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CITY OF PORTLAND, OREGON - BUREAU OF DEVELOPMENT SERVICES

1900 SW Fourth Avenue, Suite 5000 • Portland, Oregon 97201 • www.portlandonline.com/bds • Fax 503-823-7425



Facility Permit Plan Intake Form

FOR INTAKE, STAFF USE ONLY
Date Received 10/19/12
Building Registration #
Fixed Bid
Bin #
Building Permit #
Mechanical #
Plumbing Permit #
Electrical Permit #
Building/Mechanical
Electrical
Plumbing
Fire
Planning
BES
PDOT
Structural
Other

APPLICANT: Complete all sections below that apply to the project. Please print legibly.

Print Name Lewis: Clark College Sign Name Sharon M. Hayes
Street Address 0615 SW Palatine Hill Rd.
City Portland State OR Zip Code 97219
Day Phone 503 768 7843 FAX email sharonh@lclark.edu

Plans / permits available for pick up at 1900 SW 4th Avenue, 2nd floor between 8:00 am to 5:00 pm

Contact Name for plan/permit pick up Sharon Hayes
Day Phone 503 768 7843 email sharonh@lclark.edu

Project Building Name / # Frank Manor House Boiler Installation
Project Address or Location SAME AS ABOVE
Project Name and Description Replace old boiler with new gas boiler

Total Project Value \$62,000 Project Reference #/Billing ID # Frank Manor-house boiler
Building Contractor CCB#
Mechanical Contractor Tom Stevens Boiler CCB# 92641
Electrical Contractor CCB# License #
Plumbing Contractor CCB# License #

Building Permit [Y] [N] Alarms Required
No. of Stories 4 [Y] [N] Smoke Det. Req'd
Const. Type unreinforced masonry [Y] [N] Sprinklers Req'd
[Y] [N] Struct. Eng / Calcs Submitted

Mechanical Permit
Mechanical Valuation \$62,000
Description

Electrical Permit Christenson pulled commercial permit
Please provide a completed standard electrical permit application form. You may mail or deliver it to 1900 SW 4th Avenue, Portland, Oregon 97201 or FAX to 503-823-7425.

Plumbing Permit
Number of Fixtures
Back Flow Devices
Water Service (# of Feet)
Medical Gas
Other
City of Portland REVIEWED FOR CODE COMPLIANCE OCT 29 2012 12-191589-FA Permit Number

8851B1-21



# MECHANICAL PERMIT APPLICATION

## City of Portland, Oregon - Bureau of Development Services

1900 SW 4th Avenue, Portland, Oregon 97201 • 503-823-7363 • TTY 503-823-6868 • www.portlandoregon.gov/bds

### Type of work

New construction
  Addition/alteration/replacement  
 Demolition
  Other:

### Category of construction

1 & 2 family dwelling
  Commercial/industrial
  Accessory building  
 Multifamily
  Master builder
  Other:

### Job site information and location

Job no.: \_\_\_\_\_ Job address: **0615 S.W Palatine Hill RD**  
 City/State/ZIP: **Portland, Oregon 97219-7899**  
 Suite/bldg./apt. no.: \_\_\_\_\_ Project name: **Frank Manor Building**  
 Cross street/directions to job site: **Palatine Hill RD**  
 Subdivision: \_\_\_\_\_ Lot no. \_\_\_\_\_ Tax map/parcel no. \_\_\_\_\_

### Description of work (example: upstairs bath fan/dryer exhaust)

**Gas Pressure test**

Provide RS permit no. \_\_\_\_\_

### Property owner

Property owner
  Tenant  
 Name: **Lewis + Clark** E-mail: \_\_\_\_\_  
 Address: **0615 S.W Palatine Hill RD**  
 City/State/ZIP: **Portland OR 97219**  
 Phone: **503-333-6808** FAX: **503-768-7841**

**Owner installation:** This installation is being made on property that I own, which is not intended for sale, lease, rent, or exchange.

