



STANDARDS FOR GAS PIPING ON CUSTOMERS PREMISES

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This document is available for viewing and printing on the City of Lancaster website, <http://www.ci.lancaster.oh.us/dept/gas/>, in the gas department forms section. ⁰

PREFACE

This document is intended to be used as a guide by individuals performing work on the Lancaster Municipal Gas (LMG) distribution system. Procedures and practices mentioned herein may not include all applicable local, state, or federal codes that apply to every installation. Where any procedure or practice is not detailed within this document, LMG should be consulted for guidance or clarification.

OPERATOR QUALIFICATIONS

Due to state and federal regulations governing the pipeline industry, persons installing or replacing natural gas service lines and meter settings must be an “Operator Qualified Person”. The service line is the portion of gas piping between the meter and the gas main in or near the street in most cases. LMG will provide customers with a list of locally Operator Qualified plumbers upon request. Plumbers who would like to become operator qualified should contact LMG for more information.

This regulation does not affect piping downstream of the meter outlet; therefore, most inside house piping is exempt. However, installations, alterations, or changes made to piping downstream of the meter, commonly called house piping, shall only be performed by those who have knowledge and experience working with gas piping systems. These individuals shall be familiar with all applicable codes, rules, and regulations.

DOT PART 192

The Code of Federal Regulations Title 49, Department of Transportation Part 192, “Transportation of Natural Gas and Other Gas by Pipeline: Minimum Federal Safety Standards”; Gas Department policies and procedures, and applicable state and local codes shall be followed when installing service lines and meter settings. Piping downstream of the meter, commonly called house piping, is not included.

DOT PART 199

All persons working on service lines and meter settings shall follow the Code of Federal Regulations Title 49, Department of Transportation Part 199 and be part of a drug and alcohol plan.

LMG utilizes Veriforce to verify compliance with these regulations . All persons performing work upstream of, and including, the gas meter must be compliant within Veriforce.

Work performed on House Piping is not included in this regulation.

TABLE OF CONTENTS

	Page
Part I	General 3
1.1	Introduction... ..3
1.2	Service Charge Policy... ..4
1.3	Definitions... ..4
PART II	Customer's Service Line 5
2.1	Request for Gas Service... ..5
2.2	General Requirements Governing Customer Service Lines... .. 6
2.3	Ownership and Responsibility..... 6
2.4	Sizing... ..6
2.5	Materials... ..7
2.6	Location of Service... ..8
2.7	Installation... ..9
2.8	Plastic Insert Renewal of Existing... 11
PART III	METER SETTINGS 13
3.1	General... ..13
3.2	Location... ..13
3.3	Installation... ..13
3.4	Rural or High-Pressure Domestic... ..14
PART IV	HOUSE LINES & VENTING 14
4.1	Ownership and Responsibility... ..14
4.2	Size... ..15
4.3	Mobile Home Park Gas Systems.....15
4.4	Venting.....15
4.5	Fittings.....16
PART V	INSPECTION AND TESTING 16
5.1	New Construction Service Lines... ..16
5.2	New Construction House Lines.....17
5.3	Real Estate Inspections.....17
5.4	Separation Of Gas Loads and Piping by Customers.....18
5.5	Abandoned, Temporarily Disconnected, Or Partially Replaced.....18
5.6	Service Retirement.....19

TABLES

Table 1	Low Pressure Service Line Sizing... ..19
Table 2	Medium Pressure Service Line Sizing... .. 19
Table 3	House Piping Sizing... .. 20
Table 4	House Piping Capacity... .. 20

STANDARDS FOR GAS PIPING ON CUSTOMERS PREMISES

Part I – General

1.1 Introduction

(1) This manual covering the installation and maintenance of gas service lines, meter set assemblies, meters and regulators on customer's premises, and the inspection of the same is published by the LMG for two purposes:

(a) As a compilation of standards in the industry for ready reference of those persons and firms doing work of the nature described herein.

(b) To Describe the inspection and testing of house and service lines which LMG will require before establishing gas service. The standards of this manual pertain to all gas service installations which utilize pipe sizes two inches and smaller. Information on service installations for any establishment having a pressure piping system above two psig or pipe sizes larger than two inches and for all industrial establishments may be obtained from LMG for each individual job.

(2) For house piping installations, appliance installation and venting not covered in this manual, please refer to the **2021 International Fuel Gas Code**. This will be the basis for whether inspections on house line will be performed by the gas department or building code compliance personnel. A copy of the **2021 International Fuel Gas Code** can be obtained online via The International Code Council at iccsafe.org

(3) These provisions are not intended to be all-inclusive. When in doubt as to the proper procedure, consult LMG by calling 740-687-6670 or via email at lancastermunicipalgas@ci.lancaster.oh.us.

(4) For general installation information refer to ASME guide for Gas Transmission and Distribution Piping Systems.

