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Form # P 04

**DISPLAY THIS CARD ON PRINCIPAL FRONTAGE OF WORK  
CITY OF PORTLAND**

Please Read Application And Notes, if Any, Attached

**BUILDING INSPECTION**

**PERMIT**

PERMIT ISSUED  
Permit Number: 20060191006  
CITY OF PORTLAND

This is to certify that ZACH'S REAL ESTATE CO LLC  
has permission to Relocate kitchen equipment, replace 2 cabinets, one new and using existing duct work  
AT 65 PORTLAND ST PORTLAND, OR 97203 033 A019001

provided that the person or persons firm or corporation accepting this permit shall comply with all of the provisions of the Statutes of this State and of the Ordinances of the City of Portland regulating the construction, maintenance and use of buildings and structures, and of the application on file in this department.

Apply to Public Works for street line and grade if nature of work requires such information.

Notification of inspection must be given and when permission is procured before this building or part thereof is altered or closed-in. 24 HOUR NOTICE IS REQUIRED.

A certificate of occupancy must be procured by owner before this building or part thereof is occupied.

**OTHER REQUIRED APPROVALS**  
Fire Dept. Oreg Crews 2-21-06  
Health Dept. \_\_\_\_\_  
Appeal Board \_\_\_\_\_  
Other \_\_\_\_\_  
Department Name \_\_\_\_\_

*[Signature]*  
Director - Building & Inspection Services

**PENALTY FOR REMOVING THIS CARD**

**City of Portland, Maine - Building or Use Permit Application**

389 Congress Street, 04101 Tel: (207) 874-8703, Fax: (207) 874-8716

Permit No: 06-0191	Issue Date:	CBL: 033 4019001
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Location of Construction: 65 PORTLAND ST	Owner Name: ZACH'S REAL ESTATE CO LLC	Owner Address: 65 PORTLAND ST # 1	Phone:
Business Name:	Contractor Name:	Contractor Address: Portland	Phone:
Lessee/Buyer's Name	Phone:	Permit Type: Alterations - Commercial	Zone:

Past Use: Commercial	Proposed Use: Commecial/ Back Bay Grill/ Relocate kitchen equipment, replace 2 old hoods w/ one new hood using existing duct work	Permit Fee: \$201.00	Cost of Work: \$20,000.00	CEO District: 1
Proposed Project Description: Relocate kitchen equipment, replace 2 old hoods w/ one new hood using existing duct work		FIRE DEPT: <input checked="" type="checkbox"/> Approved <input type="checkbox"/> Denied <i>— NIPA 96</i>	INSPECTION: Use Group <i>A2</i> Type <i>N/A</i> <i>2/22/06</i> <i>[Signature]</i>	
		Signature: <i>[Signature]</i>	Signature: <i>[Signature]</i>	
PEDESTRIAN ACTIVITIES DISTRICT (P.A.D.)				
Action: <input type="checkbox"/> Approved <input type="checkbox"/> Approved w/Conditions <input type="checkbox"/> Denied				
Signature:			Date:	

Permit Taken By: Idobson	Date Applied For: 02/07/2006	<b>Zoning Approval</b>
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Special Zone or Reviews	Zoning Appeal	Historic Preservation
<input type="checkbox"/> Shoreland	<input type="checkbox"/> Variance	<input type="checkbox"/> Not in District or Landmark
<input type="checkbox"/> Wetland	<input type="checkbox"/> Miscellaneous	<input type="checkbox"/> Does Not Require Review
<input type="checkbox"/> Flood Zone	<input type="checkbox"/> Conditional Use	<input type="checkbox"/> Requires Review
<input type="checkbox"/> Subdivision	<input type="checkbox"/> Interpretation	<input type="checkbox"/> Approved
<input type="checkbox"/> Site Plan	<input type="checkbox"/> Approved	<input type="checkbox"/> Approved w/Conditions
Maj <input type="checkbox"/> Minor <input type="checkbox"/> MM <input type="checkbox"/>	<input type="checkbox"/> Denied	<input type="checkbox"/> Denied
Date:	Date:	Date:

**CERTIFICATION**

I hereby certify that I am the owner of record of the named property, or that the proposed work is authorized by the owner of record and that I have been authorized by the owner to make this application as his authorized agent and I agree to conform to all applicable laws of this jurisdiction. In addition, if a permit for work described in the application is issued, I certify that the code official's authorized representative shall have the authority to enter all areas covered by such permit at any reasonable hour to enforce the provision of the code(s) applicable to such permit.

