

Radnor Township
Community Development Department
Instructions and Requirements for a Generator Permit

- Provide a plot plan showing the following:
 - Location of house and any structures
 - Location of new generator
 - Front, side and rear yard setback measurements
 - Setbacks and clearances for the generator

- Complete an Electrical permit application, load calculation sheet, single line diagram, standby generator - typical installation with minimum clearances sheet.

- Copy of completed Application for Natural Gas Service along with PECO response to application

- Manufacturer's specifications for installation of generator must be supplied.

- Complete a Plumbing or Mechanical permit application indicating the type of fuel or gas powering the generator. Gas pipe location, sizing, and material must be supplied.

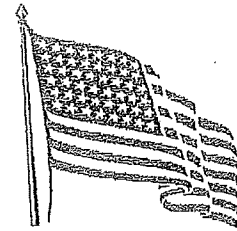
- A plan review will be provided by United Inspection and the fee will be added to the Electrical Permit Application when the permit is issued.

- You will be notified when the permit has been reviewed and is ready for issuance.

If you have any questions regarding the instructions or requirements please call the Community Development Department at 610-688-5600

Please Note: An incomplete application is subject to rejection.

UNITED INSPECTION AGENCY, INC.
180 South Main Street
Ambler, PA 19002
Phone: 215-542-9977
Fax: 215-540-9721



Sizing the Generator

Attached to this document United has included a Calculation Sheet for your use to calculate the electrical rating of the generator needed for your backup application. Included also is a completed Sample Calculation to use as a guideline. Note that **all** of the electrical loads to be picked up by the generator must be included in the calculation.

The Sample Calculation with the loads selected results in the need for a minimum 11 kW generator. Generators come in specific sizes. The closest size available above 11 kW is 14 kW. Refer to the Sample Single Line Diagram attached. Shown are the main service panel, generator, transfer switch and subpanel that serves the loads to be picked up. It also includes the size and type of wiring method interconnecting these devices.

The Calculation Sheet and the Single Line Diagram must be completed and presented to Township Authorities along with the Permit Application. The paperwork submitted will be reviewed for Code Compliance as part of the Review Process. All of the information shown on the Samples provided is essential to a successful Review.

Placement of the Generator

The National Fire Protection Association (NFPA) standard NFPA 37 establishes criteria for the installation of stationary combustion engines associated with backup generators. The placement requirements are based on compliance to NFPA 37 Section 4.14. Key highlights of the placement criteria are:

- The standby generator weatherproof enclosure must be at least 5 ft. from windows, doors, any wall openings, shrubs or vegetation over 12 inches in height.
- The exhaust outlet side of the weatherproof enclosure must have at least 5 ft. clearance from any structure, shrubs, trees or any kind of vegetation.
- The standby weatherproof enclosure must have 5 ft. overhead clearance from any structure, overhang or trees.
- Direct the standby generator exhaust away from or parallel to the building or structure. Position the standby generator in an area where winds will carry the exhaust gas away from potentially occupied building or structure.
- Do not place the standby generator in any area where leaves or debris normally accumulate.

This information is provided to assist you in sizing and placing the standby generator. If you wish to consult on the installation or have any questions regarding the completion of the Calculations or Single Line Diagram, please call United Inspection at 215-542-9977. We will be glad to help.

Backup Generator Load Calculation

All loads to be picked up by generator must be included in calculation

	Quantity	
Lighting Fixtures	_____	x 60 watts each = _____
Sump (or Well) Pump	1/3HP	x 750 Watts each = _____
	1/2 HP	x 1100 Watts each = _____
	3/4 HP	x 1600 watts each = _____
Refrigerator	_____	x 1400 Watts each = _____
Microwave (built in)	_____	x 1630 Watts each _____
Clothes Dryer	_____	x 5000 Watts each = _____
Freezer	_____	x 600 Watts each = _____
Home Security System	_____	x 200 Watts = _____
Dishwasher	_____	x 1030 Watts each = _____
Disposal	_____	x 690 Watts each = _____
Water Heater	_____	x 4500 Watts each = _____
Clothes Washer	_____	x 1140 Watts each = _____
Computer	_____	x 840 Watts each = _____
		Sub Total Watts = _____

