SUPPLEMENTAL RULES,

REQUIREMENTS

AND

SPECIFICATIONS

GOVERNING THE

INSTALLATION AND MAINTENANCE

OF

GAS SERVICE PIPING, HOUSE PIPING,

METER AND REGULATOR SETTINGS,

APPLIANCE VENTING ON CUSTOMER'S

PREMISES

CK
8-30-56
ADV

filed with

PUBLIC SERVICE COMMISSION OF KENTUCKY

CENTRAL KENTUCKY NATURAL GAS COMPANY

FILED

AUG 30 1956

PUBLIC SERVICE COMMISSION

EFFECTIVE: August 28, 1956

CANCELED JAN. 15 1971

TABLE OF CONTENTS

CK
8-30-55

INTRODUCTION

These requirements and specifications governing the installation and maintenance of gas service lines, house piping, appliance connections, meters and regulators on customer's premises, and the inspection and testing of the same are published by the "Gas Company", whose name appears on the cover hereof, for the instruction and guidance of those persons and firms doing gas fitting work. These requirements and specifications have been adopted in the interest of safe and adequate service to the customer.

These requirements and specifications govern service to both newly constructed buildings and to existing structures where any alterations or changes are being made. It shall be the duty of the customer, owner, or his representative, to notify the Gas Company of any changes or alterations, remodeling or reconstruction, or damages to premises affecting gas piping, including meters, regulators, the customer's service line and house piping on, in, or about, the premises and whether occasioned by accident or design, and gas service shall not be resumed to the premises until all requirements have been met and the lines have been inspected, tested, and approved. When altering or extending house piping or service lines, all changes shall be made to conform to these requirements and specifications.

In applying these requirements and specifications, if any provision herein conflicts with any local ordinance rule or regulation, the local ordinance rule or regulation shall govern in the area in which the installation is made. If gas service is rendered in the same community by one or more companies other than the Gas Company and there has been agreement between all of said companies as to inspection and testing procedures in such communities, said agreement shall control, providing the requirements in said agreement are at least equal to those set forth in this manual.

When conditions are not specifically covered in these requirements and specifications, or other local codes, reference may be made to one of the following:

American Standard for Installation of Gas Piping and Gas Appliances in Buildings - ASAZ21.30-1954

Standards of the National Board of Fire Underwriters for the Installation of Gas Piping and Gas Appliances in Buildings - NBFU No. 54 - 1954

National Fire Protection Association Standards for the Installation of Gas Piping and Gas Appliances in Buildings - NFPA No. 54, 54A - 1954

C/L 8-30-54 pm

It is not intended that these requirements and specifications be all inclusive and where unusual conditions arise or where special service is required, the Gas Company is to be consulted before proceeding with the work.

The Gas Company may refuse gas service to any premises where the gas piping does not conform to these requirements and specifications. The Gas Company will not assume responsibility for any imperfect material or defective or faulty workmanship in the installation of the customer's service line, house piping, appliances or appliance connections, or for any loss or damage arising from such imperfect material or faulty workmanship, on any job of gas fitting inspected or tested by its representative.

SERVICE LINES

The general term "service pipe" or "service line" is commonly used to designate the complete line or connection between the Gas Company main and the meter setting on the customer's premises. Since these lines are constructed in two parts and by different parties, it seems more logical to designate each part. The Gas Company "service line connection" is the line from the main up to and including the curb cock, adjacent to the property line. The "customer service line" is that part from the curb cock to the meter setting.

A. OWNERSHIP AND RESPONSIBILITY

1. The service line connection consists of the connection at the main, necessary pipe to extend to the property line or the curb cock location, curb cock, and curb box. This connection is made by the Gas Company, or its representative, without cost to the customer and it remains the property and responsibility of the Gas Company.

2. The materials, installation and location of the customer service line shall be subject to requirements and specifications contained herein. Such line shall be subject to the inspection and test at any time as provided herein, but the Gas Company assumes no responsibility for its condition.

B. MATERIALS

1. The minimum size of service line connection shall be 1-1/4" and the next larger size service line connection installed by the

Gas Company shall be 2". The size installed should permit the delivery of the estimated maximum hourly rate with 1/2" water column pressure drop or less between the main and the meter location. The customer's new service line shall not be of a size smaller than that of the Gas Company's service line connection.

2. Standard weight black steel line pipe or heavier shall be used for all service lines, size 1-1/4" to 2". For larger sizes consult the Gas Company for specifications. Galvanized pipe is not permitted underground.

3. For low, intermediate, or medium pressure service, fittings shall be standard weight. For high pressure service, fittings shall be extra heavy.

4. All screw fittings are to be black malleable iron of the banded or beaded type. Bushings, unions, screw couplings, all thread nipples, cast iron fittings, or galvanized fittings, solder type fittings and connections are not permitted in the service line.

5. Where more than one length of pipe is required, welding or a compression coupling of the Dresser type (Style 38), or its equivalent, with armored gasket, shall be used to join the lengths of service pipe.

   When welding is used, the welding procedures and the quality of welding shall conform to the procedures and processes in A.S.A. B31.-1.8 - 1955 Code for Pressure Piping for welds on piping systems intended to operate at less than 20% of the specified minimum yield strength.

CK
8-30-56
MW

C. INSTALLATION

1. As soon as, or before the foundation of a structure is built, the customer, owner, or his representative, shall contact the local office of the Gas Company for information as to size, location, and termination points of the service line.

2. The customer service line shall be laid on undisturbed or well compacted soil in a separate trench, avoiding sewers, water pipes, and conduits, and shall not run through septic tanks or leaching beds. It shall not be laid on a bench or offset of a deeper trench. The trench should be graded uniformly to provide solid and continuous foundation for the pipe and should be deep enough to provide at least 12 inches of cover over service pipe.

3. It is recommended that the customer service line enter the foundation above grade where practicable. Where the customer service line enters the foundation below grade it shall enter through a sleeve, and a full joint of pipe (if the service is that long or longer) shall extend from a point inside the foundation. The opening around the sleeve shall be filled with cement grout and the opening between the service line and the sleeve shall be sealed. (See Sketch 5)

4. The customer service line shall be installed in a continuous straight line and at right angles to the building line. Where vertical offsets are required only turns consisting of 90 degree ells, and nipples will be permitted. Bends in pipe are not permitted. (See Sketch 4)

5. Where conditions would indicate the necessity of laying the customer service line under an unexcavated portion of a building, in order to reach the meter setting location, the Gas Company must be consulted. There may be conditions under which the installation may be made. In case permission is given the line shall be cased from a point at least two feet beyond the foundation entry to a point on the riser at least 6 inches above the floor. The ends of the casing shall be sealed by welding to the service. A vent line shall be provided from the casing to a point outside of the building where no hazard will exist. (See Sketch 7)

6. For basementless structures it is permissible to lay the customer service line so as to enter the side wall of the building. The line should parallel the foundation wall, preferably at a distance of not less than three feet from the foundation, to a point opposite the meter setting location. Such a line, carrying gas which is yet unmetered, shall not parallel the foundation or building wall for a distance of more than 15 feet. Where this condition cannot be met, the meter shall be installed on the outside of the building and located so as to comply with above conditions. The customer service line shall be laid in undisturbed ground. (See Sketches 2 and 3)

7. 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 and except where such walks or driveways extend from curb to foundation wall and the full width of the property such as service stations and places of business. Where a customer service line is installed under these conditions, a vent shall be installed at the customer's expense over the line near the foundation wall. (See Sketch 8)

8. Each length of pipe should be examined before connecting and any dirt or obstruction removed. The burr left by the cutting tool should be reamed off. Examine pipe and fittings for condition of threads. Use pipe dope or thread lubricant sparingly and on male threads only.