SIGNATURE OF APPLICANT	ADDRESS	DATE	PHONE
RESPONSIBLE PERSON IN CHARGE OF WORK, TITLE		DATE	PHONE

**City of Portland, Maine - Building or Use Permit**

389 Congress Street, 04101 Tel: (207) 874-8703, Fax: (207) 874-8716

<b>Permit No:</b> 06-0 191	<b>Date Applied For:</b> 02/07/2006	<b>CBL:</b> 033 A019001
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<b>Location of Construction:</b> 65 PORTLAND ST	<b>Owner Name:</b> ZACH'S REAL ESTATE CO LLC	<b>Owner Address:</b> 65 PORTLAND ST # 1	<b>Phone:</b>
<b>Business Name:</b>	<b>Contractor Name:</b>	<b>Contractor Address:</b> Portland	<b>Phone:</b>
<b>Lessee/Buyer's Name</b>	<b>Phone:</b>	<b>Permit Type:</b> Alterations - Commercial	

<b>Proposed Use:</b> Commecial/ Back Bay Grill/ Relocate kitchen equipment, replace 2 old hoods w/ one new hood using existing duct work	<b>Proposed Project Description:</b> Relocate kitchen equipment, replace 2 old hoods w/ one new hood using existing duct work
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**Dept:** Building      **Status:** Approved with Conditions      **Reviewer:** Mike Nugent      **Approval Date:** 02/22/2006  
**Note:**      **Ok to Issue:**   
1) Must have an approved fire supression system.

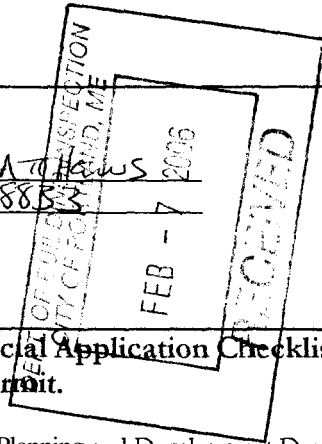
**Dept:** Fire      **Status:** Approved with Conditions      **Reviewer:** Cptn Greg Cass      **Approval Date:** 02/21/2006  
**Note:**      **Ok to Issue:**   
1) Install shall comply with NFPA 96



# General Building Permit Application

If you or the property owner owes real estate or personal property taxes or user charges on any property within the City, payment arrangements must be made before permits of any kind are accepted.

<u>65 Portland Back Bay</u>			
Tax Assessor's Chart, Block & Lot Chart#      Block#      Lot# <u>33      A      19</u>		Owner: <u>ZACH'S REAL ESTATE CO. LLC</u>	Telephone: <u>772-8833</u>
Lessee/Buyer's Name (If Applicable) <u>BBG Acquisition Co. LLC</u> <u>Back Bay Grill</u>		Applicant name, address & telephone: <u>LARRY A. MATTHEWS JR.</u> <u>133 SUMMER ST.</u> <u>Kennebunk, ME. 04043</u> <u>415-8378</u>	Cost Of Work: \$ <u>20,000.00</u> Fee: \$ _____ C of O Fee: <u>201.00</u>
Current Specific use: <u>BACK BAY GRILL - RESTAURANT</u> Proposed Specific use: <u>SAME</u>		Project description: <u>RELOCATE Kitchen Equipment. REPLACE 2 hood</u> <u>with ONE New Hood USING existing duct work.</u>	
Contractor's name, address & telephone:			
Who should we contact when the permit is ready: <u>LARRY A. MATTHEWS</u>		Phone: <u>772-8833</u>	
Mailing address: <u>65 PORTLAND ST.</u> <u>PORTLAND, ME. 04101</u>			



Please submit all of the information outlined in the Commercial Application Checklist. Failure to do so will result in the automatic denial of your permit.

In order to be sure the City fully understands the full scope of the project, the Planning and Development Department may request additional information prior to the issuance of a permit. For further information visit us on-line at [www.portlandmaine.gov](http://www.portlandmaine.gov), stop by the Building Inspections office, room 315 City Hall or call 874-8703.