(5) LMG will not assume responsibility for any imperfect material or defective or faulty workmanship in the installation or repair of the customer's service line, house lines, appliances, appliance connections or appliance venting, or for any loss or damage arising from such imperfect material or defective workmanship. The nature and extent of the LMG's inspection and testing is set forth in Part V, and nothing herein shall operate to enlarge or modify LMG's responsibility for inspection and testing as there set out. LMG will advise on gas applications, piping arrangements, and furnish general information on the use of natural gas for residential, commercial, industrial and public authority customers.

(6) Where a conflict exists between this document and current regulations, the current regulations shall prevail.

1.2 SERVICE CHARGE POLICY

(1) LMG may find at times it is necessary to recover a portion of its costs for the following circumstances:

- (a) Damage to a gas facility causing emergency response and/or repairs.
- (b) Meter accuracy testing when requested by the customer. *
- (c) Multiple call backs as described within Section 5.1.7

In such cases, Customers and/or Customer Representatives shall be billed at current rate for labor, equipment, and materials plus a 30% administration fee.

**All fees shall be waived provided the gas meter is determined by testing to be reading inaccurately (outside a +/- 3% tolerance).*

LMG shall provide its customers with most other services on a non- charge basis.

1.3 DEFINITIONS

(1) Appliances – A gas appliance is any device which utilizes gas fuel to produce light, heat, power, refrigeration, or air conditioning.

(2) Service Lines

(a)Company Service Line – The company service line is the piping, which extends from the gas main to the customer service line. The company service line ends at the property line or the curb valve where the gas supplied by LMG passes to the service line of the customer; whichever is farthest downstream.

(b)Customer Service Line – The customer service line is the piping, which extends from the end of the company service line at the property line or the curb valve (whichever is farthest downstream) to the inlet of the meter set assembly or the connection to the house lines if there is no meter set assembly.

(3) Service Line Pressure

(a)Low Pressure Service Line – Any service line in which the gas pressure is substantially the same as that delivered to the customer’s appliances and a service regulator is not required.

(b)Medium and High-Pressure Service Lines – Any service line in which the gas pressure is substantially higher than that delivered to the customer’s appliance and a service regulator is required.

(4) House Lines – House lines consist of all the piping and fittings from the outlet of the meter set assembly to the appliance connectors. This is also referred to as “house piping”.

(5) Meter Set Assembly – The meter set assembly is the piping, fittings, and meter valve, including the meter and the service regulator, where required, installed to connect the customer service line to the house lines.

(6) **LMG** – The Lancaster Municipal Gas Company is herein referred to as LMG.

(7) **Customer** – The customer is the person, firm, or corporation to which natural gas is delivered.

(8) **Relined Customer Service Line** – The relined customer service line consists of the in-place iron, steel, or plastic gas piping and fittings, the plastic reline tubing and the appropriate adapter fittings.

(9) **Approved** – Approved, as referred to material items herein, signifies that these materials have been qualified through testing and/or experience by LMG and have been found to be acceptable for use in the gas piping systems covered by this manual.

PART II – CUSTOMER’S SERVICE LINE

2.1 - REQUEST FOR GAS SERVICE

(1) Request for service should be made by the customer or customer’s representative as soon as the structure is planned. Information on how to make this request may be obtained by a telephone call to the local Gas Company Office, telephone 740-687-6670 or online at <https://www.ci.lancaster.oh.us/184/Gas>.

(2) Information Required from Customers

(a) Full Legal Name

(b) Exact address and description of the location at which service is requested.

(c) Phone number

(d) Email Address

(e) Type of occupancy, such as residence (single or multiple), commercial, church, school, industrial, municipal, or other public use.

(f) Contemplated use of gas, such as space heating, air conditioning, water heating, cooking, incineration, clothes drying, gas light and grill or commercial and industrial process.

(g) Gas pressure required.

(h) Estimated date gas service will be required.

(3) For instruction on how to obtain gas service please contact LMG at 740-687-6670, or refer to the website at <https://www.ci.lancaster.oh.us/184/Gas>

2.2- GENERAL REQUIREMENTS GOVERNING CUSTOMER SERVICE LINES

- (1) Single-family dwellings and doubles, duplexes and apartments having a common basement to all tenants, shall have only one customer service line unless otherwise approved by LMG. For doubles, duplexes and apartments having a divided basement, the customer service line shall be split to provide separate branch line and external shut-off for each division of the building.
- (2) A separate customer service line shall not be installed to a garage, workshop, or other small buildings on a lot where there already exists a service line to the residence or main building of the customer unless otherwise approved by LMG.
- (3) A customer's service line (as defined in Section 1.3.3) shall not penetrate and then exit a building wall structure prior to the meter set assembly.
- (4) Customer service lines and house lines shall not be split or extended to serve multiple buildings without LMG approval and in no case shall they cross property lines. It is the property owner's responsibility to verify the newly installed customer service line remains entirely on the property being served.
- (5) A meter valve shall only be operated by persons qualified and authorized by LMG. Prior to operating a meter valve, LMG shall be contacted to request authorization.