9. Customer service lines that terminate inside the foundation or building wall and where meters are installed without service regulators, connections at customer's service line shall be made with street ell and ell as shown in Sketch 1 and 9.

   Customer service lines that terminate inside the foundation or building wall and where meters are installed with a service regulator between the service entrance and the meter setting, connections at the customer's service line shall be made with street ell and tee. (See Sketch 10)

10. Customer service lines that terminate at an outside meter setting and incorporate a regulator shall have a tee included in the inlet riser. (See Sketch 6) The side opening of the tee shall be plugged, and the head of the plug used to close this opening shall be drilled for seal wire.

11. The customer service line trench shall not be backfilled until after the line has been inspected and approved by a representative of the Gas Company.

12. No heavy weight or heavy material such as large stones or concrete blocks, and also no cinders or slag shall be placed on the customer's service line or in the fill over the service line.

    No heavy equipment shall be run over the service line or trench after it has been backfilled.

CK
8-30-56
RW

D. GENERAL REQUIREMENTS GOVERNING SERVICE LINES

1. Each building served with gas shall have a separate customer service line, except that a separate line will not be laid for gas service to a garage, work shop, or other building on a lot where there already exists a service line to the residence or main building of the customer.

2. For single family dwellings, and for doubles, duplexes, apartments, terraces or flats having a basement common to all tenants, one customer service line only is required and meters shall be

CANCELED JAN. 15 1971

manifolded at one location. (See Sketch 12) Where the gas main is located in the alley, the curb cock and box shall be located adjacent to the rear property line. Where the gas main is located in the roadway or between the curb and property line, the curb cock and box shall be located adjacent to the front property line. (See Sketch 12)

3. Where doubles, duplexes, apartments, terraces or flats have a divided basement, customer service lines shall be so installed as to provide an external shut-off for each division of the building. (See Sketch 12)

METERS AND SERVICE PRESSURE REGULATORS

A. GENERAL

1. The Gas Company will furnish and connect a meter for each customer, and this meter shall remain the property of the Gas Company.

2. Where service is provided from intermediate or medium pressure lines the Company will furnish the necessary pressure regulator, and this pressure regulator shall remain the property of the Gas Company.

3. A suitable vent, terminating in an insect and rain proof fitting, shall be provided for all service pressure regulators.

4. Service pressure regulators when incorporating a relief device and installed inside shall be vented to the outside to a safe location using 3/4" pipe.

5. Service pressure regulators that do not incorporate a relief device and are installed inside shall be vented to the outside to a safe location using 1/4" pipe or 3/8" metal tubing.

6. Where necessary to make piping alterations, a gas fitter or plumber may remove the meter by first closing the meter stop then disconnecting both the inlet and outlet of a meter and notifying the Gas Company of the removal. Persons not in the employ of, or not having permission from the Gas Company are forbidden to reconnect either the inlet or the outlet of the meter. The meter cock shall be left shut off and the service line outlet shall be plugged. The Gas Company shall be notified to reconnect the meter and turn on the gas.

B. LOCATION

1. The Gas Company reserves the right to determine meter location.

2. Gas meters should be installed as near as practicable to the point where the service enters the building and shall be so located as to be readily accessible for examination, reading, and replacement.

3. All piping from the point where the service enters the building to the meter shall be exposed and accessible.

4. The gas meter shall not be installed in a small, unventilated, or confined space.

5. A gas meter should not be placed where it will be subjected to damage, such as in driveways, public passages, halls, coal bins, etc., or where it will be subjected to excessive corrosion.

6. Gas meters shall be located at a minimum of three feet from any electric panel or meter, and a minimum of five feet from a furnace or incinerator flue connector. It is desirable to avoid extreme temperatures and sudden changes in temperature.

7. Pressure regulators supplied from medium or high pressure mains shall be installed outside of the building where practicable.

CK
4-30-26
LOW

C. INSTALLATION

1. An approved tamper-proof stopcock (a stop cock designed and constructed to minimize the possibility of the removal of the core of the cock accidentally or willfully) shall be installed in the piping between the service line and the meter inlet. All stop cocks 2" and over shall be of the lubricated type.

2. Where six (6) or more meters are manifolded at one location, a master cock controlling the gas supply to all meters must be provided in addition to the cocks controlling the supply to each meter.

3. On multiple meter installations each meter stop shall be plainly marked by a metal tag installed by the gas fitter or plumber, designating the part of the building being supplied.

4. For certain types and sizes of meters the Gas Company will furnish a meter bar to which the meter is to be attached. See Meter Specifications.

CANCELED JAN. 15 1971

5. Distance between meter and any wall shall never be less than six (6) inches. On outside meter settings the bottom of the meter shall be at least six (6) inches above finished grade.

6. Meter settings must be plumb and level so that the meter will line up properly with the meter connections.

7. Typical meter setting installations are illustrated in Sketches 6, 9, 10, and 11.

8. See, "Meter Specifications", for type, size, and dimensions of meters most commonly used, Page 14.

D. RURAL SERVICE FROM HIGH PRESSURE LINES

When the Gas Company has no low, intermediate, or medium pressure mains available, and service is desired from a high pressure line, the customer shall, at his expense, provide suitable regulator or regulators for reducing the pressure in the high pressure line to the standard distribution pressure at the outlet of the regulator setting. The regulator or regulators shall be installed, at the customer's expense, in accordance with plans furnished by the Gas Company and immediately adjacent to the Company's high pressure line. The customer shall provide, at his own expense, suitable and substantial housing for the regulator or regulators and the meter furnished by the Gas Company, as protection for this equipment from the weather and from disturbance by irresponsible parties.

HOUSE PIPING

A. MATERIALS

1. Gas piping in buildings shall be wrought iron or steel pipe complying with the American Standard for Wrought-Steel and Wrought-Iron Pipe, A.S.A. B36.10-1950.

2. All pipe fittings (except stop cocks and valves) shall be malleable iron and (except stop cocks, valves, couplings and unions) shall be of the banded or beaded type.

3. Running threads, right and left couplings, bushings, cast iron fittings, solder type fittings or connections shall not be used.