I hereby certify that I am the Owner of record of the named property, or that the owner of record authorizes the proposed work and that I have been authorized by the owner to make this application as his/her authorized agent. I agree to conform to all applicable laws of this jurisdiction. In addition, if a permit for work described in this application is issued, I certify that the Code Official's authorized representative shall have the authority to enter all areas covered by this permit at any reasonable hour to enforce the provisions of the codes applicable to this permit.

Signature of applicant: <u>[Signature]</u>	Date: <u>2/7/06</u>
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This is not a permit; you may not commence ANY work until the permit is issued.



CITY OF PORTLAND  
BUILDING CODE CERTIFICATE  
389 Congress St., Room 315  
Portland, Maine 04 101

TO: Inspector of Buildings ~~City~~ of Portland, Maine  
Department of Planning & Urban Development  
Division of Housing & Community Service

FROM: EDWARD W HOLLIDGE, P.E.

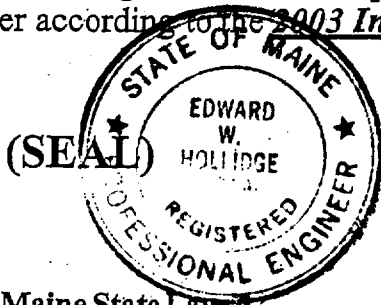
RE: Certificate of Design

DATE: 2/6/06

These plans and/ or specifications covering construction work on:

BACK BAY CRILL, 65 PORTLAND ST, PORTLAND ME 04101

Have been designed and drawn up by the undersigned, a Maine registered Architect / Engineer according to the 2003 International Building Code and local amendments.



Signature: Ed Hollidge

Title: P.E.

Firm: \_\_\_\_\_

Address: 52 TWO LIGHTS RD  
CAPE ELIZABETH ME 04107

As per Maine State Law:

\$50,000.00 or more in new construction, repair expansion, addition, or modification for Building or Structures, shall be prepared by a registered design Professional.

FROM DESIGNER: \_\_\_\_\_

DATE: 106

Job Name: BACK BAY CELL

Address of Construction: 65 PORTLAND ST PORTLAND ME 04101

**2003 International Building Code**

Construction project was designed according to the building code criteria listed below:

Building Code and Year \_\_\_\_\_ Use Group Classification(s) \_\_\_\_\_

Type of Construction \_\_\_\_\_

Will the Structure have a Fire suppression system in Accordance with Section 903.3.1 of the 2003 IRC \_\_\_\_\_

Is the Structure mixed use? \_\_\_\_\_ if yes, separated or non separated (see Section 302.3) \_\_\_\_\_

Supervisory alarm system? \_\_\_\_\_ Geotechnical/Soils report required? (See Section 1802.2) \_\_\_\_\_

**STRUCTURAL DESIGN CALCULATIONS**

\_\_\_\_\_ Submitted for all structural members  
(106.1, 106.1.1)

**DESIGN LOADS ON CONSTRUCTION DOCUMENTS (1803)**

Uniformly distributed floor live loads (7603.11, 1807)

Floor Area Use	Loads Shown
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

**Wind loads (1803.1.4, 1809)**

\_\_\_\_\_ Design option utilized (1809.1.1, 1809.5)

\_\_\_\_\_ Basic wind speed (1809.3)

\_\_\_\_\_ Building category and wind importance factor,  $I_w$  (Table 1804.5, 1809.5)

\_\_\_\_\_ Wind exposure category (1809.4)

\_\_\_\_\_ Internal pressure coefficient (ASCE 7)

\_\_\_\_\_ Component and cladding pressures (1809.1.1; 1809.5.2.2)

\_\_\_\_\_ Main force wind pressures (7603.1.1, 1809.5.2.1)

**Earthquake design data (1803.1.5, 1614 - 1623)**

\_\_\_\_\_ Design option utilized (1614.1)

\_\_\_\_\_ Seismic use group ("Category") (Table 1604.5, 1616.2)

\_\_\_\_\_ Spectral response coefficients,  $S_Ds$  &  $S_D1$  (1615.1)

\_\_\_\_\_ Site class (1615.1.5)

\_\_\_\_\_ Live load reduction (1803.1.1, 1807.9, 1607.10)

\_\_\_\_\_ Roof live loads (1803.1.2, 1607.11)

\_\_\_\_\_ Roof snow loads (7603.7.3, 1808)

\_\_\_\_\_ Ground snow load,  $P_g$  (1608.2)

\_\_\_\_\_ If  $P_g > 10$  psf, flat-roof snow load,  $P_f$  (1801.3)

