	285	450	920	2450	5100	14620	29850
120			158	270	420	860	2300	4800	13680	27920
150			140	242	380	780	2090	4350	12240	25000
180			128	225	350	720	1950	4000	11160	22800
210				205	320	660	1780	3700	10330	21100
240				190	300	620	1680	3490	9600	19740
270				178	285	580	1580	3250	9000	18610
300				170	270	545	1490	3000	8500	17660
450				140	226	450	1230	2500	7000	14420
600				119	192	390	1030	2130	6000	12480

TABLE II

Approximate maximum demand of commonly used gas appliances

APPLIANCE	CU. FT. PER HOUR
Domestic Gas Range (Four Burner Top)	100
Domestic Gas Range (Six Burner Top with Extra Oven)	180
Domestic Non-automatic Water Heater	40-65
Domestic Hot Plate or Laundry Stove	20
Gas Steam Radiator per Section	3
Outlet for Lighting Fixture or Bracket	8
Automatic Instantaneous Water Heaters	
Capacity—4 gallons per minute	250
6 gallons per minute	380
8 gallons per minute	500

PART XX—PIPING AND INSTALLATION

Section 1. Location. Piping is to be brought to within three (3) feet of the location of the gas meter. It shall not be run, exposed, on outside walls, nor in vestibule walls; nor on the open under overhanging kitchens or other rooms, built beyond foundation walls.

Section 2. Support. (a) Piping shall not be laid to support any weight (except fixtures) or be subjected to any extra strain.

(b) Number of Supports. The following is the maximum spacing of supports which may be used in continuous piping installations:

⅜" or ½" pipe ..... 6 foot
¾" or 1" pipe ..... 8 foot
1¼" or larger (horizontal) .....10 foot
1¼" or larger (vertical) ..... every floor level

When the length of pipe is shorter than that given in the above table it shall be adequately supported.

Wherever there is a change of direction of 45 degrees or more or a branched fitting is used, support shall be provided at the bend or fitting.

(c) Fastening Pipe. Only such metal pipe straps, iron hooks, hook plates or hangers suitable for the size of pipe to be secured, and of standard strength and quality, shall be used for supporting piping.

Pipe straps or iron hooks shall not be used for fastening pipe of a size over 2 inches. Beyond this size, when the pipe is horizontal and is to be fastened to the floor joists or beams, pipe hangers shall be used; when the pipe is horizontal and is to be fastened to the wall, hook plates shall be used. In the case of a vertical pipe over 2 inches in size, a strap made of band iron fashioned on the job, or a standard form of prepared band strap securely fastened to the wall shall be employed.

(d) Securing pipe to wood wall, partitions, or ceilings. When piping is run on wood walls, partitions, or ceilings, the supports shall be securely screwed (not nailed) to the woodwork at the intervals given in (b). When the piping does not run sufficiently close to the woodwork to admit of its being fastened directly thereto, wood strips spaced at the distances given in (b) shall be securely fastened to the woodwork as above described.

(e) Securing Pipe to Concrete, Masonry, Brick or Tile Walls, Partitions, or Ceilings. When piping is run on masonry, concrete, brick or tile walls, etc., it should be rigidly fastened by hooks, metal straps, or pipe hangers which are securely held to the wall, partition or ceiling by the use of suitable expansion bolts or other approved device, spaced at the distances given in (b). If this method is not practicable, the hooks, metal straps, or pipe hangers shall be fastened by screws to plugs or blocks, which shall be firmly embedded in the masonry, or to wood strips securely fastened to the masonry.

(f) Pipes shall not be fastened to walls of chimneys or flues.

Section 3. Protection Against Strains. (a) Enclosed by Cement, etc. Where piping is enclosed by or embedded in cement, concrete, or other structural material, not reinforced, it shall be so placed as to avoid the strains which may be induced by settling or cracking of the structure.