4. When unions are used they shall be of the ground joint type and shall be center punched to prevent loosening.

5. Only hard seat valves shall be used and all valves requiring packing shall be packed with asbestos material.

6. A.G.A. listed flexible metal connectors, semi-rigid metal connectors and semi-rigid metal tubing and fittings may be used in connecting domestic gas ranges, gas driers, gas refrigerators and water heaters.

B. INSTALLATION

1. All gas piping or gas appliance installation shall be performed with the gas turned off to eliminate hazards from leakage of gas.

2. The customer, at his own expense, shall install the house piping from the outlet of the meter to gas burning appliances.

3. All branch pipes shall be taken from the top or sides of horizontal lines and not from the bottom.

4. Gas piping and fittings shall be clear and free from cutting burrs and defects in structure or threading. Pipe dope or thread lubricant is to be used sparingly and on male threads only.

5. All pipe shall be securely supported by means of straps or hooks of permanent material to ceilings and walls and all strains on piping eliminated.

   The following recommendations are given for spacing of supports in piping installations:

Pipe Size Inches	Support Spacing Feet
1/2	6
3/4 or 1	8
1-1/4 or larger (Horizontal)	10
1-1/4 or larger (Vertical)	Each Floor Level

6. Gas piping shall not be laid in a concrete floor slab.

7. Piping inside any building shall not be run in or through an air duct, clothes chute, chimney or flue, ventilating duct, dumb waiter or elevator shaft.

8. When installing piping which will be concealed (in partitions) the number of fittings shall be kept to a minimum. Unions and swing joints made of combinations of fittings shall not be used.

9. When welding is used, the welding procedures and the quality of welding shall conform to the procedures and processes in ASA B31.1.8-1955 Code for Pressure Piping for welds on piping systems intended to operate at less than 20% of the specified minimum yield strength.

10. When a semi-rigid tubing connector or a connector of flexible metal tubing and fittings is used, it shall connect to a solid pipe outlet in the same room as the appliance. The length of the connection shall not exceed six feet and it shall be installed so as to be protected against mechanical injury. For water heaters the connection shall not exceed 2 feet.

11. Outlet pipes shall be far enough from walls and floors and shall project far enough from them to permit the use of a pipe wrench of suitable size without straining or bending the pipe. All outlets are to be securely capped or plugged.

12. No connection shall be made between a gas line and any water line, air line, or any other line carrying a fluid or gas other than that in the Company's mains since, by accident or design, said water, air, fluid or foreign gas might enter the Company's mains. No regulator shall be installed to control the flow of gas which has gas on one side of the diaphragm and water, steam, or air at more than atmospheric pressure on the other side.

13. Fuel piping to an appliance shall not be less in size than the manifold size or connection at the appliance. Piping and fittings to a central heating furnace or boiler shall not be less than 1-1/4". The drop line to the equipment may be the same size as the manifold.

14. No piping or opening smaller than 3/4" will be approved except for supplying small incidental heaters, bunsen burners, refrigerators and clothes driers.

15. The minimum size of house piping permitted for various types of appliances is shown in Table 1.

TABLE 1

MINIMUM HOUSE PIPING SIZES FOR NORMAL RESIDENTIAL USE

Single Houses		Minimum Size
a.	Meter to first outlet	1-1/4"
b.	Outlet of meter to furnace drop line	1-1/4"
c.	To kitchen range	3/4"
d.	To instantaneous water heater	1"
e.	To storage type water heater	3/4"
f.	To each heating stove (20,000 Btu input or less)	1/2"
g.	To refrigerator	1/2"
h.	To clothes drier	1/2"
i.	To hot plate	1/2"
j.	Main supply line to second floor	3/4"

16. For larger piping installations such as large single dwellings, double houses, apartment houses, commercial buildings, churches and schools, the Gas Company should be consulted on the selection of adequate piping.

17. In remodeling or extending existing piping, connections must be made so that sizes can be maintained in accordance with these requirements and specifications. Where sizes can not be maintained from old house piping, extensions shall be supplied by a separate line of pipe from the meter.

18. A valve or stop shall be installed ahead of each gas burning appliance when required by local ordinance. The valve or stop shall be placed in an accessible position.

CR
8-30-34
CMV

INSPECTION AND TESTING

1. Inspection and testing is required on each job of service piping or house piping.

2. Inspection and testing of new or repaired service piping shall be made before the trench is filled.

3. A request for inspection and test must be made at the Gas Company's office at least twenty-four (24) hours in advance of the time when inspection is desired.

4. New piping will be subjected to an air pressure test of not less than ten (10) inches mercury column (5 psi) and no loss in pressure must be shown over a period of not less than five (5) minutes.

   Exception: Medium or intermediate pressure services shall be tested at a pressure equivalent to 1.5 times the working pressure, but not in excess of 50 psig.

   On house lines this test will be made with manual shut-off valves to the appliances closed, or if there is no shut-off valve the appliance should be disconnected and the line capped.

   For piping larger than 2", consult the Gas Company for testing procedures.

5. Where existing piping is remodeled or extended the existing piping may be subjected to the same test as new portions.

6. In no case shall oxygen, acetylene, ether with air, or any inflammable material be used as a substitute for atmospheric air in testing lines.

7. At the time the line or lines are inspected and tested, a report of the test of the lines by the owner or his representative and of the inspection of the installation by the Gas Company's representative shall be made on the form provided by the Gas Company, to indicate the conditions existing at the time of the test and inspection. The form shall be signed both by the Gas Company's representative and the owner or his representative, and a copy given to the owner or to such representative for delivery to the owner.

8. The first inspection and test at any premises, including both service lines and house lines, shall be without charge. In the case of leak, error, patent defect or other unsatisfactory condition resulting in the disapproval of the line by the Gas Company, the necessary correction shall be made at the owner's expense and then the line will be inspected and tested again by the Gas Company. Each additional inspection and test, when required after correction shall be subject to a charge of Two Dollars ($2.00).

9. Final connection and/or service established between the Gas Company's service connection and the Customer's service line will be made by the representative of the Gas Company after it has been determined that the Gas Company Requirements and Specifications have been fully complied with.

APPLIANCE VENTING

The policies described in the following pages were established because the Gas Company insists upon following what it considers to be safe practices to safeguard against the misuse of appliances and to provide for the greatest safety and economy in the operation of appliances.