2.3 OWNERSHIP AND RESPONSIBILITY

The materials, installation and location of the customer service lines shall be subject to the standards contained herein. Such lines shall be subject to inspection and testing as provided herein, LMG assumes no responsibility for its condition. While LMG will perform certain safety inspections, the customer shall be responsible for the installation and continued maintenance of the customer service line at his/her own expense.

2.4 SIZING

In sizing the customer service line, the entire service line (company service plus the customer service line) shall be treated as a single unit.

- (1) The types of service available and specifications on sizing are listed below. The pipe sizes shown are the minimum requirements for the types of service available. For other service line sizes, consult LMG.
 - (a) Low Pressure Service Lines – The minimum size of the low-pressure customer service line shall be 1 ¼-inch nominal pipe size unless otherwise approved by LMG. For residential use, the load requirements may be based on the total rated input of both the central heating equipment and automatic water heating appliances. In the absence of central heating equipment, load requirements for the residence shall be determined for the total input requirements for all appliances. The maximum pressure drop should not exceed ½ inch water column (w.c.)

between the main and the meter set assembly. (Table 1)

(b)Medium Pressure Service Lines – On medium pressure service lines, the customer service line shall not be less than 1– inch CTS (1 1/8 inches OD unless otherwise approved by LMG. The line size installed shall be such that the pressure drop between the main and the meter set assembly does not exceed 10 percent of the distribution system’s minimum design pressure (Table 2).

2.5 -MATERIALS

(1) Material Tracking and Traceability

Individuals performing new construction or replacement work on the customer service line or meter set assembly shall be required to collect and provide for the retention of data information specific to the location and material makeup of the pipeline and/or component(s) being installed. At a minimum data shall include: component type, material manufacturer, manufacture date, lot number, material type, material size (including pipe wall thickness). An LMG service technician can assist with identification of this data.

(2)- Steel Service Pipe

(a)Where coated steel pipe is to be used for underground customer service lines, consult LMG for material and installation requirements.

(b)Newly installed bare steel service lines are prohibited from underground use.

(3) Plastic Service Pipe and Tubing

(a)Plastic service pipe and tubing shall conform to ASTM D2513–18a Specifications for Thermoplastic Gas Pressure Pipe, Tubing and Fittings.

(b)The following sizes of plastic pipe are approved for use underground. Yellow medium density polyethylene pipe and components are preferred for new installations and replacements. Repair work shall only be performed in situations approved by LMG where entire replacement of the service line is impractical.

<u>Nominal Pipe Size</u>	<u>SDR Ratio</u>	<u>OR</u>	<u>Wall Thickness</u>
1” CTS (1 1/8” OD).....		0.099”	
1 ¼”.....	10		
2”.....	11		
3”.....	11.5		
4”.....	11.5		

(4) Risers

(a) Outside Meter Setting – An approved flexible steel casing or rigid non- corrosive (anodeless) steel encased plastic service line riser, shall be installed with all outside meter setting installations utilizing nominal

pipe sizes of two inch and smaller. A wall mounting plate or bracket fastened to the riser and building wall shall be used to firm the installation. Where it is not practical to attach the wall bracket to the building wall, a heavy gauge steel stake firmly embedded parallel and immediately adjacent to the foundation wall shall be used as a support. The riser shall be installed in such a position that the completed meter set assembly will allow approximately six (6) inches clearance between the bottom of the meter and finished grade.

(b)Outside Riser, Inside Meter Setting – Consult LMG prior to performing this installation.

(c)Inside Riser, Inside Meter Setting – Consult LMG prior to performing this installation.

(d)Risers in Concrete or Asphalt – Where a riser passes through a walk, patio or driveway, it shall be installed through a sleeve or other means of providing a space between the riser and the walk, patio, or driveway. The two (2) inch minimum space between the sleeve and riser shall be filled with sand.

(5) Meter Valves

(a)Meter Valves approved by LMG shall be used. Valves, nominal pipe sizes 3/4, 1 and 1 ¼-inch, shall be of the insulating union type with a lock wing head or equivalent. These meter valves shall be provided with a drilled and tapped 1/8-inch port on the inlet side of the valve body for pressure testing and verification purposes. An Allen head plug shall be used to close the port.

(b)Where the inlet piping to a single meter set assembly is 2-inch nominal pipe size, an insulating union, flange or coupling shall be installed in the setting above ground and downstream of the meter valve to electrically isolate the service line from the house lines, in addition, a test tee shall be installed above ground upstream of the meter valve.