\_\_\_\_\_ If  $P_g > 10$  psf, snow exposure factor,  $C_e$  (Table 1808.3.1)

\_\_\_\_\_ If  $P_g > 10$  psi, snow load importance factor,  $I_s$  (Table 1804.5)

\_\_\_\_\_ Roof thermal factor,  $C_t$  (Table 1808.3.2)

\_\_\_\_\_ Sloped roof snowload,  $P_s$  (1808.4)

\_\_\_\_\_ Seismic design category (1616.3)

\_\_\_\_\_ Basic seismic-force-resisting system (Table 1617.5.2)

\_\_\_\_\_ Response modification coefficient,  $R$ , and deflection amplification factor,  $C_d$  (Table 1617.5.2)

\_\_\_\_\_ Analysis procedure (1616.6, 1617.5)

\_\_\_\_\_ Design base shear (1617.4, 1617.5.1)

**Flood loads (1803.1.6, 1612)**

\_\_\_\_\_ Flood hazard area (1612.3)

\_\_\_\_\_ Elevation of structure

**Other loads**

\_\_\_\_\_ Concentrated loads (1607.4)

\_\_\_\_\_ Partition loads (1607.5)

\_\_\_\_\_ Impact loads (1607.8)

\_\_\_\_\_ Misc. loads (Table 1607.8, 1607.8.1, 1607.7, 1607.12, 1607.13, 1610, 1811, 2404)



CITY OF PORTLAND  
BUILDING CODE CERTIFICATE  
389 Congress St., Room 315  
Portland, Maine 04101

ACCESSIBILITY CERTIFICATE

Designer: \_\_\_\_\_

Address of Project: \_\_\_\_\_

Nature of Project: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

The technical submissions covering the proposed construction work as described above have been designed in compliance with applicable referenced standards found in the Maine Human Rights Law and Federal Americans with Disability Act.

Signature: \_\_\_\_\_

Title: \_\_\_\_\_

Firm: \_\_\_\_\_

Address : \_\_\_\_\_

\_\_\_\_\_

Phone: \_\_\_\_\_

(SEAL)

**NOTE: If this project is a new Multi Family Structure of 4 units or more, this project must also be designed in compliance with the Federal Fair Housing Act. On a separate submission, please explain in narrative form the method of compliance.**



# PORTLAND MAINE

*Strengthening a Remarkable City, Building a Community for Life • www.portlandmaine.gov*

Lee Urban- Director of Planning and Development  
Michael J. Nugent- inspections Division Director

## Kitchen Exhaust System Checklist and Code Provisions

Dear Applicant,

The following is a checklist to assist you in filing for a permit for a Kitchen Exhaust system. The applicable Mechanical Code provisions have also been attached. Please complete this and submit job specific construction documents that demonstrate compliance with the attached information.

### Type of System:

Type I  Type II

(Type I systems are systems that vent fryers, grills, broilers, ovens or woks. Type II systems are systems that vent steamers and other non grease producing appliances)

### Type of Materials:

Is the hood Stainless steel or other type of steel? STAINLESS If Other, what Type? \_\_\_\_\_

Is the duct work Stainless steel or other type of steel? \_\_\_\_\_ If Other, what type? ALUMINIZED\*

Thickness of the steel for the hood 18-2.0

Thickness of the duct for the hood 18

Type of Hood and Duct supports

WALL MOUNTED CANOPY - CHAIN SUPPORTS AT FRONT CORNERS

Type of seams and Joints WELDED



Grease Gutters provided? YES

Hood Clearance from Combustibles materials 30"  $\frac{1}{2}$

Duct Clearance from Combustibles materials 30"  $\frac{1}{2}$

Vibration Isolation System:  
NO

Air Velocity within the duct system 1500 FPM ESTIMATED

Grease accumulation prevention system  
YES

Cleanouts YES

Grease Duct enclosure EXPOSED

Exhaust Termination YES

Fire Suppression system YES

Exhaust fan mounting and clearance from the roof or wall 1' FROM WALL TO  
NO COMBUSTIBLES

Exhaust fan distance from other vents or openings 5' - TO WINDOWS ABOVE

Exhaust fan height above adjoining grade 7'±

### Hood Specs

Style of hood WALL MOUNTED CANOPY

Type of Filter: ALUMINUM Baffle

Height of filter above nearest cooking surface: 3'-8"  $\frac{1}{2}$

Capacity of hood in CFM 2030 CFM

Make up Air system description and capacity  
N/A

## SECTION 506 COMMERCIAL KITCHEN HOOD VENTILATION SYSTEM DUCTS AND EXHAUST EQUIPMENT

**506.1 General.** Commercial kitchen hood ventilation ducts and exhaust equipment shall comply with the requirements of this section. Commercial kitchen grease ducts shall be designed for the type of cooking appliance and hood served.