(b) Passing through Walls. Where piping (not including the service pipe, which is always to be made gas and watertight through the foundation wall) passes through concrete, masonry, brick, or tile walls, it shall be encased, with the pipe resting on the bottom of the casing pipe to provide at least ½ inch clearance above it. The space above the pipe shall be packed with mineral wool or other incombustible material to afford a fire stop, but care should be taken to avoid packing above the pipe in such a way that settling of the wall will produce excessive strain.

(c) Basement Piping. Pipe shall not be run in coal bins or in other parts of a basement where wood, lumber or other material is likely to be stored against it or to subject it to strain. Pipe which is run in a cellar shall be hung from the ceiling and not supported on the walls.

Section 4. Grading. All piping shall be properly graded and sloped toward the risers and meter, if practicable. Main risers shall be provided with drip tee, nipple and cap. Where grading is impracticable the Inspector of Plumbing shall be consulted before such installation is made.

Section 5. Prohibited. No gas pipe shall be run exposed through areas or courts or in an outside frame partition (except where properly protected against mechanical damage or change of temperature), but shall be run underground. No gas pipe shall be laid in cement or concrete unless channel provided therefor is coated with tar or other accepted material. Pipes laid in a damp or cold place shall be properly protected by approved felt pipe covering or acceptable equivalent. Piping shall be run so as not to conflict with the provisions of the Electric Code.

Section 6. Accessibility. All piping in both horizontal and vertical runs shall be so installed as to be available in case of emergency but shall not in any case be imbedded in plaster.

Piping not run in approved chases may be concealed by means of moulding.

Where horizontal runs are made between floors they shall in all cases be run parallel to floor joists.

Section 7. Outlets. All outlets shall be set plumb and securely fastened; outlets for stoves, heaters or other such apparatus shall be not less than three (3) inches above floor and two (2) inches from wall surface. Outlets shall not be located in hazardous occupancies, such as motion picture booths, oil storage rooms, etc. Drop outlets or brackets shall be taken from a T-fitting only, pipe being run sufficiently far to afford easy attachment to ceiling or wall structure.

PART XXI—FIXTURE CONNECTIONS

Connections to all fixtures or devices installed for the consumption of gas shall be of rigid metal. Appliances approved for portable use or which require a vibration joint may be connected with flexible tubing, the cut-off being on the rigid supply, and the tubing shall not exceed 6 feet in length except by special permission.

PART XXII—APPLIANCES

Section 1. Approved. Every domestic or other appliance installed in the gas piping system must be approved, and listed by a nationally recognized organization with functions equivalent to the American Standards Association or American Gas Association, whenever minimum requirements for safety and performance have been established by them for that type of appliance.

Section 2. Location and Adjustment. Every such appliance shall be so located as to be accessible for adjustment, operation and maintenance. Original adjustment shall be made by installer in accordance with manufacturer's rating and instructions.

Section 3. Purging. Each appliance, device or piping system shall be thoroughly purged of air upon institution or restitution of gas service.

Section 4. Control Valves. Unless supplied with the appliance, a control cock or valve shall be provided ahead of the pressure regulator of any appliance.

Every gas cock or valve shall be readily accessible for operation or repair.

Plugs of all cocks shall conform to the specifications of American Standards Association.

Section 5. Regulator. A pressure regulator or governor requiring access to the atmosphere for successful operation, and having a capacity in excess of 10 cubic feet per hour, shall be equipped with a vent pipe leading to the outer air or into a combustion chamber, adjacent to a constantly burning pilot. Means shall be employed to prevent water from entering this pipe, and also to prevent stoppage of it.

Section 6. Controls. Devices employing or depending upon an electrical current to control or ignite a gas supply shall conform to the specifications of the American Standards Association.

PART XXIII—FLUES

Section 1. Where Required. With the exception of appliances in industrial use, all appliances fully automatic in operation with a rated flow capacity exceeding 9 feet per hour and all manually operated water heaters must be connected with an effective flue having a pitch upward to the chimney of ¼ inch per foot and entering at a reasonable distance above the bottom of the chimney and above any furnace flue pipe, and shall not extend beyond the inside surface of the flue lining.