First 10000 Watts @ 100% _____ **A**

Remaining Watts @ 40% _____ **B**

_____ Tons of A/C x 1750 Watts per ton = _____ **C**

Total Watts (Add A + B + C) _____

Divide Total Watts by 1000 _____

Total Watts/240 Volts = _____

Minimum Generator Size in kW

Current Supplied by Generator _____

Backup Generator Load Calculation (Sample)

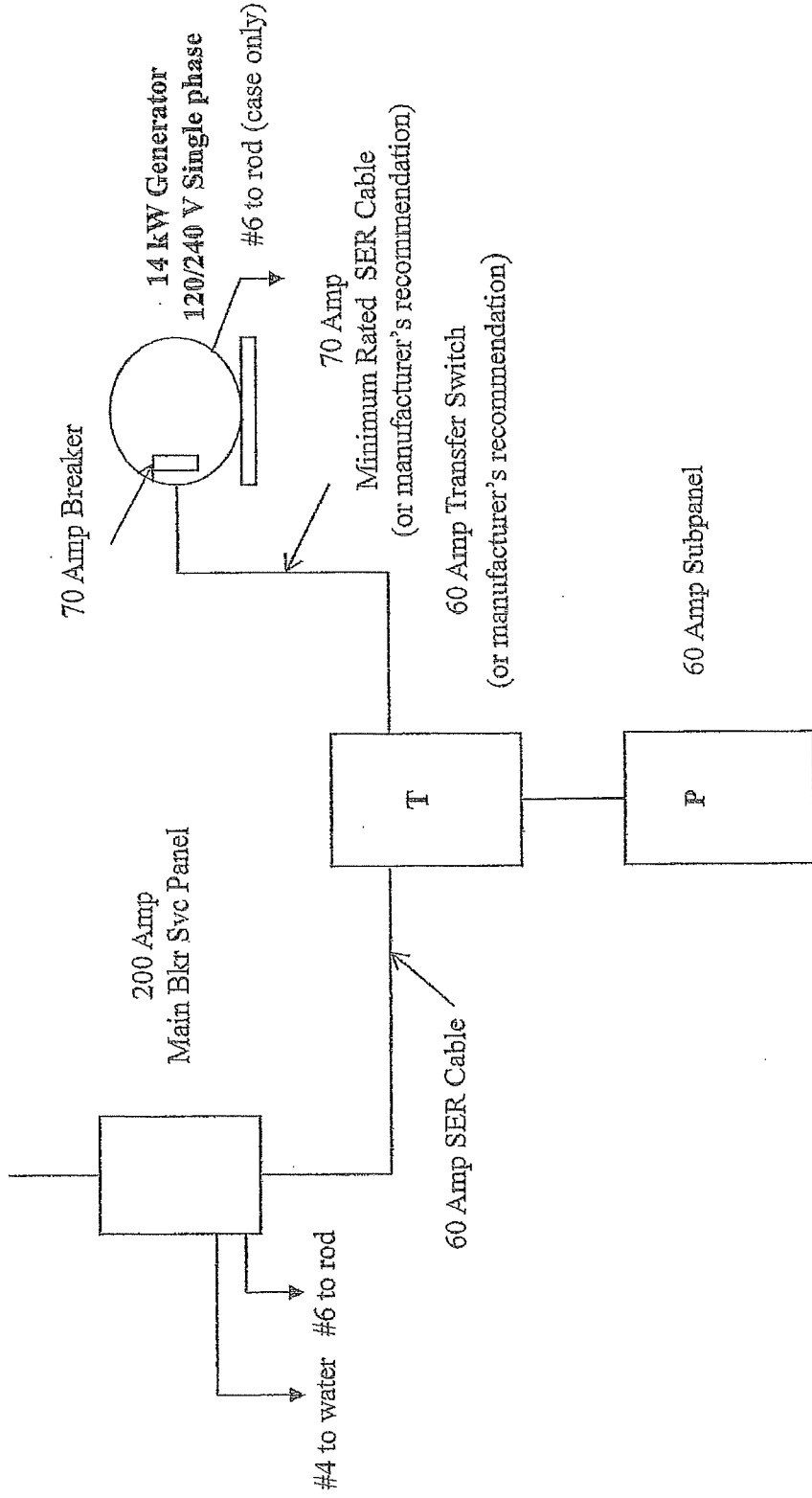
All loads to be picked up by generator must be included in calculation