Owner signature: \_\_\_\_\_ Date: \_\_\_\_\_

### Contractor

Contractor
  Subcontractor  
 Business name: **Tom Stevens Boiler Repair** E-mail: **ScottS@TstevensBoiler.com**  
 Address: **17675 SE Midway ST**  
 City/State/ZIP: **DAMASCUS OR 97089**  
 Phone: **503 260 8057** FAX: **503 658-8127**  
 Lic. no. \_\_\_\_\_ CCB lic. no. **92641**

Authorized signature: **Scott Stevens**

Print name: **Scott Stevens** Date: **10-4-12**

### Applicant

Applicant
  Contact Person  
 Business name: **Tom Stevens Boiler Repair**  
 Contact name: **Scott Stevens**  
 Address: **17675 SE Midway ST**  
 City/State/ZIP: **DAMASCUS OR 97089**  
 Phone: **503 260-8057** FAX: **503 658-8127**  
 E-mail: **ScottS@TstevensBoiler.com**

RS Permit/No Fees Due

Residential Combo permit subcontractor submittals only can be faxed to 503-823-7693 or e-mailed to bdscombinspec@portlandoregon.gov.

This permit application expires if a permit is not obtained within 180 days after it has been accepted as complete.

### Commercial Fee Schedule - Use Checklist

Mechanical permit fees\* are based on the value of the work performed. Indicate the value (rounded to the nearest dollar of all mechanical materials, equipment, labor, overhead and profit.)  
 Value: \$ **2,500**

### Residential Equipment / Systems Fees

For special information use checklist

Description	Qty.	Fee	Total
<b>Heating / cooling</b>			
Air conditioner (site plan required)		\$26	
Furnace / burner including duct work / vent / liner		\$55	
Heat pump (site plan required)		\$51	
Air handling unit		\$26	
Hydronic hot water system		\$32	
Residential boiler (radiator or hydronic) includes piping		\$32	
Unit heaters (fuel type, not electric) in-wall, in-duct, suspended, etc.		\$26	
Vent for appliance other than furnace		\$22	
Alteration of existing HVAC system		\$32	

### Other fuel appliances

Decorative gas fireplace		\$26	
Flue vent for water heater or gas fireplace		\$22	
Wood / pellet stove		\$57	
Gas or wood fireplace / insert		\$57	
Chimney / liner / flue / vent		\$22	
Other:		\$32	

### Environmental exhaust and ventilation

Range hood / other kitchen equipment		\$14	
Clothes dryer exhaust		\$14	
Single-duct exhaust (bathrooms, toilet compartments, utility rooms)		\$14	
Attic / crawl space fans		\$14	
Other:		\$32	

### Gas fuel piping

\$14 for the first four, \$2.57 for each additional. Please indicate number of fuel gas piping outlets below:

Furnace, etc.			
Gas heat pump			
Wall / suspended / unit heater			
Water heater / boiler			
Fireplace			
Range			
Barbecue			
Clothes dryer			
Other:			

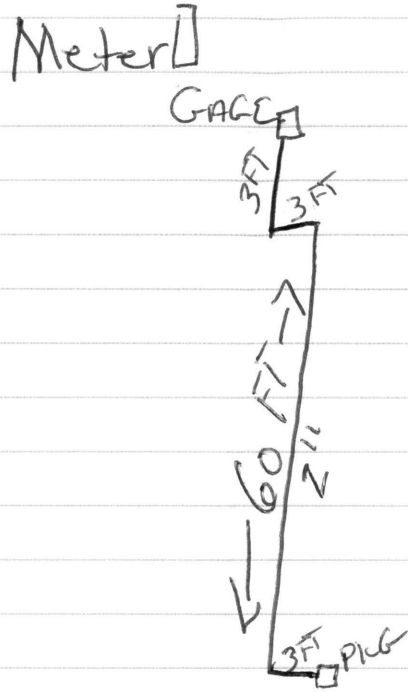
### Other appliances

Including oil tanks, gas and diesel generators, gas and electric kilns, gas appliances / equipment not included above		\$32	
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### Mechanical permit fees