**506.2 Corrosion protection.** Ducts exposed to the outside atmosphere or subject to a corrosive environment shall be protected against corrosion in an approved manner.

**506.3 Ducts serving Type I hoods.** Type I exhaust ducts shall be independent of all other exhaust systems except as provided in Section 506.3.5. Commercial kitchen duct systems serving Type I hoods shall be designed, constructed and installed in accordance with Sections 506.3.1 through 506.3.12.3.

**506.3.1 Duct materials.** Ducts serving Type I hoods shall be constructed of materials in accordance with Sections 506.3.1.1 and 506.3.1.2.

**506.3.1.1 Grease duct materials.** Grease ducts serving Type I hoods shall be constructed of steel not less than 0.055 inch (1.4 mm) (No. 16 Gage) in thickness or stainless steel not less than 0.044 inch (1.1 mm) (No. 18 Gage) in thickness.

**Exception:** Listed and labeled factory-built commercial kitchen grease ducts shall be installed in accordance with Section 304.1.

**506.3.1.2 Makeup air ducts.** Make up air ducts connecting to or within 18 inches (457 mm) of a Type I hood shall be constructed and installed in accordance with Sections 603.1, 603.3, 603.4, 603.9, 603.10 and 603.12. Duct insulation installed within 18 inches (457 mm) of a Type I hood shall be noncombustible or shall be listed for the application.

**506.3.2 Joints, seams and penetrations of grease ducts.** Joints, seams and penetrations of grease ducts shall be made with a continuous liquid-tight weld or braze made on the external surface of the duct system.

### Exceptions:

1. Penetrations shall not be required to be welded or brazed where sealed by devices that are listed for the application.
2. Internal welding or brazing shall not be prohibited provided that the joint is formed or ground smooth and is provided with ready access for inspection.
3. Listed and labeled factory-built commercial kitchen grease ducts installed in accordance with Section 304.1.

**506.3.2.1 Duct joint types.** Duct joints shall be butt joints or overlapping duct joints of either the telescoping or bell type. Overlapping joints shall be installed to prevent ledges and obstructions from collecting grease or interfering with gravity drainage to the intended collection point. The difference between the inside cross-sectional dimensions of overlapping sections of duct shall not exceed 0.25 inch (6 mm). The length of overlap for overlapping duct joints shall not exceed 2 inches (51 mm).

**506.3.2.2 Duct-to-hood joints.** Duct-to-hood joints shall be made with continuous internal or external liquid-tight welded or brazed joints. Such joints shall be smooth, accessible for inspection, and without grease traps.

**Exceptions:** This section shall not apply to:

1. A vertical duct-to-hood collar connection made in the top plane of the hood in accordance with all of the following:
  - 1.1. The hood duct opening shall have a 1-inch-deep (25 mm), full perimeter, welded flange turned down into the hood interior at an angle of 90 degrees from the plane of the opening.
  - 1.2. The duct shall have a 1-inch-deep (25 mm) flange made by a 1-inch by 1-inch (25 mm by 25 mm) angle iron welded to the full perimeter of the duct not less than 1 inch (25 mm) above the bottom end of the duct.
  - 1.3. A gasket rated for use at not less than 1,500°F (815°C) is installed between the duct flange and the top of the hood.
  - 1.4. The duct-to-hood joint shall be secured by stud bolts not less than 0.25 inch (6.4 mm) in diameter welded to the hood with a spacing not greater than 4 inches (102 mm) on center for the full perimeter of the opening. All bolts and nuts are to be secured with lockwashers.
2. Listed and labeled duct-to-hood collar connections installed in accordance with Section 304.1.

**506.3.2.3 Duct-to-exhaust fan connections.** Duct-to-exhaust fan connections shall be flanged and gasketed at the base of the fan for vertical discharge fans; shall be flanged, gasketed and bolted to the inlet of the fan for side-inlet utility fans; and shall be flanged, gasketed and bolted to the inlet and outlet of the fan for in-line fans.