Lighting Fixtures	10	x 60 watts each =	<u>600</u>
Sump (or Well) Pump		x 750 Watts each =	
	1	x 1100 Watts each =	<u>1100</u>
		x 1600 watts each =	
Refrigerator	1	x 1400 Watts each =	<u>1400</u>
Microwave (built in)	1	x 1630 Watts each	<u>1630</u>
Clothes Dryer		x 5000 Watts each =	
Freezer	1	x 600 Watts each =	<u>600</u>
Home Security System	1	x 200 Watts =	<u>200</u>
Dishwasher	1	x 1030 Watts each =	<u>1030</u>
Disposal		x 690 Watts each =	
Water Heater	1	x 4500 Watts each =	<u>4500</u>
Clothes Washer		x 1140 Watts each =	
Computer	1	x 840 Watts each =	<u>840</u>
		Sub Total Watts =	<u>11900</u>
First 10000 Watts @ 100%			<u>10000 A</u>
Remaining Watts @ 40%			<u>760 B</u>
		Tons of A/C x 1750 Watts per ton =	<u>C</u>
		Total Watts (Add A + B + C)	<u>10760</u>
		Divide Total Watts by 1000	<u>11</u>
		Total Watts/240 Volts =	<u>45</u>

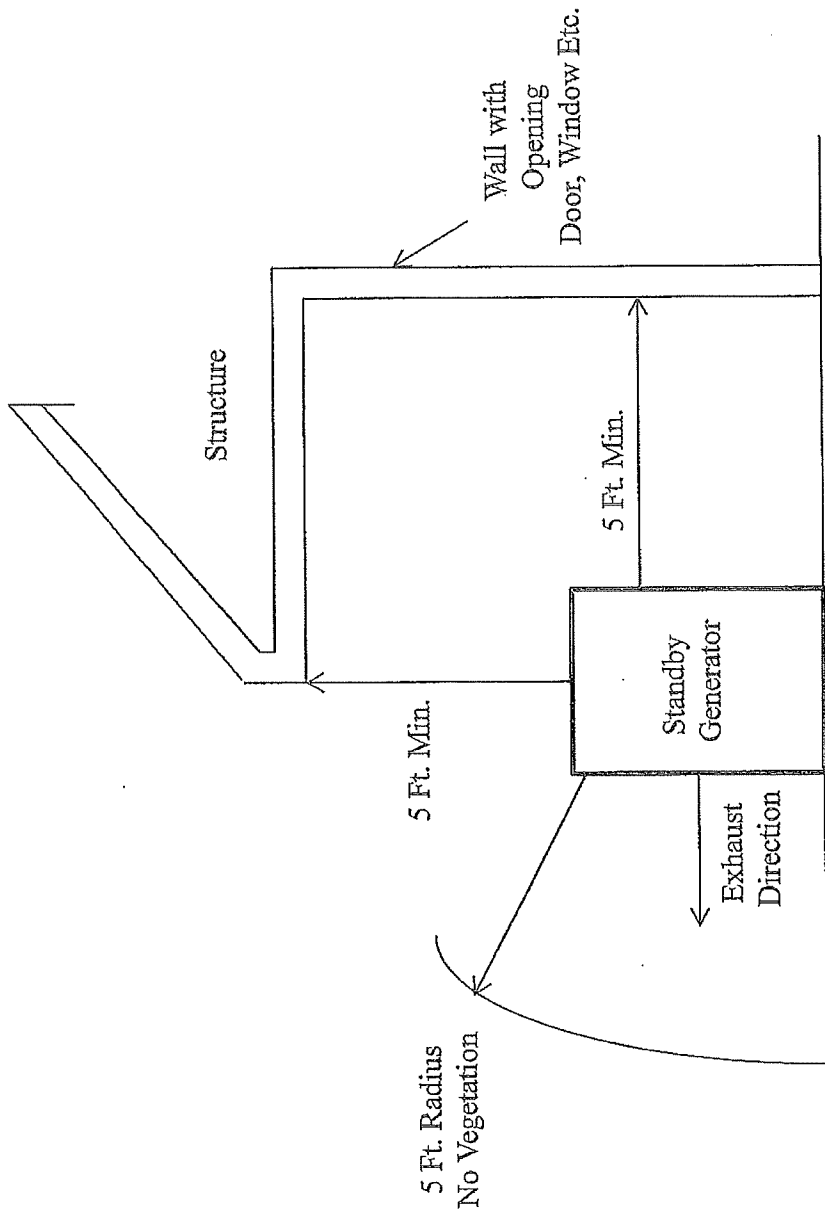
11 Minimum Generator Size in kW

45 Current Supplied by Generator

Single Line Diagram (Sample)



Note: All conductors Copper Type THHN/THWN unless otherwise noted



Standby Generator Typical Installation with Minimum Clearances



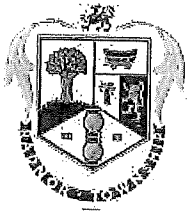
301 Iven Avenue
Wayne, PA 19087
P 610-688-5600
F 610-971-0450
www.radnor.com

RADNOR TOWNSHIP Community Development Department Application for Mechanical Permit

Permit No. _____
Fee _____*

*Include \$4.50 PA Surcharge and
\$2.00 Administrative Fee

Job Location:	Address: _____
Property Owner:	Name: _____ Address/Zip: _____ Phone: _____ Fax: _____ Email: _____
Mechanical Contractor:	Name: _____ Address/Zip: _____ Phone: _____ Fax: _____ Email: _____