The matter of ventilation also has a part in the formation of Company policy. Each cubic foot of gas burned requires about ten (10) cubic feet of air for complete combustion and 1/100 pint of water vapor is formed for each cubic foot of gas burned. Therefore, appliances burning in a room without reasonable ventilation could soon consume the oxygen in the air and saturate the air with moisture to the point that discomfort would be felt by the occupants. A gas appliance vented into a flue operates as an exhaust system which will cause fresh air to be drawn into the room.

ek
8-31-26
-ov

METER SPECIFICATIONS

All Dimensions in Inches

	Type and Size	Capacity Cu. Ft./Hr.	Connection Size	Spread of Connections	Meter Bar*	Height With Swivels	Height Less Swivels	Width Over All	Front to Back
IRON METERS									
Iron Case	A	165	1	6	7	18	15	9	11
	5B	165-175 or 225	1 or 1¼	6	7	18	14	9	10
	10B	250	1 or 1¼	6⅞	7	19	15½	10	11
	20B	350	1¼ or 1½	8¼		22	18	13	13
	25B	400	1¼	8¼		22	18	13	13
	30B	550	1½	11		26	22	16	15¼
	60B	950	2	13⅛		31	26	18	18
	80B	1250	2 FPT	17¼			30	19	18
	250B	3000	4 FPT	21½			35	23	26
	500B	4800	4 FPT	26			45	30	29
Iron Clad	1	150	1	6	7	18	15	9	8
	2	250	1¼	7	7	21	18	12	10
	3	300	1½	7¾		25	22	15	11
	4	500	2	11		30	27	19	13
Sprague	1A	175	1	6	7	18	14	10	8
	240	240	1	6		18	14	10	8
	2	305	1¼	7 3/16	7	19	16	11	9
	3	400	1¼ or 1½	6 25/32		21	18	12	10
	4	675	1½	10		27	22½	16	14
	5	856	2	10⅞		30	25	18	16
	5A	1000	2	10⅞		32	27	18	16
Emco	0	175	1 or 1¼	6	7	17	13	10	9
	1	275	1 or 1¼	7	7	18	14½	11	10
	2	415	1¼ or 1½	8		21	17	13	10
	2½	850	2 FPT	20⅜			26	21	14
	3	1250	2 or 3 FPT	22½			28	23	17
	4	2250	3 or 4 FPT	26½			33	28	20
	5	5000	4 FPT	37			51½	40	21
Rockwell	175	175	1 or 1¼	6		17	13	10	9
	250	250	1¼	6		18	14½	11	10
	415	415	1½	8		21	17	13	10
	800	800	1½	11		27	23½	17	13
TIN METERS									
	5	150-250	¾	11	11	20	17	13	10
	5	150	½	11¼		20	17	13	10
	10	250-300 or 400-425	¾	13⅜	11	21	18½	15	12
	20	250-400 or 450-600	1	16	16	26	22	18	13
	30	450-600	1¼	18	18	31	26½	20	15

* All meter bars tapped 1¼ inch for service and house line
Consult Gas Company for meters requiring meter bars

A. APPLIANCES REQUIRING FLUES OR VENTS TO OUTSIDE ATMOSPHERE

The following appliances must be vented before service will be established and before a Gas Company serviceman may light or adjust them.

1. Automatically controlled appliances which use more than 5,000 Btu per hour, except those listed in paragraph B.

2. All space heating, steam and hot water boilers, warm air furnaces, floor furnaces, unit heaters, duct furnaces and recessed heaters.

3. Conversion burners in coal furnaces or boilers.

4. Circulating heaters having provision for a vent.

5. Room heaters in sleeping quarters.

6. Room heaters installed in sleeping quarters for use of transients, as in hotels, motels and auto courts, shall be connected to an effective flue or vent and equipped with an automatic safety pilot.

7. Room heaters installed at any location in institutions such as Homes for the Aged, Sanitariums, Convalescent Homes, Orphanages, etc., shall be connected to an effective flue or vent and equipped with an automatic safety pilot.

8. Automatic water heaters of any type which contain a thermostatic device for regulating the gas to the main burner.

9. Water heaters, automatic or non-automatic, installed in a bathroom, toilet, utility room or other confined space.

10. Gas-fired incinerators.

CK
8-30-54
ADV

B. APPLIANCES NOT REQUIRING VENTS

The following appliances do not ordinarily require venting.

1. Domestic gas ranges.

2. Domestic gas clothes driers.

3. Gas refrigerators.

4. Gas hot plates.

CANCELED JAN.15 1971

C. PROPER VENTING FOR A GAS APPLIANCE

1. *Appliances must be vented to a bonafide chimney flue of brick, tile, transite, or metal. Transite or metal flues are only effective when they run in the interior of the building.

2. *Flues should extend two (2) feet above the highest point of the roof. In many instances, if the surrounding buildings are higher, the flue should extend above the highest roof in the vicinity to insure a good draft and prevent down drafts.

3. *Flues must not open into attics, under porches or similar spaces.

4. *Flues should be constructed or installed in such a way as not to become a fire hazard. Where flue or vent connectors pass through partitions of combustible construction, ventilated thimbles should be used. Horizontal runs should be supported at intervals of not over six (6) feet.

5. No gas appliance shall be vented to a fireplace flue unless the fireplace and other openings in the flue above are effectively sealed.

6. The flue or vent connector shall maintain a continuous pitch or rise from the appliance to the flue or vent. A rise of at least 1/4 inch to the foot (horizontal length) should be maintained.

7. The horizontal run of the connector should be as short as possible and the appliance located as near the flue or vent as practicable. The maximum length of horizontal run should not exceed 75 percent of the height of the flue or vent.

8. No manually operated damper shall be placed in any flue or vent connector. Fixed baffles ahead of draft hoods are not classified as dampers.

9. The flue or vent connector shall not be smaller than the size of the flue collar or the size of the outlet of the draft hood supplied by the manufacturer of a gas-designed appliance.

10. Two or more gas appliances may be vented through a common flue or vent connector when necessary, if joined by Y fittings as close as practical to the flue or vent, and provided the size of the common flue or vent is sufficient to accommodate the total volume of flue gases. Y fittings shall be made so that the angle at which the flue or vent connectors intersect is as small as possible and should not exceed 45 degrees. 90° tees are not permitted.

11. *A draft hood shall be installed in the position for which it was designed with reference to the horizontal and vertical planes and shall be so located that the relief opening is not obstructed by any part of the appliance or adjacent construction. If the draft hood is not a part of the appliance or supplied by the appliance manufacturer, it shall be the same size as the appliance flue collar.

12. An automatic gas appliance vented into the same chimney flue or vent pipe with a furnace burning a solid or liquid fuel must have an automatic safety pilot.

13. If any gas appliance with an automatic pilot is lighted, the operation of the pilot safety must be checked.

14. The Company will be glad to consult with owners, architects or contractors in making layouts for special installation requirements.

D. FLUE PIPE SIZING

Particular attention must be given to cases where more than one gas appliance is vented to the same flue to determine that the flue is large enough. In such cases, add the inputs of the appliances together to determine if the area of the common flue is great enough to handle the total products of combustion.