(c)On service lines designed to operate at pressures of 100 psig or less, the meter valve shall have a manufacturer's rated working pressure of not less than 125 pounds per square inch. On service lines designed to operate in excess of 100 psig, the manufacturer's rated working pressure of the meter valve shall be 1.5 times the maximum allowable operating pressure of the service line.

2.6-LOCATION OF SERVICE

- (1) The route of the service line (company and customer) is determined by the location of the meter set assembly and the main. In selecting the location of the service line, consideration shall be given to the best location for the meter set assembly.
- (2) Where practical, the customer service line shall be installed in a continuous straight line with the company service line to the point at which connection is made to the riser or the piping enters the outer masonry wall of a building below grade.

- (3) Where practical, underground piping paralleling a foundation wall shall be at least 3 feet from the wall to a point opposite the meter setting location. The underground piping shall not parallel the foundation wall for more than 15 feet unless otherwise approved by LMG.
- (4) For piping underground beneath buildings please refer to the 2021 International Fuel Gas Code, chapter for Piping System Installation.
- (5) The customer service line shall not be laid under concrete or other hard surface, walks or driveways except where it may be necessary to cross under such walks or driveways. Where walks, in excess of eight feet in width, or driveways extend from curb to foundation wall of the full width of the property, such as at service stations, and places of business, a vent shall be installed at the customer's expense over the line near the foundation wall.

2.7 INSTALLATION

(1) Plastic Service Lines General

(a) The use of plastic pipe for service lines is limited to customer service lines designed to operate at 60 psig or less. Plastic piping shall not be installed above ground. It shall not be installed in vaults or other below grade enclosures, unless it is completely encased in a gas-tight metal pipe and metal fittings having adequate corrosion protection.

(b) Plastic pipe shall not be pushed or pulled over sharp projections, dropped or have other objects dropped on it. Any kinks, buckles, gouges, or grooves that exceed ten (10) percent of the pipe wall shall be removed by cutting out the damaged portion as a cylinder and shall be replaced. At all times, the plastic material shall be protected from fire and excessive heat. Plastic pipe and tubing should be stored and protected from damage by crushing, piercing, or extended exposure to direct sunlight. As a rule of thumb, never store plastic pipe outdoors for more than six (6) months. It should be placed inside or covered to protect it from exposure to direct sunlight. LMG must be able to determine that the cumulative exposure of the pipe does not exceed the manufacturer's recommended period of exposure or two (2) years, whichever is less.

(c) Plastic piping shall be installed in such a way that shear or tensile stresses resulting from construction, backfill, thermal contraction and external loading are minimized. The piping shall be laid on undisturbed or well compacted soil. The piping shall not be supported by blocking. The material used for the backfill in contact with the pipe shall be free of rocks, building materials, etc., that might cause damage to the pipe. Plastic pipe shall be installed with sufficient slack to provide for possible thermal contraction. Cooling may be necessary before the last connection is made, under extreme temperature conditions.

(2) Trenching

(a) The customer service line shall be laid on undisturbed or well-compacted soil in a separate trench. The customer service line shall not be run through septic tanks and leaching beds, laid in the same trench with sewer piping or electrical cables or laid below un-jointed ceramic field tile. It shall not be laid on a bench or offset of a deeper trench.

(b) The trench shall be graded uniformly to provide solid and continuous foundation for the pipe. Where it is necessary for electrical or telephone conduits or water pipes to pass either over or under the service line underground, there shall be a vertical clearance of at least twelve (12) inches between the gas service line and the other facilities.

(c) Customer service lines installed in a separate trench shall be laid at sufficient depth to provide a minimum of twelve (12) inches of cover. Please consult a LMG technician for additional guidance should this minimum depth be impractical.

(e) Where joint trenching is used, the gas pipe and other utility services shall be installed at a minimum depth of eighteen (18) inches in a ditch not less than 24 inches in width. The gas and water services shall be separated a minimum of eighteen (18) inches at the bottom of the trench.

(3) Directional Drilling

(a) All lines installed by directional drilling must have a minimum of Twelve (12) inches of cover.

(b) A weak link is required in accordance with CFR 49 Part 192.3 anytime gas pipe is installed.

(c) Location of the bore path must be visibly marked on the ground. Legible bore depths must be recorded by painting depths on ground or providing a written bore summary. The written bore summary must include measurements that can be utilized to determine the exact location of the line.

(d) LMG may require the service line to be spotted in several locations to verify clearances or depths.

(e) All utilities that are crossed must be spotted and left open for LMG to inspect.

(4) Joining Pipe

(a) Plastic service lines shall be installed in one continuous length of pipe between the curb valve or fitting at the property line and the riser, unless otherwise approved by LMG. Where it is necessary to use more than one length of plastic pipe in the customer service line, the lengths shall be joined by either an approved stab type coupling or heat-fusion joint. All joined sections must not be backfilled until inspected and approved by LMG personnel.

(b) The procedure and equipment recommended by the manufacturer of the approved plastic pipe for making heat-fusion joints shall be used.