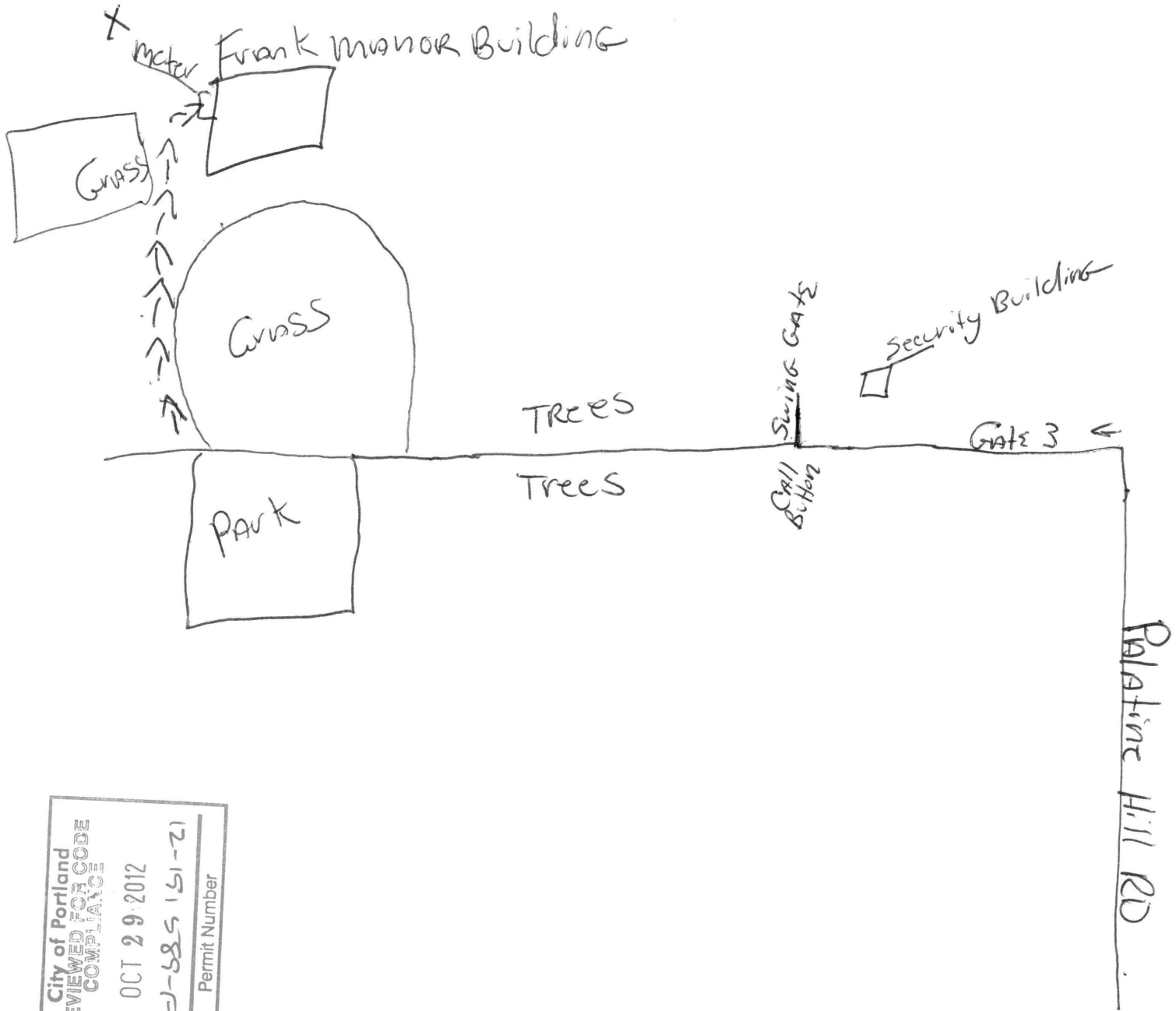
Subtotal	
Minimum permit fee (\$95)	
Commercial plan review (60% of permit fee)	
State surcharge (12% of permit fee)	
<b>TOTAL PERMIT FEE</b>	

# Lewis & Clark College



12-191589-FA

City of Portland  
REVIEWED FOR CODE  
COMPLIANCE  
OCT 29 2012  
12-191589-FA  
Permit Number



Lewis + Clark College

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12-191589-FA

# Facilities Checksheet Response

Permit #: 12-191589-000-00-FA

Date: 10-16-2012

Customer name and phone number: Lewis Clark College, Sharon Hayes 503 768 7843

Note: Please number each change in the '#’ column. Use as many lines as necessary to describe your changes. Indicate which reviewer’s checksheet you are responding to and the item your change addresses. If the item is not in response to a checksheet, write **customer** in the last column.