Residential <input type="checkbox"/> Commercial <input type="checkbox"/> Institutional <input type="checkbox"/> New Work <input type="checkbox"/> Alteration <input type="checkbox"/> Other <input type="checkbox"/> _____	Proposed Install Date: _____
Description of Work _____ _____ _____	
HEATING	
Type of Fuel _____	Cost of Installation _____
Name of Unit _____	Mfg. By _____
Capacity of Unit (BTU's) Input _____	Output _____
AIR CONDITIONING	
Capacity of Unit (BTU's) Input _____	Cost of Installation _____
Distance from property line _____	
Name of Unit _____	Mfg. By _____
All work, materials and construction to be in accordance with the rules and regulations of the Mechanical Codes of the Township of Radnor. Mechanical inspections require 24 hours notice minimum. Rough inspections required. Final inspections required for ALL permits. PERMITS ARE NOT TRANSFERABLE	
Signature of Applicant _____	Current Radnor Registration No. _____



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RADNOR TOWNSHIP
Community Development Department

Application for Electrical Permit

Electrical Plans are required for all work unless waived by Codes Official

PERMITS ARE NOT TRANSFERABLE

Date Issued _____

Permit No.: _____

Fee: _____

****Include \$4.50 PA Surcharge
and \$2.00 Administrative Fee**

Job Location	Address:		
Property Owner	Name:		
	Address:		
	Phone:	Fax:	
Electrical Contractor	Name:		
	Address:		
	Phone:	Cell:	Email:
Inspection Agency	United Inspection Agency		
Name of Inspector			

Residential Commercial Institutional Other

Cost of Work:

Description of work including number of devices:

All work, materials and construction to be in accordance with the rules and regulations of the Electrical Codes of the Township of Radnor. Rough and Final Inspections are required for ALL permits, by the approved Inspection Agency.