The following Table 2 may be used in determining proper flue size:

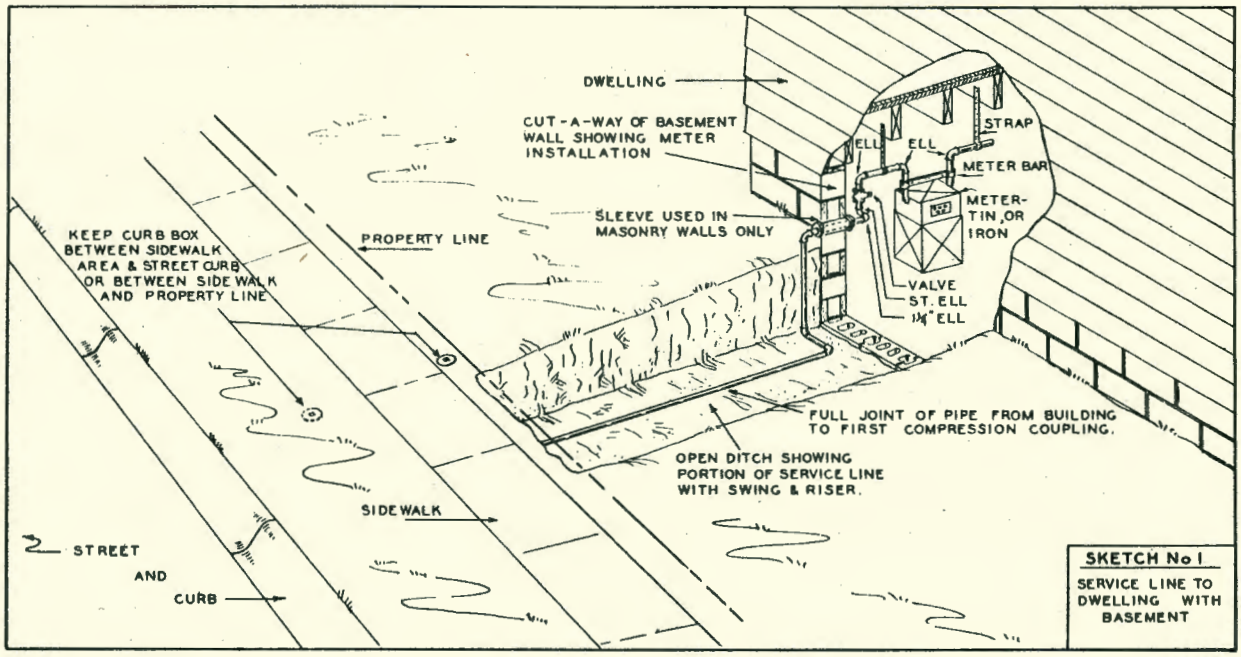
CK
8-30-51
IM

*"These specifications shall not apply to the installation of appliances approved under A.S.A. requirements for equipment having a sealed combustion chamber and direct air supply for complete combustion from the outside and direct discharge of all products of combustion to the outside, in which the vent is an integral part of such equipment."

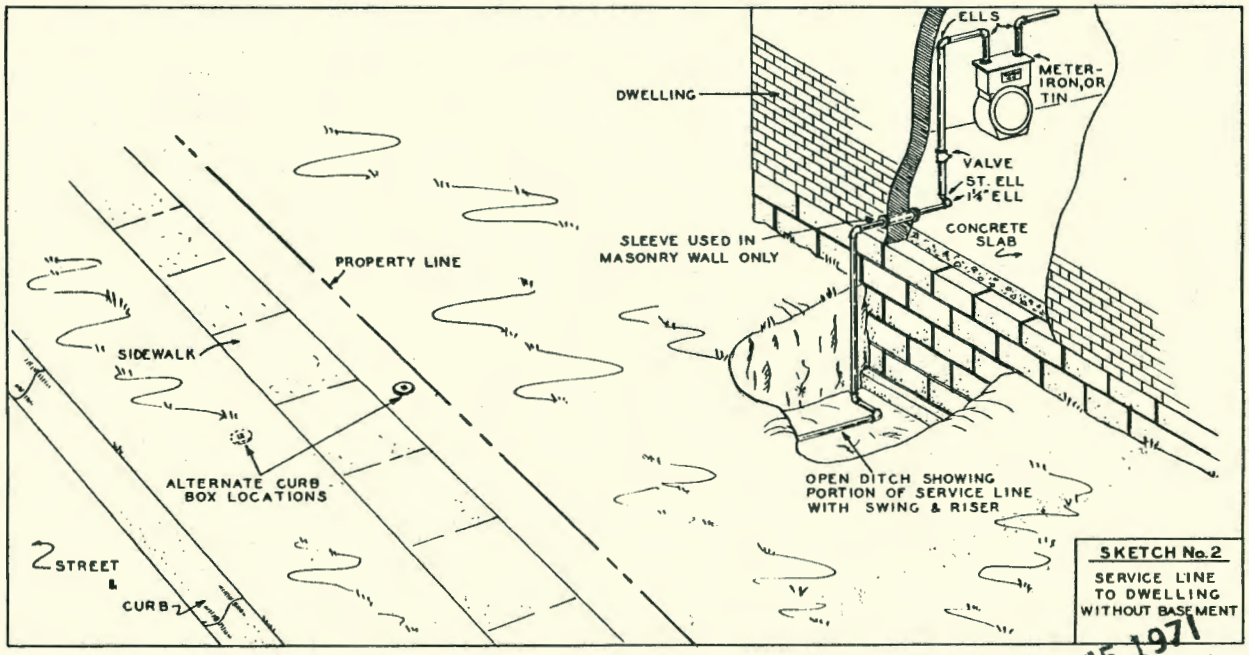
TABLE 2

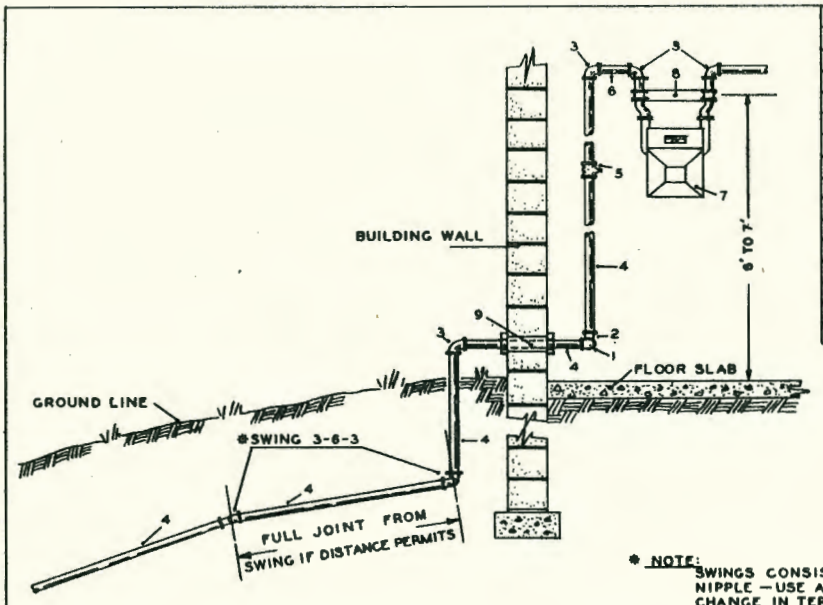
TABLE OF FLUE SIZES FOR VARIOUS BTU INPUTS

Total Input	Round Flue Diameter	Equivalent Rectangular Flue Inside Dimensions	
Btu per Hour	Inches	Inches x Inches	
30,000	3	----	
57,000	4	----	
95,000	5	3-1/4x 7	4x 5
140,000	6	5x 6	5-1/2x 5-1/2
200,000	7	5x 8	6x 7
280,000	8	5x11	6x 9
360,000	9	6x12	7x10
450,000	10	7x12	8x10
575,000	11	8x13	10x10
690,000	12	10x12	11x11