#	Description of changes, revisions, additions, etc.	Checksheet and item #
1.	Tom Starvo's Boiler received permit for Gas line. That permit will be supported by the building permit	
2.	Installation book attached. <sup>Area 20 8m x 1500</sup> Flue lining material ordered and will be installed as soon as delivered	
3.	Attached copy of building code indicates "And" boiler is 1M BTU's, but boiler Rm is <sup>019B</sup> 141 sq ft. See attached floor plan	
4.	See No. 2 above	
5.	Building fully sprinkled. See attached drawing for location of heads in mechanical Rm.	

(For office use only)

**Natural Gas Modulating &  
Condensing Hot Water Boiler  
Models:**

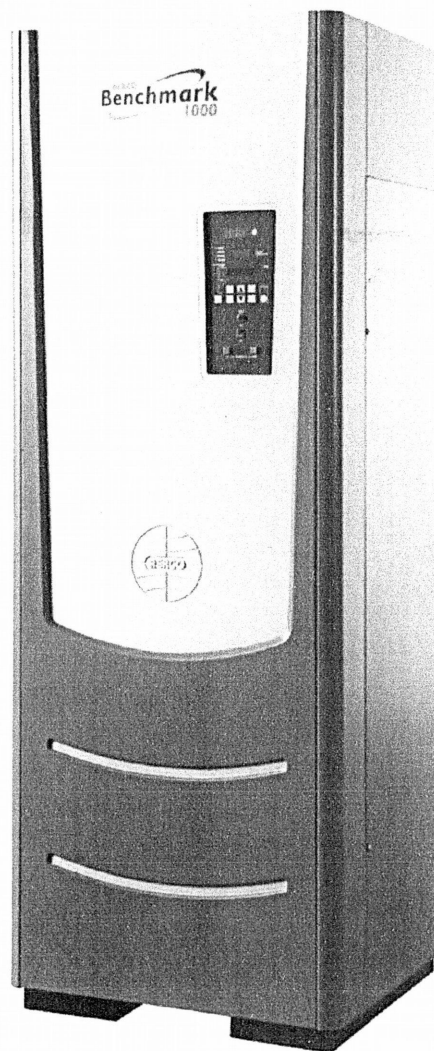
- **BMK750**
- **BMK1000**

**Applicable to Serial Numbers  
G-11-2267 and Above**

# **USER MANUAL**

Installation, Operation and Maintenance

## **BENCHMARK Series Gas-Fired Boilers**



03/09/2012



**Technical Support**  
**(Mon-Fri, 8am-5pm EST)**

**1-800-526-0288**

**[www.aerco.com](http://www.aerco.com)**

**Disclaimer**

The information contained in this manual is subject to change without notice from AERCO International, Inc. AERCO makes no warranty of any kind with respect to this material, including but not limited to implied warranties of merchantability and fitness for a particular application. AERCO International is not liable for errors appearing in this manual. Nor for incidental or consequential damages occurring in connection with the furnishing, performance, or use of this material.

**2.12.2 Combustion Air from Inside the Building**

When combustion air is provided from within the building, it must be supplied through two permanent openings in an interior wall. Each opening must have a free area of not less than one square inch per 1000 BTUH of total input or 1000 square inches of free area. The free area must take into account any restrictions, such as louvers.

**2.13 SEALED COMBUSTION**

The AERCO Benchmark 750 & 1000 MBH Boilers are UL listed for 100%-sealed combustion. For sealed combustion installations, the screen inlet air ductwork must then be attached directly to the unit's air inlet.

In a sealed combustion air application, the combustion air ducting pressure losses must be taken into account when calculating the total maximum allowable venting run. See the AERCO Benchmark Venting and Combustion Air Guide, GF-2050. When using the heater in a sealed combustion air configuration, each unit must have a minimum 6 inch diameter connection at the unit.



**Burner Assembly Inspection - Continued**

**NOTE:**

The burner assembly is heavy, weighing approximately 25 pounds.

16. Remove the burner assembly from burner flange by pulling straight up.
17. Remove and replace the burner gasket.

**NOTE:**

During reassembly, apply a light coating of high-temperature, anti-seize lubricant to the threads of the igniter-injector and grounding screw. Also, ensure that the igniter-injector is properly positioned as indicated in Figure 7-3. Torque the igniter-injector to 170 - 180 in-lbs.

18. Beginning with the burner assembly removed in step 16, reinstall all the components in the reverse order that they were removed.
19. Ensure that the igniter-injector and flame detector cutouts in the burner plate are properly aligned with the heat exchanger top flange.