Signature of Master Electrician _____ Current Registration No. _____



301 Iven Avenue
Wayne, PA 19087
P 610-688-5600
F 610-971-0450
www.radnor.com

RADNOR TOWNSHIP

Community Development Department

Application for Plumbing Permit

Permit No. _____
 Fee _____
 **Include \$4.50 PA Surcharge
 and \$2.00 Administrative Fee

Job Location	Address: _____
Property Owner:	Name: _____ Address/Zip: _____ Phone: _____ Fax: _____ Email: _____
Plumbing Contractor:	Name: _____ Address/Zip: _____ Phone: _____ Fax: _____ Email: _____

Residential Commercial Institutional Other _____
 New Work Alteration

	Yard	Basement	1st Floor	2nd Floor	3rd Floor	4th Floor	Total:
Water Closet							
Urinals							
Bath Tubs							
Showers							
Sinks							
Garbage Disposal *							
Dishwasher *							
Utility Sink							
Auto Clothes Washer							
Sewer Ejector Pump *							
Hot Water Heater *							
Water Service *							
Sewer Connection*							
Gas Fixtures *							
Other							
Total:							

* Additional Fee

Is connection to be made with Sewer On Site

Size of House Drain of Building _____

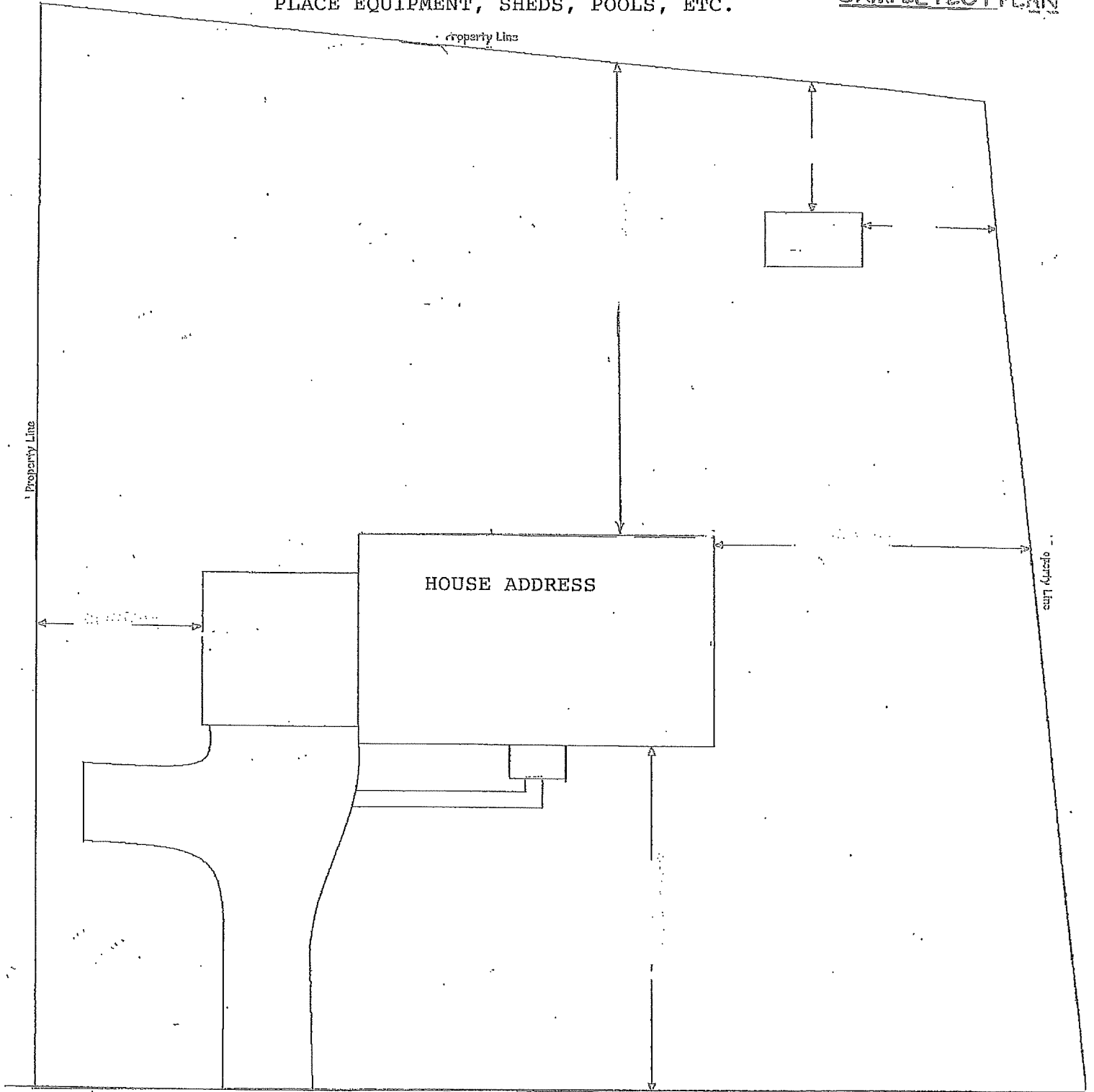
Size of Soil Pipe _____ Size of Vent Pipe _____

