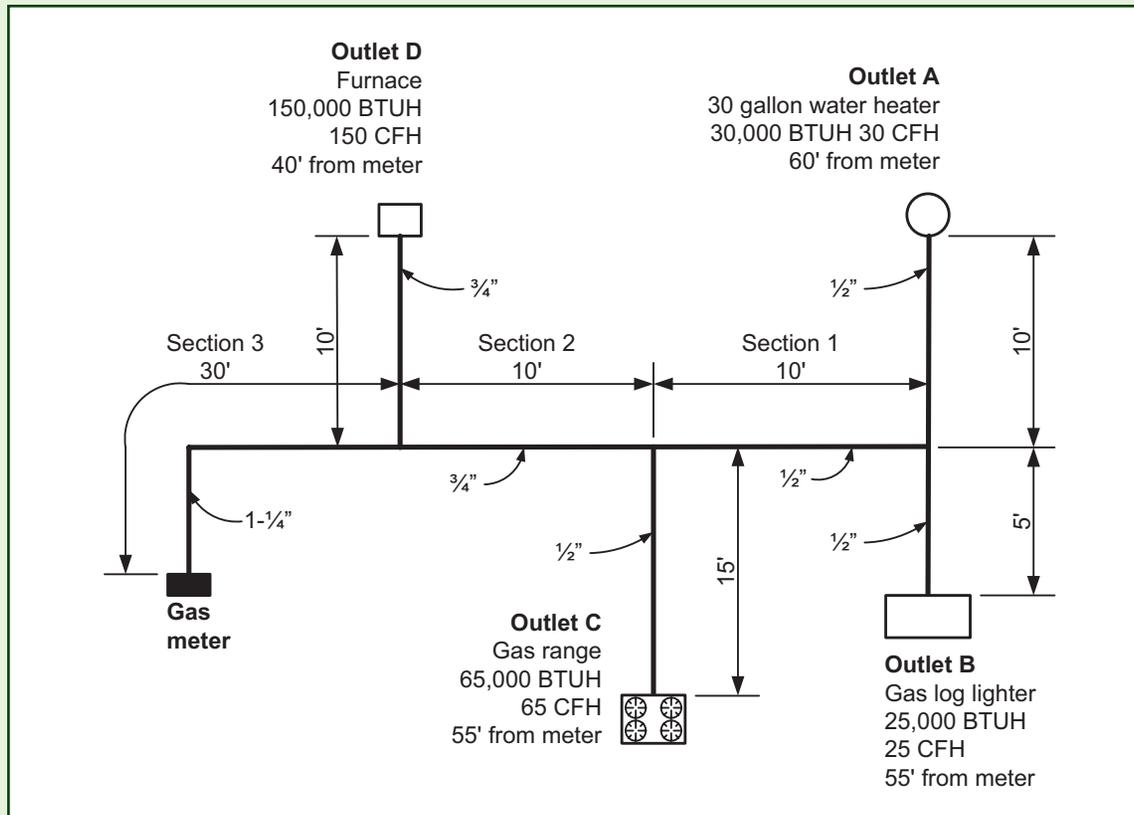


Gas Pipe Sizing

- To determine the gas input for each appliance use table or nameplate on appliance.
- Determine the length of pipe from the gas meter to each outlet, if length falls between lengths shown go to next higher column.
- Figure the lateral pipe sizes for individual appliances.
 Outlet A - Use 60' column-demand load 30 cfh minimum pipe size $\frac{1}{2}$ "
 Outlet B - Use 60' column-demand load 25 cfh minimum pipe size $\frac{1}{2}$ "
 Outlet C - Use 60' column-demand load 65 cfh minimum pipe size $\frac{1}{2}$ "
 Outlet D - Use 40' column-demand load 150 cfh minimum pipe size $\frac{3}{4}$ "
- Figure the size of the main pipe feeding more than one appliance. Go to the most remote outlet, it is 60' from the meter so use 60' column. Then determine various pipe sizes based on demand load for each section.
 Section 1-serves outlets A and B total demand 55 cfh-minimum pipe size $\frac{1}{2}$ "
 Section 2-serves outlets A, B, and C total demand 120 cfh-minimum pipe size $\frac{3}{4}$ "
 Section 3-serves all outlets total demand 270 cfh-minimum pipe size $1\frac{1}{4}$ "