**506.3.2.4 Vibration isolation.** A vibration isolation connector for connecting a duct to a fan shall consist of noncombustible packing in a metal sleeve joint of approved design or shall be a coated-fabric flexible duct connector listed and labeled for the application. Vibration isolation connectors shall be installed only at the connection of a duct to a fan inlet or outlet.

**506.3.3 Grease duct supports.** Grease duct bracing and supports shall be of noncombustible material securely attached to the structure and designed to carry gravity and seismic loads within the stress limitations of the *International Building Code*. Bolts, screws, rivets and other mechanical fasteners shall not penetrate duct walls.

**506.3.4 Air velocity.** Grease duct systems serving a Type I hood shall be designed and installed to provide an air velocity within the duct system of not less than 1,500 feet per minute (7.6 m/s).

**Exception:** The velocity limitations shall not apply within duct transitions utilized to connect ducts to differently

**506.3.11 Grease duct fire-resistive access opening.** Where cleanout openings are located in ducts within a fire-resistance-rated enclosure, access openings shall be provided in the enclosure at each cleanout point. Access openings shall be equipped with tight-fitting sliding or hinged doors that are equal in fire-resistive protection to that of the shaft or enclosure. An approved sign shall be placed on access opening panels with wording as follows: "ACCESS PANEL. DO NOT OBSTRUCT."

**506.3.12 Exhaust outlets serving Type I hoods.** Exhaust outlets for grease ducts serving Type I hoods shall conform to the requirements of Sections 506.3.12.1 through 506.3.12.3.

**506.3.12.1 Termination above the roof.** Exhaust outlets that terminate above the roof shall have the discharge opening located not less than 40 inches (1016 mm) above the roof surface.

**506.3.12.2 Termination through an exterior wall.** Exhaust outlets shall be permitted to terminate through exterior walls where the smoke, grease, gases, vapors, and odors in the discharge from such terminations do not create a public nuisance or a fire hazard. Such terminations shall not be located where protected openings are required by the International Building Code. Other exterior openings shall not be located within 3 feet (914 mm) of such terminations.

**506.3.12.3 Termination location.** Exhaust outlets shall be located not less than 10 feet (3048 mm) horizontally from parts of the same or contiguous buildings, adjacent property lines and air intake openings into any building and shall be located not less than 10 feet (3048 mm) above the adjoining grade level.

**Exception:** Exhaust outlets shall terminate not less than 5 feet (1524 mm) from an adjacent building, adjacent property line and air intake openings into a building where air from the exhaust outlet discharges away from such locations.

**506.4 Ducts serving Type II hoods.** Single or combined Type II exhaust systems for food-processing operations shall be independent of all other exhaust systems. Commercial kitchen exhaust systems serving Type II hoods shall comply with Sections 506.4.1 and 506.4.2.

**506.4.1 Type II exhaust outlets.** Exhaust outlets for ducts serving Type II hoods shall comply with Sections 401.5 and 401.5.2. Such outlets shall be protected against local weather conditions and shall meet the provisions for exterior wall opening protectives in accordance with the International Building Code.

**506.4.2 Ducts.** Ducts and plenums serving Type II hoods shall be constructed of rigid metallic materials. Duct construction, installation, bracing and supports shall comply with Chapter 6. Ducts subject to positive pressure and ducts conveying moisture-laden or waste-heat-laden air shall be constructed, joined and sealed in an approved manner.

**506.5 Exhaust equipment.** Exhaust equipment, including fans and grease reservoirs, shall comply with Section 506.5.1

through 506.5.5 and shall be of an approved design or shall be listed for the application.

**506.5.1 Exhaust fans.** Exhaust fan housings serving a Type I hood shall be constructed as required for grease ducts in accordance with Section 506.3.1.1.

**Exception:** Fans listed and labeled in accordance with UL 762.

**506.5.1.1 Fan motor.** Exhaust fan motors shall be located outside of the exhaust airstream.

**506.5.2 Exhaust fan discharge.** Exhaust fans shall be positioned so that the discharge will not impinge on the roof, other equipment or appliances or parts of the structure. A vertical discharge fan shall be manufactured with an approved drain outlet at the lowest point of the housing to permit drainage of grease to an approved grease reservoir.