All work, materials and construction to be in accordance with the rules and regulations of the Plumbing Codes of the Township of Radnor. Plumbing inspections require 24 hours notice minimum. Rough inspections required. Final inspections required for ALL permits. PERMITS ARE NON-TRANSFERABLE

Signature of (Master) Plumber _____ Current Registration No. _____

PLACE EQUIPMENT, SHEDS, POOLS, ETC.

SAMPLE PLOT PLAN



STREET NAME

Increase of Natural Gas Load

The information contained on this form is required to process your request to increase your natural gas load. Please complete this form and return as follows:

Delaware, York, & Chester Counties & Lower Merion mail to: 1060 W. Swedesford Rd, Berwyn, PA. 19312 OR FAX to 610-648-7771 delchesterserviceapplications@exeloncorp.com QUESTIONS? CALL 1-800-454-4100	Bucks & Montgomery counties mail to: 400 Park Av, Warminster, PA. 18974 OR FAX to 215-956-3240 bucksmontnewbusiness@exeloncorp.com QUESTIONS? CALL 1-800-454-4100
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From: _____

 Phone: _____

1. Please provide the following information for the location of the gas service.

Note: If additional meter sets are required, please supply the billing information.

Customer Info: Own Property Lease Property

Square Footage of home _____

Customer Name _____
 Service Address _____
 City, State, Zip _____
 Telephone _____
 Acct. Number _____

Contactor 's Name _____
 Company Name _____
 Street Address _____
 City, State, Zip _____
 Telephone _____
 E-Mail _____

2. _____ RESIDENTIAL _____ COMMERCIAL

3. TYPE OF BUSINESS: (COMMERCIAL ONLY)

- Separation of piping (need additional meter set (s))
- New Increase in Load
- New Increase in Pressure

- Retail Store
- Office/Commercial
- Restaurant
- Warehouse
- Institutional
- Governmental
- Industrial
- Other

****PLEASE NOTE THAT ALL REQUESTS FOR ADDITIONAL LOAD TO PECO GAS SYSTEMS MUST BE REVIEWED FOR CAPACITY. DO NOT INSTALL ANY NEW GAS FIRED APPLIANCES WITHOUT FIRST CONSULTING WITH A PECO REPRESENTATIVE****

4. EQUIPMENT LIST ITEMIZATION Will "heating load" be added (i.e.: furnace, boiler, IR heater, rooftop heater)? Will "process load" be added (i.e.: water heater, paint dryers, fryer, grills)? Please provide the BTU input for EACH PIECE of equipment to be installed.

New	Btu Input	Existing (Boiler, Furnace, WH, Grill)	BTU Input
Sample: Pool Heater	400,000 BTU's	Sample: Furnace	100,000 BTU's
TOTAL NEW		TOTAL EXISTING	

5. WHICH NATURAL GAS DELIVERY PRESSURE IS REQUIRED TO YOUR BUILDING:

- LOW 6" w.c. (0.21 PSIG) 12.2" w.c. (0.44 PSIG) 2 PSIG 5 PSIG 10 PSIG LINE