(c) Direct application of heat with a torch or other open flame to the plastic pipe is prohibited.

(d) All equipment used in the heat fusion process shall be inspected in accordance with written manufacturer's instructions to ensure proper operation.

(e) Equipment such as electrofusion machines, pyrometers, and pressure gauges shall be calibrated in accordance with the manufacturer's instructions. Documentation demonstrating compliance with this section must be provided to LMG personnel upon request.

(5) Bends

(a) Changes in direction of plastic piping may be made with bends or elbows under the following limitations.

(1) The bend radius shall be limited to the maximum found within the pipe's manufacturer's instructions. *

(2) The bends shall be free of buckles, cracks, or other evidence of damage.

*Changes in direction that cannot be made in accordance with section (1) shall be made with approved elbow-type fittings.

(6) Tracer Wire

Plastic pipe that is trenched or bored must have a minimum twelve (12) gauge PVC-insulated solid copper wire installed alongside the pipe. If a pipe is encased, a 14-gauge wire may be used in accordance with section 2.8. The tracer wire may not be wrapped around or taped to the pipe but should be as close as practical. The wire must extend up to the meter stop. At least six feet of wire shall be left coiled up at the location of the proposed curb valve on new installations.

(7) Warning Tape

Warning tape shall be installed over the service line on all open cut portions of trench at approximately six (6) inches to twelve (12) inches below the established grade.

(8) Steel Service Lines

Steel service lines shall not be installed unless otherwise approved by LMG personnel.

2.8 PLASTIC INSERT RENEWAL OF EXISTING CUSTOMER SERVICE LINES

(1) GENERAL

(a) When the size of the existing customer service line is 1¼-inch, a plastic insert may be used for renewal work. It is permissible, under certain conditions, to reline sizes other than 1¼-inch by consulting LMG. In all cases where relining the service line with plastic tubing is being considered, the gas demand requirements and the lengths of tubing to be used in the installation must be fully examined. The service to be inserted must have at least twelve (12) inches of cover as verified by exposing both ends.

(b) The use of plastic tubing for insert renewal work is limited to customer service lines designed to operate at pressures of 60 psig or less.

(c) Installation of the plastic tubing above grade is prohibited, except for that plastic that may terminate above ground in an approved riser.

(d) Any excavation(s) made during the course of the installation shall not be backfilled until the installation has been visually inspected by an authorized representative of LMG.

(e) Customer service lines relined with plastic tubing shall be inspected and tested in accordance with the requirements for new construction in Part V of this manual.

(f) Solvents, pipe dope and lubricants except those specifically deemed safe for use with plastic material, shall not be allowed to contact the plastic tubing. Consult manufactures' recommendations.

(2) Sizing

Insert renewal service lines must be sized as new service lines.

(3) Material

Only plastic, steel, or iron piping may be used as casing pipe.

(4) Installation

(a) The casing pipe shall be reamed and cleaned to the extent necessary to remove any sharp edges, projections, or abrasive material which could damage the plastic tubing during or after insertion. The use of pipe insert protector is also required to protect the pipe during the reline process. Each end of the reline must also be sealed to prevent the possibility of future gas migration.

(b) The plastic tubing shall be inserted into the casing pipe in such a manner so as to protect the plastic during the installation. The leading

end of the plastic shall be closed before insertion. Care shall be taken to prevent the plastic tubing from bearing on the end of the casing. The casing end nearest the curb stop must be sealed or taped to prevent gas from entering the casing. The portion of plastic tubing which spans disturbed earth shall be adequately protected against shearing from external loading or settling of backfill by a steel or plastic-pipe sleeve bridging piece.

(c) A minimum of 14-gauge wire shall be installed with the insert plastic. If this wire cannot be installed, contact LMG for alternate means of locating.

PART III – METER SETTINGS

3.1 GENERAL

- (1) LMG will provide and connect a meter for each customer. The gas meter shall remain the property of LMG.
- (2) When service is provided from distribution mains at pressure in excess of one psig, LMG will furnish the service regulator(s). The service regulators shall remain the property of LMG.
- (3) Service regulators and meters shall be installed outside of the building area unless otherwise approved by LMG.

3.2 LOCATION

- (1) LMG reserves the right to determine the location of the meter set assembly.
- (2) The meter set assembly shall be located as near as practical to the point where the house line enters the building. The meter set assembly shall be installed to allow for ready access to the meter(s) for examination, reading and replacement.
- (3) The meter set assembly shall not be installed in a small, unventilated, or confined space. Examples would be, but not limited to; under a deck, in a crawl space, under faux stones, boxed in with wood, etc.
- (4) If the meter setting is located adjacent to a driveway, parking area, or is subject to vehicular traffic, it shall require protection. Consult LMG for assistance in determining the proper protection system required.
- (5) The service regulator vent termination shall be located a minimum distance of three (3) feet from any source of ignition or building opening. Locations where there are extreme temperatures or sudden changes in temperatures should be avoided.
- (6) The meter settings should have a clear view from the road. Avoid placing sets behind bushes or fences that could cause meter reading or maintenance issues. LMG should be consulted where these conditions cannot be easily achieved.