C/L
8-30-56
MW



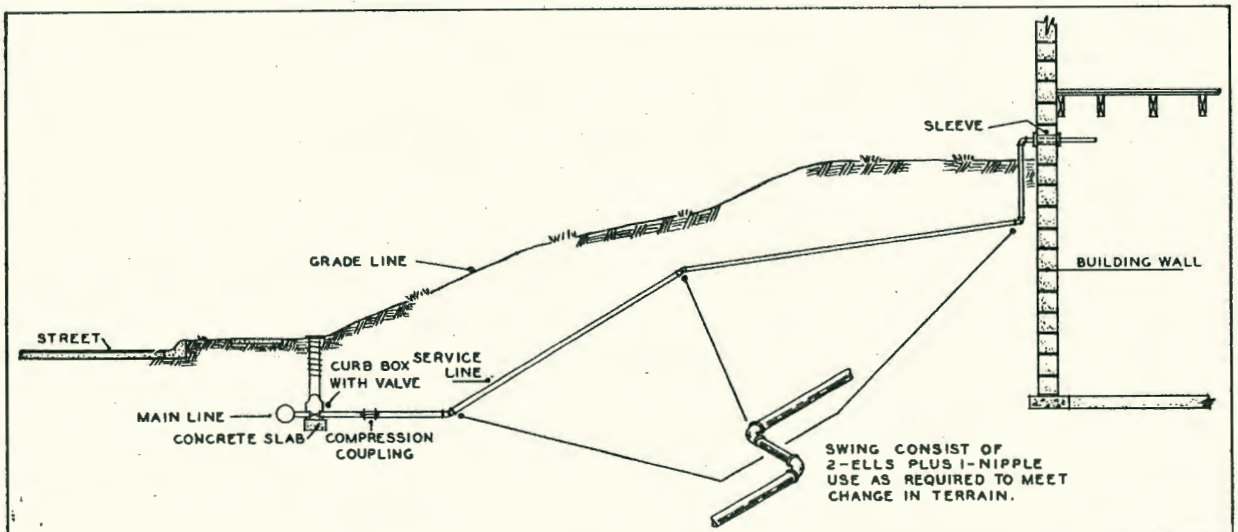


BILL OF MATERIAL

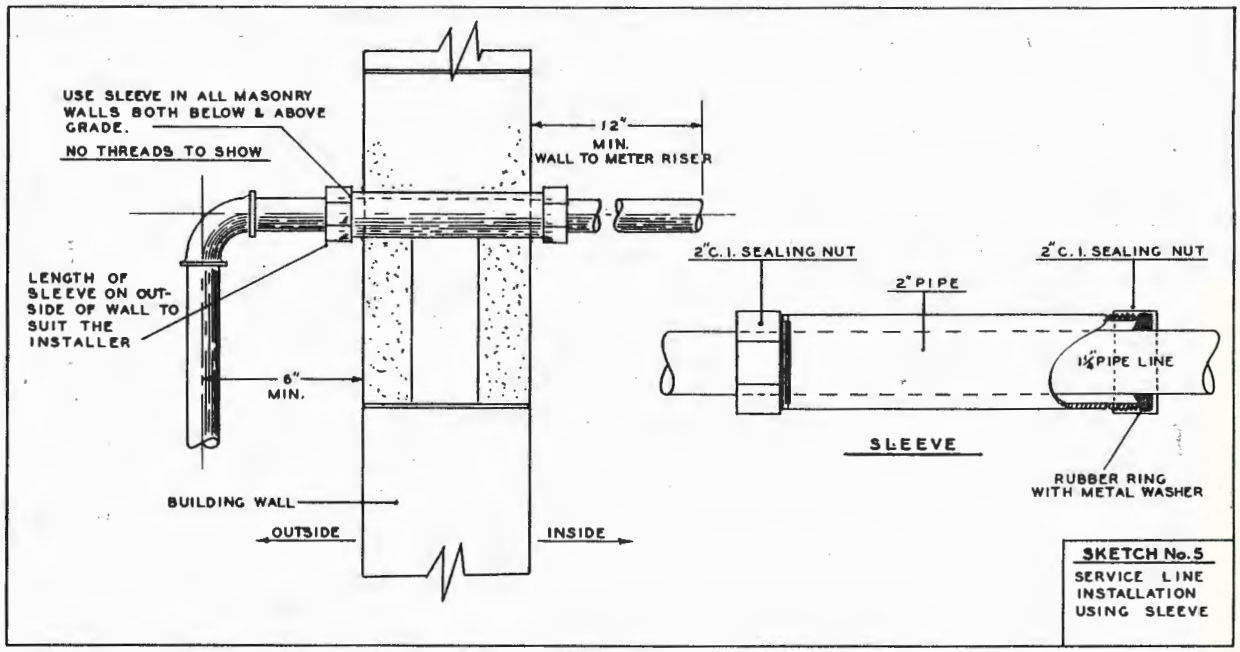
QUAN.	SIZE	ITEM	No.
1	1¼"	ELBOW	1
1	1¼"	ST. ELL M.I.	2
AS REQD	1¼"	ELL M.I.	3
" "	1¼"	PIPE	4
1	1¼"	VALVE-TAMPER PROOF TYPE	5
1	1¼"x –	NIPPLE	6
1		METER	7
1		SOLID METER BAR	8
1		SLEEVE	9
*		SEE NOTE BELOW	

* NOTE: SWINGS CONSIST OF 2-ELLS PLUS NIPPLE – USE AS REQUIRED TO MEET CHANGE IN TERRAIN.