**506.5.3 Exhaust fan mounting.** An upblast fan shall be hinged and supplied with a flexible weatherproof electrical cable to permit inspection and cleaning. The ductwork shall extend a minimum of 18 inches (457 mm) above the roof surface.

**506.5.4 Clearances.** Exhaust equipment serving a Type I hood shall have a clearance to combustible construction of not less than 18 inches (457 mm).

**Exception:** Factory-built exhaust equipment installed in accordance with Section 304.1 and listed for a lesser clearance.

**506.5.5 Termination location.** The outlet of exhaust equipment serving Type I hoods, shall be in accordance with Section 506.3.12.3

**Exception:** The minimum horizontal distance between vertical discharge fans and parapet-type building structures shall be 2 feet (610 mm) provided that such structures are not higher than the top of the fan discharge opening.

## SECTION 507 COMMERCIAL KITCHEN HOODS

**507.1 General.** Commercial kitchen exhaust hoods shall comply with the requirements of this section. Hoods shall be Type I or Type II and shall be designed to capture and confine cooking vapors and residues.

### Exceptions:

1. Factory-built commercial exhaust hoods which are tested in accordance with UL 710, listed, labeled and installed in accordance with Section 304.1 shall not be required to comply with Sections 507.4, 507.7, 507.11, 507.12, 507.13, 507.14 and 507.15.
2. Factory-built commercial cooking recirculating systems which are tested in accordance with UL 197, listed, labeled and installed in accordance with Section 304.1 shall not be required to comply with Sections 507.4, 507.5, 507.7, 507.12, 507.13, 507.14 and 507.15.
3. Net exhaust volumes for hoods shall be permitted to be reduced during no-load cooking conditions, where

installed in frames or holders so as to be readily removable without the use of separate tools, unless designed and installed to be cleaned in place and the system is equipped for such cleaning in place. Removable filter units shall be of a size that will allow them to be cleaned in a dishwashing machine or pot sink. Filter units shall be arranged in place or provided with drip-intercepting devices to prevent grease or other condensate from dripping into food or on food preparation surfaces.

**507.11.2 Mounting position.** Filters shall be installed at an angle of not less than 45 degrees (0.79 rad) from the horizontal and shall be equipped with a drip tray beneath the lower edge of the filters.

**507.12 Canopy size and location.** The inside lower edge of canopy-type commercial cooking hoods shall overhang or extend a horizontal distance of not less than 6 inches (152 mm) beyond the edge of the cooking surface, on all open sides. The vertical distance between the front lower lip of the hood and the cooking surface shall not exceed 4 feet (1219 mm).

**Exception:** The hood shall be permitted to be flush with the outer edge of the cooking surface where the hood is closed to the appliance side by a noncombustible wall or panel.

**507.13 Capacity of hoods.** Commercial food service hoods shall exhaust a minimum net quantity of air determined in accordance with this section and Sections 507.13.1 through 507.13.4. The net quantity of exhaust air shall be calculated by subtracting any airflow supplied directly to a hood cavity from the total exhaust flow rate of a hood. Where any combination of extra-heavy-duty, heavy-duty, medium-duty, and light-duty cooking appliances are utilized under a single hood, the highest exhaust rate required by this section shall be used for the entire hood.

**507.13.1 Extra-heavy-duty cooking appliances.** The minimum net airflow for Type I hoods used for extra-heavy-duty cooking appliances shall be determined as follows:

Type of Hood	CFM per linear foot of hood
Wall-mounted canopy	550
Single island canopy	700
Double island canopy (per side)	550
Backshelf/pass-over	Not allowed
Eyebrow	Not allowed

For SI: 1 cfm per linear foot = 1.55L/s per linear meter.

**507.13.2 Heavy-duty cooking appliances.** The minimum net airflow for Type I hoods used for heavy-duty cooking appliances shall be determined as follows:

Type of Hood	CFM per linear foot of hood
Wall-mounted canopy	400
Single island canopy	600
Double island canopy (per side)	400
Backshelf/pass-over	400
Eyebrow	Not allowed

For SI: 1 cfm per linear foot = 1.55L/s per linear meter.

**507.13.3 Medium-duty cooking appliances.** The minimum net airflow for Type I hoods used for medium-duty cooking appliances shall be determined as follows:

Type of Hood	CFM per linear foot of hood
Wall-mounted canopy	300
Single island canopy	500
Double island canopy (per side)	300
Backshelf/pass-over	300
Eyebrow	250

For SI: 1 cfm per linear foot = 1.55L/s per linear meter.