Gas Pipe Installation and Sizing



Residential Permit Requirements



City of San Bruno

Community Development
Department

Building Division

567 El Camino Real
San Bruno, CA 94066
Phone (650) 616-7074

www.sanbruno.ca.gov

REVISED June 2014

PERMIT REQUIREMENTS

Installation or alteration of gas piping requires a permit. The permit can be issued to the property owner or licensed contractor. A plan showing the layout of gas piping system and sizing is required for new or when adding to an existing gas piping system. This plan should show the proposed location of piping, size of different branches, and the load demands.

INSTALLATION REQUIREMENTS

Acceptable materials are schedule 40 metallic piping (galvanized or black), or corrugated stainless steel tubing (CSST). CSST can only be installed by persons who have been trained and certified by the manufacturer. For underground installations, piping with a factory corrosion-resistant coating is allowed, or polyethylene plastic pipe (PPE) when installed by certified technicians. Underground pipe requires a minimum of 18 inches of cover. Piping installed on the exterior above ground shall be a minimum of 6 inches above grade, securely supported and located where it will be protected from damage. Required shutoff valves must be accessible, in the same room, and in most cases within three feet of the appliance. When flexible connectors are used, they shall be of a minimum practical length and not pass through any walls, ceilings, floors, and not used in concealed locations.

INSPECTION REQUIREMENTS

All new gas piping is required to be visually inspected, tested and approved prior to covering. Inspection will include verification of gas piping size, material, and that installation meets code requirements. The inspector will need to witness a pressure test to confirm there is no leakage. The person doing the work is responsible for providing the proper gauge, performing the gas piping pressure test, and scheduling the inspection.

PRESSURE TESTING REQUIREMENTS

When new branches are installed from the point of delivery to new appliances, only new piping is required to be tested. The air pressure test must hold for 10 minutes with no drop in pressure. Use a test gauge with 1/10lb. increments, with a pressure range no more than twice the test pressure.

SIZING GAS PIPE

You can size gas piping by using the information in this brochure, or by providing us with the proper information request assistance from the building department. A drawing showing piping layout, lengths, size, type of appliance and demand would be needed in order for us to help you.

Approximate Gas input for Residential Appliances (From Table 12-1 of the 2013 CPC)

Appliance	Btu/h	Cfh
Furnace	100,000	100
Water heater 30 to 40 gal.	35,000	35
Water heater 50 gal.	50,000	50
Water Heater Instantaneous		
Capacity at 2 gal. / Minute	142,800	142.8
Capacity at 4 gal. / Minute	285,000	285
Capacity at 6 gal. / Minute	428,400	428.4
Range, freestanding	65,000	65
Built-in oven or broiler unit	25,000	25
Built-in cook top	40,000	40
Clothes dryer	35,000	35
Gas fireplace direct vent	40,000	40
Gas log	80,000	80

These demand ratings are approximate, actual appliances maybe higher; refer to appliance nameplate for specific btu/h ratings. The tables used to size gas piping are based on cubic feet per hour (cfh). To convert btu/h to cfh, divide btu/h by 1,000. (Per PG&E)

Schedule 40 Metallic Pipe (Black or galvanized iron pipe) Maximum Capacity of Gas Pipe in CFH (Cubic Feet Per Hour)

(From Table 12-8 of the 2013 CPC)

Pipe Sizes	Distance from Meter to Most Remote Appliance in Feet on Each Branch												
	10	20	30	40	50	60	70	80	90	100	125	150	200
1/2"	172	118	95	81	72	65	60	56	52	50	44	40	34
3/4"	360	247	199	170	151	137	126	117	110	104	92	83	71
1"	678	466	374	320	284	257	237	220	207	195	173	157	134
1-1/4"	1,390	957	768	657	583	528	486	452	424	400	355	322	275
1-1/2"	2,090	1,430	1,150	985	873	791	728	677	635	600	532	482	412