SKETCH No. 3
SERVICE LINE TO DWELLING WITHOUT BASEMENT

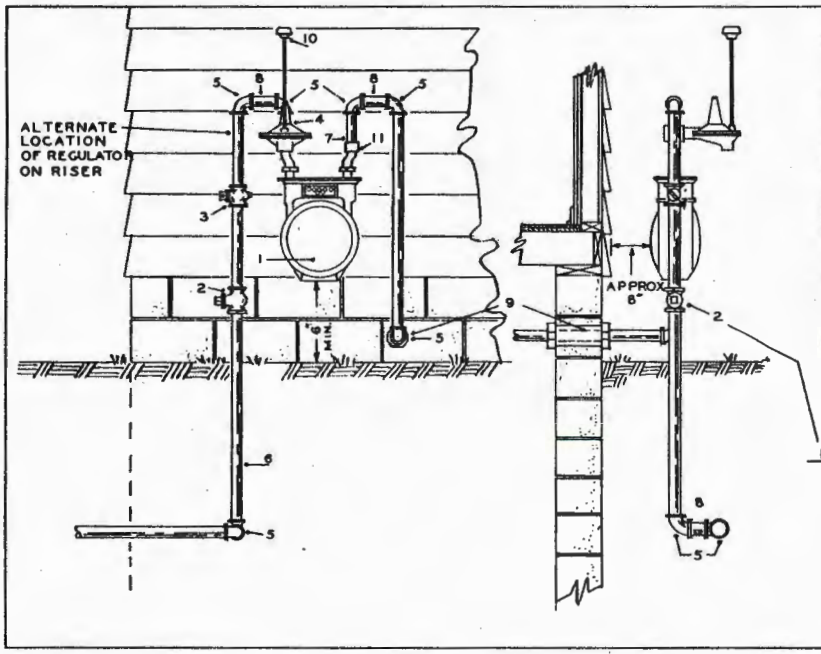


SKETCH No. 4
SERVICE LINE WITH SWINGS FOR UNEVEN TERRAIN



SKETCH No. 5
SERVICE LINE INSTALLATION USING SLEEVE

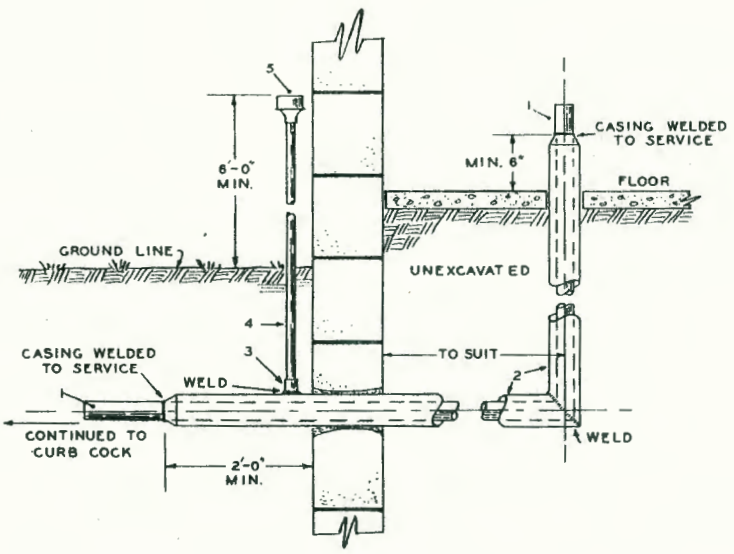
C/C
8-30-55
JAW



BILL OF MATERIAL			
QUAN.	SIZE	ITEM	No.
1		IRON METER	1
1	1¼"x1¼"x1¼"	TEE, PLUG DRILLED FOR SEAL	2
1	1¼"	VALVE, TAMPER PROOF TYPE	3
1	1¼"	REGULATOR	4
7	1¼"	ELL M. I.	5
AS REQD	1¼"	PIPE	6
	1¼" —	NIPPLE	7
3	1¼" X 3"	NIPPLE	8
1		SLEEVE	9
1		STD. MUSHROOM VENT	10
1	1¼"	COUPLING	11

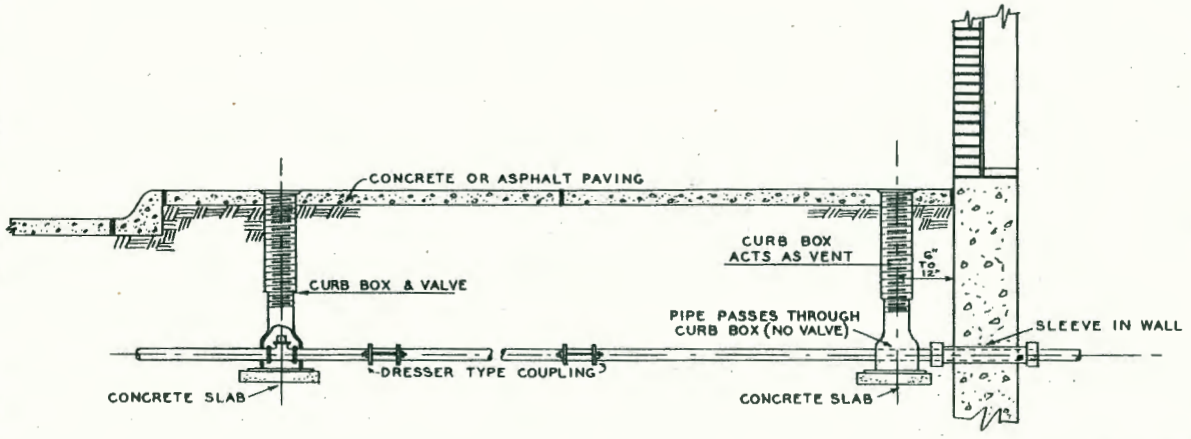
NOTE:
FOR LOW PRESSURE SETTING TEE No. 2 TO BE OMITTED.

SKETCH No. 6
OUTSIDE METER INSTALLATION WITH REGULATOR



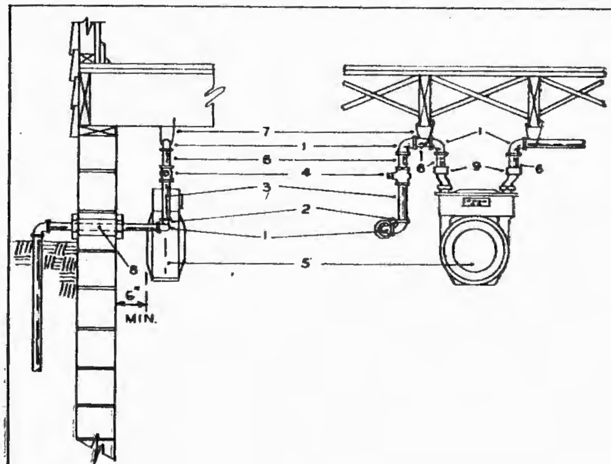
BILL OF MATERIAL			
QUAN.	SIZE	ITEM	No.
AS REQ'D	1¼"	PIPE	1
"		CASING	2
1		M.I. COLLAR	3
AS REQ'D		PIPE	4
1		MUSHROOM TYPE VENT FITTING	5

SKETCH No. 7
VENTING SERVICE LINE LAID UNDER BUILDING



COMMERCIAL AREA
SHOWING A RECOMMENDED VENT FOR PAVED AREA.
NOTE: CONSULT COMPANY ABOUT OTHER SUITABLE VENTS.