**7.8 CONDENSATE DRAIN TRAP**

The Benchmark Boiler contains a condensate trap as shown in Chapter 2, Figure 2-5. The trap is located external to the unit and attached to the drain pipe from the exhaust manifold. This trap should be inspected and cleaned in accordance with the maintenance schedule shown in Table 7-1 to ensure proper operation. To inspect and clean the trap, proceed as follows:

**Condensate Drain Trap**

1. Disconnect the external condensate trap by loosening the union pipe connection between the trap and the exhaust manifold drain pipe.
2. Remove the connections on the inlet and outlet sides of the condensate trap shown in Figure 7-6.
3. Loosen the four (4) thumbscrews securing the cover on the condensate trap. Remove the cover.
4. Remove the float from the condensate trap.
5. Remove the O-ring and orifice gaskets from the trap. AERCO recommends that these items be replaced annually.
6. Thoroughly clean the trap and float. Also inspect the drain piping for blockage. If the trap cannot be thoroughly cleaned, replace the trap.
7. After the above items have been inspected and thoroughly cleaned, replace the O-ring (84017) and orifice gasket (81092) with new parts.
8. Reassemble all piping and hose connections to the condensate trap inlet and outlet. Reconnect trap to exhaust manifold drain.

#### **2.10.14 AUXILIARY RELAY CONTACTS**

Each unit is equipped with a single pole double throw (SPDT) relay that is energized when there is a demand for heat and de-energized after the demand for heat is satisfied. The relay is provided for the control of auxiliary equipment, such as pumps and louvers, or can be used as a unit status indicator (firing or not firing). Its contacts are rated for 120 VAC @ 5 amps. Refer to Figure 2-12 to locate the AUX RELAY terminals for wiring connections.

#### **2.11 FLUE GAS VENT INSTALLATION**

AERCO Gas Fired Venting and Combustion Air Guide, GF-2050 must be consulted before any flue or combustion air venting is designed or installed. Suitable, U/L approved, positive pressure, watertight vent materials **MUST** be used for safety and UL certification. Because the unit is capable of discharging low temperature exhaust gases, the flue must be pitched back towards the unit a minimum of 1/4" per foot to avoid any condensate pooling and to allow for proper drainage.

While there is a positive flue pressure during operation, the combined pressure drop of vent and combustion air systems must not exceed 140 equivalent feet or 1.9" W.C. Fittings as well as pipe lengths must be calculated as part of the equivalent length. For a natural draft installation the draft must not exceed - 0.25" W.C. These factors must be planned into the vent installation. If the maximum allowable equivalent lengths of piping are exceeded, the unit will not operate properly or reliably.

For Massachusetts installations, the Heatfab Division of the Selkirk Corporation provides vent systems which conform to all applicable requirements for installations within the Commonwealth of Massachusetts. Contact information for this supplier is as follows:

Selkirk Corporation  
Heatfab Division  
130 Industrial Blvd.  
Turners Falls, MA 01376  
Phone: 1-800-772-0739  
[www.heat-fab.com](http://www.heat-fab.com)

#### **2.12 COMBUSTION AIR**

The AERCO Benchmark Boiler Venting and Combustion Air Guide, GF-2050 **MUST** be consulted before any flue or inlet air venting is designed or installed. Air supply is a direct requirement of ANSI 223.1, NFPA-54, CSA B149.1 and local codes. These codes should be consulted before a permanent design is determined.

The combustion air must be free of chlorine, halogenated hydrocarbons or other chemicals that can become hazardous when used in gas-fired equipment. Common sources of these compounds are swimming pools, degreasing compounds, plastic processing, and refrigerants. Whenever the environment contains these types of chemicals, combustion air **MUST** be supplied from a clean area outdoors for the protection and longevity of the equipment and warranty validation.

The more common methods of combustion air supply are outlined in the following paragraphs. For combustion air supply from ducting, consult the AERCO GF-2050, Gas Fired Venting and Combustion Air Guide.

##### **2.12.1 Combustion From Outside the Building**

Air supplied from outside the building must be provided through two permanent openings. For each unit these two openings must have a free area of not less than one square inch for each 4000 BTUs input of the equipment or 250 square inches of free area. The free area must take into account restrictions such as louvers and bird screens. For Canada installations, refer to the requirements specified in CSA B149.1-10, paragraphs 8.4.1 and 8.4.3.