- (7) Service regulators supplied from medium or high-pressure mains shall be installed outside of the building unless otherwise approved by LMG.

3.3 INSTALLATION

- (1) A meter valve approved by LMG shall be installed in the service line upstream of the meter and/or service regulator inlet. Meter valves shall be accessible, operable from ground level, and as near as practical to the inlet of the gas meter and/or regulator.
- (2) Where meters are to be manifolded at one location, a master valve controlling the gas supply to all meters must be provided in addition to meter valves controlling gas supply to each meter. The master valve shall be of the insulating type, or an insulated flange or insulated union shall be installed.
- (3) On multiple meter installations, each meter valve shall be plainly and properly identified by the installing agent with a permanent weatherproof tag, designating the apartment or the part of the building it supplies. These tags are the responsibility of the building owner to maintain.
- (4) The distance between a meter or regulator and any wall shall be a minimum of six (6) inches. On outside meter settings, the bottom of the meter shall be a minimum of six inches above finished grade. The regulator vent shall be a minimum of twelve (12) inches above finished grade and kept cleared of any snow or ice buildup.
- (5) Meter set assemblies shall be plumb and level so that the meter will line up properly with the meter connections.
- (6) All outside steel piping shall be painted in accordance with paint recommended by the manufacturer for use on outside steel pipe and applied per the paint manufacturer's specifications.
- (7) Riser brackets are to be installed above finished grade.
- (8) The area around the meter setting shall be kept free of debris or other obstacles that may inhibit meter reading or maintenance.

3.4 RURAL OR HIGH-PRESSURE DOMESTIC REGULATOR SETTINGS

- (1) Consult LMG for any questions or concerns.

PART IV – HOUSE LINES

4.1 OWNERSHIP AND RESPONSIBILITY

- (1) The Customer shall be responsible for the installation and maintenance of the house lines. Such lines shall be subject to testing at any time as provided herein, but LMG assumes no responsibility for their condition.
- (2) The materials, installation and location of the house lines shall be subject to requirements and specifications within The 2021 International Fuel Gas Code.

LMG requires the following exceptions to the International Fuel Code be met:

(a) Aluminum tubing should only be used on appliance controls as assembled by the appliance manufacture.

(b) Piping over 2" nominal OD or operating at a pressure above two (2) psig shall not have threaded fittings unless otherwise approved by LMG.

Exception: Threaded fittings shall be permitted for all lateral appliance connections one-inch IPS nominal diameter or smaller and operating at a pressure up to and including ten (10) psig

(3) Corrugated Stainless Steel Tubing (CSST) systems shall be installed per the CSST manufactures specifications and the 2021 International Fuel Gas Code. Where a conflict exists between the 2021 International Fuel Gas code and the manufacturer's instructions, contact LMG for additional guidance.

4.2 Size

(1) House lines shall be of such size as to provide a supply of gas sufficient to meet the maximum demand with a recommended pressure drop not in excess of 0.3-inch water column between the outlet of the meter set assembly and appliances with 0.6 specific gravity gas.

(2) Table 3 list the recommended minimum sizes of house lines to the drop line or connection for heating and/or air conditioning equipment and other types of domestic appliances and should be used unless the complete house line system is sized in accordance to Appendix B.

(3) Table 4 may be used to size house lines when a more precise method is deemed advisable.

4.3 MOBILE HOME PARK GAS SYSTEMS

(1) Connection to House Line

(a) The meter riser and house line shall be rigidly supported at the meter setting.

(2) House Line Connector

(a) Connection to the house line shall be made with an approved mobile home connector.

4.4 Venting

(1) For all questions regarding venting, refer to the 2021 International fuel gas code. There are however a few recognized exceptions specific to LMG as follows:

(a) Interior single wall venting shall comply with all manufactures recommendations and standards set in the 2021 International Fuel Gas Code.

(b) Exterior single wall venting is prohibited for use in any new, addition, alteration, renovation, or repair application to any exterior venting system. Service shall not be restored to any appliance that contains exterior sections of single wall venting.

(c) Interior dual wall venting shall comply with all manufacture recommendations and standards set in the 2021 International Fuel Gas Code.

(d) New installation of exterior dual wall venting shall be installed in a chase unless manufactures documentation can be provided that specifically says it is not required.

(e) Before service is restored to an appliance that contains exterior dual wall venting, a chase shall be required if any additions, alterations, renovations, or repairs to the exterior section of its venting system are required.

4.5 Fittings

(1) All fittings must be approved by the International Fuel Gas Code, with one Exception: screw fittings are restricted to above ground use only.