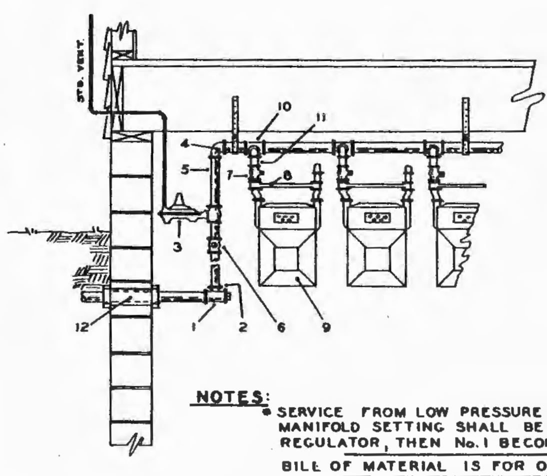
SKETCH No. 8
SERVICE LINE UNDER PAVED COMMERCIAL AREA



BILL OF MATERIAL			
QUAN.	SIZE	ITEM	No.
4	1¼"	M. I. ELBOW	1
1	1¼"	M. I. ST. ELBOW	2
1	1¼" X ?	PIPE NIPPLE LENGTH TO SUIT	3
1	1¼"	VALVE, TAMPER PROOF TYPE	4
1	----	IRON METER	5
4	1¼" X 3"	PIPE NIPPLE	6
2	—	PIPE STRAPS	7
1		SLEEVE	8
2	1¼"	COUPLING	9

SKETCH No. 9
IRON
METER SETTING

8-30-36



BILL OF MATERIAL			
QUAN.	SIZE	ITEM	No.
1	1¼"x⅜"x1¼	TEE, PLUG DRILLED FOR SEAL WIRE	1
1	1¼"	M.I. ST. ELL	2
1	1¼"	REGULATOR	3*
1	1¼"	M.I. ELL	4
AS REQ'D	1¼"	PIPE	5
1	1¼"	VALVE, TAMPER PROOF TYPE	6
1	1¼"	" " "	7
1		METER BAR	8
1		TIN METER	9
1	1¼"x1¼"x1¼	TEE	10
1	1¼"x3"	NIPPLE	11
1	2"	SLEEVE	12

NOTES:

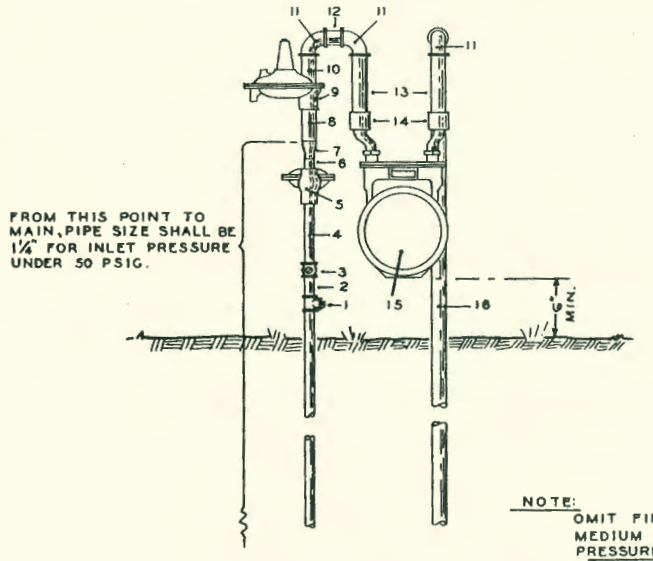
* SERVICE FROM LOW PRESSURE MAIN FOR MANIFOLD SETTING SHALL BE USED WITHOUT REGULATOR, THEN No. 1 BECOMES AN ELBOW

BILL OF MATERIAL IS FOR ONE METER ONLY.

METER BARS MAY BE ELIMINATED WHEN USING IRON METERS.

SKETCH No. 10
MANIFOLD TIN
METER SETTING
WITH OR WITHOUT
REGULATOR

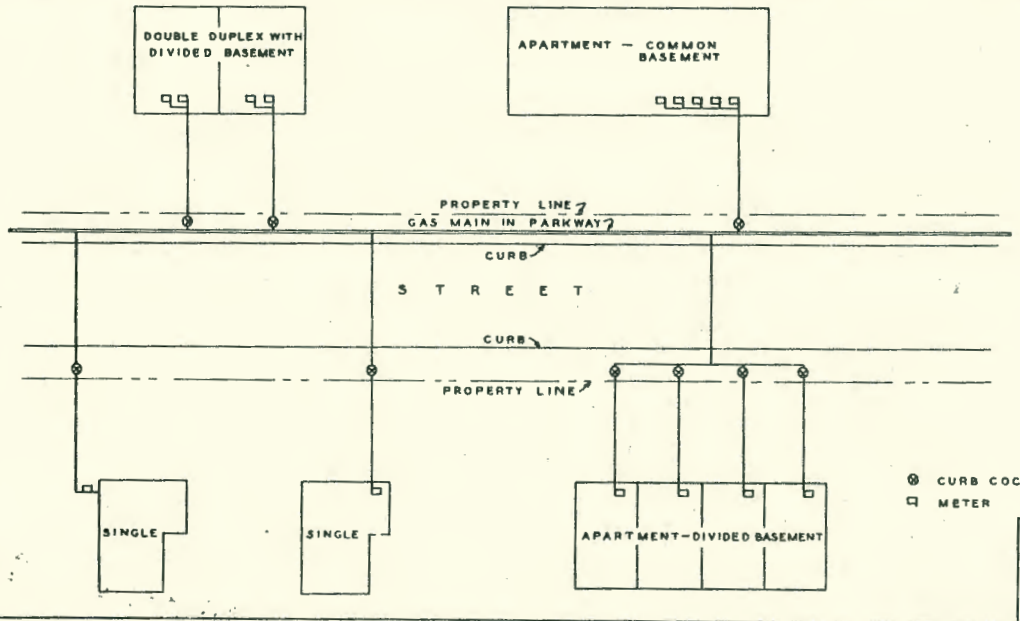
CANCELED



BILL OF MATERIAL			
QUAN.	SIZE	ITEM	No.
1	1"	M. I. TEE	1
1	1"X 6"	NIPPLE	2
1	1"	VALVE, TAMPER PROOF TYPE	3
1	1"X	NIPPLE	4
1	1"	REGULATOR	5
1	1"X 3"	NIPPLE	6
1	1"X1¼"	REDUCER	7
1	1¼"X	NIPPLE	8
1	1¼"	REGULATOR	9
1	1¼"X	NIPPLE	10
3	1¼"	ELL	11
1	1¼"X 3"	NIPPLE	12
2	1¼"X	NIPPLE	13
2	1¼"	COUPLING	14
1		IRON METER	15
AS REQD.	1¼"	PIPE	16

NOTE:
OMIT FIRST REGULATOR No. 5 FOR MEDIUM PRESSURE SETTING, INLET PRESSURE UNDER 50 PSIG.
FOR INLET PRESSURE ABOVE 50 PSIG STOP SHALL BE LUBRICATED PLUG VALVE OR EQUAL.

SKETCH No. 11
HIGH & MEDIUM PRESSURE IRON METER SETTING



SKETCH No. 12
TYPICAL SERVICE LINE INSTALLATION