Section 2. Size. The vent pipe or connection shall not be smaller than the size indicated by the vent collar of the appliance. Where more than one apparatus is vented the main vent pipe shall equal or exceed the combined area of the vents for which it acts as a common connection to the flue.

Section 3. Diverters. Incinerators shall be provided with gas tight flue connections. All other gas appliance flues shall be provided with approved back-draft diverters, properly placed.

Section 4. Thermostatic Pilots. Any automatic appliance not flue connected shall be provided with a thermostatic pilot.

Section 5. Chimney Flue. The flue to which the vent pipe is connected shall be of adequate size.

Before making a flue connection, the chimney or flue shall be examined to ascertain that it is properly constructed, clear, and will normally conduct the products of combustion to the outer air.

PART XXIV—ALTERATIONS OR EXTENSIONS OF GAS PIPE

Section 1. (a) No extension or alteration of any existing system of gas piping in a building shall be made without reporting the work to the office of the Inspector of Plumbing for inspection and approval. Extensions shall conform in size to the table of Section 5, Part XIX, and shall be made where the proper size pipe can be maintained, and in no case shall extensions be made with smaller pipe.

(b) When necessary to cut out pipe for extensions or repairs, pipe shall be again put together with right and left couplings, and in no case shall unions or running threads be permitted, except as provided in Section 4—Part XIX.

PART XXV—REPAIRS

Section 1. The Inspector of Plumbing shall promptly condemn and order the removal, reconstruction or repair of any system of gas piping, or portion thereof, which does not conform to these regulations, or is so constructed that it may cause danger to life or health. He shall order the necessary repairs to be made when defects are found in any old system of gas piping, fixture or appliance connected therewith, and such repairs shall be promptly made by the responsible party upon the service of order or notice.

PART XXVI—INSPECTION AND TEST

Section 1. Method. Upon the completion of any system of gas piping in a building it shall be promptly reported to the Inspector of Plumbing for inspection. The outlets shall be suitably capped and the system tested with a pressure of not less than five (5) pounds. This pressure must be maintained for such length of time as will satisfy the Inspector of Plumbing, that the work is sound and tight. No pipe or fitting shall be covered or concealed from view until approved by the Inspector of Plumbing.

Extensions of gas-piping, the introduction of new outlets, and the connection of gas water heaters, gas logs, gas ranges, gas stoves, and radiators, lighting fixtures and engines and appliances shall be reported and subjected to a visual inspection.

The use of open flame will not be permitted in making tests.

Section 2. Use of Water Prohibited. In no case shall gas pipe be filled with water, acid or other liquids to test or tighten leaks, but the pipes shall be tested with air pressure only, and if it is found that water has been used in the pipe it shall be sufficient cause for the Inspector of Plumbing to condemn the whole line of pipe.

Section 3. Liquids In. (a) When water or other liquid is found in a gas piping system the gas fitter responsible for the work will remove the fluid in the presence of the Inspector by such method as may be determined upon by the Inspector of Plumbing in each particular case.

(b) No gas fixture shall be hung until the Inspector shall be satisfied that the piping system has been freed of any liquids that may have been used to tighten same.

(c) When the individual hanging the gas fixture learns of a violation of this section he shall immediately notify the Inspector of Plumbing.

PART XXVII—CERTIFICATE

Section 1. Gas shall not be turned on in any new building nor in any old building following any alterations until the piping and fixtures have been approved by the Inspector of Plumbing and certificate is issued stating that all the gas-fitting work conforms to the regulations contained herein.

Where combination (gas and electric) fixtures, or other apparatus are attached to or form any part of the plumbing or gas-fitting system in any building, all pipe fitting work shall be done by a licensed Master Plumber, or gas fitters.

Section 2. This ordinance shall take effect fifteen days after the day following its publication in the Alexandria Gazette.

Approved this 16th day of June, 1936.

E. C. DAVISON,
Mayor.