PART V – INSPECTION AND TESTING

5.1 NEW CONSTRUCTION SERVICE LINES

(1) The owner, plumber or owner’s representative shall give LMG notice when work is completed and ready for inspection. All work on the customer service line up to the meter shall be performed by a person who is qualified to LMG’s procedures. This person must also be compliant with an LMG-approved drug and alcohol program.

(2) A new service line shall be visually inspected before the trench is filled. Any excavation(s) made during either plastic tubing insert renewal work or installation of piping by the “plow-in” method shall not be backfilled until LMG has visually inspected the installation. The end connections and any fittings used to join lengths of pipe must remain exposed for inspection by LMG.

(3) Customer service lines shall be given a pressure test using an approved water manometer or device of equal sensitivity (such as a Kulman Instrument). This test shall be performed after construction and immediately before the piping is purged of air and placed in service. This pressure test shall be applied by the service line installer and inspected by LMG. Where a new tap is required, LMG will perform the pressure test provided the customer service line is properly installed and backfilled. This service line installation shall include a properly installed meter setting.

(4) All new medium pressure service lines shall receive a test at 90 psig for a minimum of ten (10) minutes. For high-pressure service lines that operate at a pressure above 60 psig, consult LMG.

(5) Air or an inert gas such as nitrogen shall be used to pressurize the piping. In no case shall natural gas, oxygen, acetylene or other such gases be used.

(6) To locate leakage piping joints should be covered with soapsuds, or a leak-finder liquid. In no case shall ether, freon, or any gas that will produce a toxic atmosphere when burned, be applied onto or injected within the piping to locate leaks.

5.2 NEW CONSTRUCTION HOUSE LINES

(1) House lines to operate at pressures of two (2) psig or less shall be given a stand-up pressure test of not less than three (3) psig for a period of not less than ten (10) minutes with no drop in pressure. (See notes 1,2,3, and 4)

(2) Industrial or Commercial house piping may require a 24-hour test using a chart recording device. This is at the discretion of LMG.

(3) On house lines and pressure test exceeding ½ psig shall be made with manual shutoff valves to the appliances closed or disconnected from the appliance. Afterward, the valves shall be opened and a 14 inches of water column test shall be placed against the appliance control valve(s).

(4) For house lines to operate at pressures greater than two (2) psig, contact LMG for testing procedures.

(5) A soap suds test shall be made at operating pressure of all exposed fittings in the service or house lines which were not included in the pressure drop test.

(6) Test pressure must be measured with a water monometer or device of equal sensitivity (such as a Kuhlman instrument). Any other pressure measuring device designed and calibrated to read, record, or indicate a pressure loss caused by a leak may be used with prior approval by LMG.

(7) The first inspection of any job shall be without charge. In the event the lines do not pass such inspection, or if other unsatisfactory conditions result in disapproval by LMG, the necessary correction shall be made, and the line involved shall again be inspected and tested. Any subsequent inspections will be subject to a charge for such additional inspections.

(8) At the time the service line and house lines are tested by the customer and/or customer's representative, the results of such test will be recorded by LMG on an appropriate form. If the service line and/or house lines do not pass the test prescribed in 5.1.6 the owner, plumber or owner's representative will be notified.

5.3 Real Estate Inspections

(1) LMG does not perform real estate inspections.

(2) LMG must be notified during normal working hours of a failed test or any other unsatisfactory condition on customer service lines or house piping.

(3) Operator Qualified Personnel must perform Real Estate tests on customer service lines.

(4) The test pressure on customer service lines shall not exceed the distribution system operating pressure.

(5) A meter valve shall only be operated by a person qualified to LMG's procedures. LMG shall be contacted prior to operating a valve or performing work of any nature to the gas piping system.

5.4 Separation of Gas Loads and Piping by Customers

(1) Any customer wishing to separate the piping and/or gas loads for the sole purpose of billing shall be approved under the following:

(a) That the customer or customer representative contact LMG prior to scheduling the work.

(b) That all of the customer's gas piping be separated supplying only one apartment and/or section of apartments that it is intended to supply.

(c) That each apartment, duplex, etc. have its own heating plant, water tank, etc. completely separate from any other gas load.

(d) That each apartment, duplex, etc. have its own gas meter when the gas load has been separated and all gas meters shall be installed on a header type of setting and relocated to the outside of the structure with a separate shutoff valve for each gas meter.

5.5 Abandoned, Temporarily Disconnected or Partially Replaced

(1) Abandoned

(a) Only previously abandoned plastic service lines may be considered for service reinstatement. These lines must be tested in the same manner as new, have a means of locating, and pass an inspection by an LMG technician.

(2) Temporarily disconnected or partially replaced

(a) Service lines temporarily disconnected or partially replaced shall be tested from the point of disconnection to the meter valve in the same manner as new service lines before reconnecting. Replaced piping shall be included in the test section.

(b) After completion of the initial test, the piping of the tested section shall be reconnected to the upstream section of the service line and the entire line shall be tested at operating pressure for 3 minutes with no drop in pressure.

(c) A soap suds test shall be made at operating pressure of all exposed fittings in the service line that were not included in the pressure drop test.

(d) As an alternative to (a) and (b) the entire service line may be tested as new after repairs have been made if the service line has a curb valve rated to handle the test pressure.

(e) When testing against a previously installed curb stop, the valve must first be checked for “bleed-by” by connecting an approved pressure testing instrument downstream of the valve and observing the device for a minimum of 5 minutes to check for pressure build-up. Once no build up is observed, apply air slowly and check at several intervals to ensure the valve can hold the test pressure. Should a pressure loss be observed at any time during the test, the test shall be stopped immediately, all air shall be bled from the line, and LMG shall be contacted for additional guidance.

(f) Any low-pressure bare steel service line physically separated from the gas source shall be given a pressure test at a pressure not less than ten (10) psig for at least ten (10) minutes from the point of physical disconnect up to the meter valve.

(g) Any low-pressure service line temporarily discontinued and not physically disconnected shall be given a pressure test at operating pressure.

5.6 Service Retirement

(1) Inactive gas services, with greater than two (2) years of zero gas usage are subject to termination. LMG reserves the right to retire inactive gas services at the tap without notice to the customer. All costs to reinstate service shall be the responsibility of the property owner.

**TABLE 1
LOW PRESSURE SERVICE LINES PLASTIC
PIPE CAPACITIES IN CFH**

Pipe Size	Distance, Ft. – Main to Meter						
	10	50	100	150	200	250	300
1" CTS	373	167	118	96	83	75	68
1 ¼" IPS	1074	480	340	277	244	215	196
2" IPS	3160	1410	1000	820	710	630	580
3" IPS	9280	4150	2940	2400	2030	1860	1700
4" IPS	18430	8240	5830	4760	4120	3690	3360

Capacities based on 0.5-inWC pressure drop and 0.6 specific gravity gas.

**TABLE 2
MEDIUM PRESSURE SERVICE LINES
PLASTIC PIPE CAPACITIES IN CFH**

Pipe Size	Distance, Ft. – Main to Meter						
	10	50	100	150	200	250	300
1" CTS	3830	1570	1070	850	725	640	578
1 ¼" IPS	10840	4430	3020	2410	2050	1810	1640
2" IPS	28180	11530	7840	6260	5340	4710	4260
3" IPS	79300	32430	22070	17620	15010	13260	11985
4" IPS	154970	63380	43120	34120	29340	25920	23420

Capacities based on 16-inWC pressure drop and 0.6 specific gravity gas.

**TABLE 3 HOUSE
PIPING SIZES
FOR SINGLE HOUSES AND/OR APARTMENT UNITS, EACH UNIT
METERED SEPARATELY**

Single Houses and/or Apartment Units

Minimum Nominal Pipe Size

*(a). Meter set assembly to central heating or combination heating and cooling equipment

<u>Total Connected Load</u>	<u>Pipe Length</u>	
0 – 250 cfh (and)	40-150 feet	1 ¼ “
0 – 250 cfh (and)	0 – 40 feet	1 “

** (b) To remote cooling only equipment
(Maximum of 125 cfh input and 40 feet length) ¾ “

- (b) To storage type water heater (only) ½”
- (c) To domestic range (only) ½”
- (d) To domestic clothes dryer (only) ½”
- (e) To domestic incinerator (only) ½”

* Other domestic appliances may be extended from this line.

**This is not to be included in Total Connected Load in (a) above.

Note: Reference may be made to Appendix B for house line sizing when a particular installation is not covered in this Table.

**TABLE 4
HOUSE PIPING
CAPACITY IN CFH**

Length, ft.	Nominal Iron Pipe Size, Inches								
	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4
10	132	278	520	1050	1600	3050	4800	8500	17500
20	92	190	350	730	1100	2100	3300	5900	12000
30	73	152	285	590	890	1650	2700	4700	9700
40	63	130	245	500	760	1450	2300	4100	8300
50	56	115	215	440	670	1270	2000	3600	7400
60	50	105	195	400	610	1150	1850	3250	6800
70	46	96	180	370	560	1050	1700	3000	6200
80	43	90	170	350	530	990	1600	2800	5800
90	40	84	160	320	490	930	1500	2600	5400
100	38	79	150	305	460	870	1400	2500	5100
125	34	72	130	275	410	780	1250	2200	4500
150	31	64	120	250	380	710	1130	2000	4100
175	28	59	110	225	350	650	1050	1850	3800
200	26	55	100	210	320	610	980	1700	3500

Capacities based on 0.3-inWC pressure drop and 0.6 specific gravity g