**507.13.4 Light-duty cooking appliances.** The minimum net airflow for Type I hoods used for light duty cooking appliances and food service preparation and cooking operations approved for use under a Type II hood shall be determined as follows:

Type of Hood	CFM per linear foot of hood
Wall-mounted canopy	200
Single island canopy	400
Double island canopy (per side)	250
Backshelf/pass-over	250
Eyebrow	250

For SI: 1 cfm per linear foot = 1.55L/s per linear meter.

**507.14 Noncanopy size and location.** Noncanopy-type hoods shall be located a maximum of 3 feet (914mm) above the cooking surface. The edge of the hood shall be setback a maximum of 1 foot (305 mm) from the edge of the cooking surface.

**507.15 Exhaust outlets.** Exhaust outlets located within the hood shall be located so as to optimize the capture of particulate matter. Each outlet shall serve not more than a 12-foot (3658 mm) section of hood.

**507.16 Performance test.** A performance test shall be conducted upon completion and before final approval of the installation of a ventilation system serving commercial cooking appliances. The test shall verify the rate of exhaust airflow required by Section 507.13, makeup airflow required by Section 508, and proper operation as specified in this chapter. The permit holder shall furnish the necessary test equipment and devices required to perform the tests.

**507.16.1 Capture and containment test.** The permit holder shall verify capture and containment performance of the exhaust system. This field test shall be conducted with all appliances under the hood at operating temperatures. Capture and containment shall be verified visually by observing smoke or steam produced by actual or simulated cooking, such as with smoke candles, smoke puffers, etc.

## SECTION 508 COMMERCIAL KITCHEN MAKEUP AIR

**508.1 Makeup air.** Makeup air shall be supplied during the operation of commercial kitchen exhaust systems that are provided for commercial cooking appliances. The amount of

**Edward W. Hollidge, P.E.**  
ENGINEERING

January 31, 2006

Back Bay Grill  
65 Portland Street  
Portland, Maine 04101

Attention: Larry Matthews, Jr. •

Dear Larry,

I have reviewed the existing exhaust hoods, duct and fan system serving the kitchen of the Back Bay Grill. The current system consists of two hoods located over **two** gas cooking appliances. The two hoods tie into common exhaust ductwork leading to a fan on the outside of the kitchen wall. From field observation during use and through discussions with cooking staff, smoke and odors are removed reasonably well using this system. The exact capacity **of** the existing fan is unknown at this time. (A balancing contractor can measure this airflow for some cost.) The smaller of the two hoods, located over the gas oven does not meet current **codes** because **of** the orientation **of** the filters. The ductwork appears in reasonable shape and installed correctly for kitchen use.

I understand that you wish to move the two cooking surfaces to a side by side location based on a plan done by Trimark United East. You propose to add a floor to ceiling wall approximately 7' from the back wall of the kitchen, locate the two ovens against that wall and install a wall mounted canopy hood above the two ovens, to exhaust both through a common duct to the existing fan. This move is only to make work more efficient for your staff and will not result in additional cooking load.

I reviewed the requirements of the International Mechanical Code, 2003 edition, which the City of Portland uses and the National Fire Protection Association Standard for Ventilation Control and Fire Protection **of** Commercial Cooking Operations, 2004 edition, used by the State Fire Marshal regarding the revision to your hood system.

A replacement hood system, a type I hood shall be 8' long which allows 6" overhang at the sides and face of the cooking surfaces. It should be installed so that the bottom of the hood is at least 2' over the cooking surfaces. (IMC) The plan is to remove the two

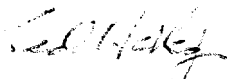
existing hoods, branch ductwork to the small hood, ductwork patched appropriately, i.e., welded, and the main duct removed to a gasket joint approximately 6' from the newer of the existing hoods. The wall mounted canopy hood will be installed and then new ductwork run to the existing joint. Any wall penetrations will be sealed appropriately. Talking with a local hood manufacturer, the weight of a new 8' hood is approximately 150 pounds. It will be fastened to the new wall, which will be metal stud construction with 5/8" drywall surfaces. Blocking should be added in the wall to accommodate the weight of the hood. Stainless steel shall be applied to the wall above the ovens extending to the bottom of the new hood for cleaning purposes.

The performance of the existing fan should improve with this change. There is less resistance to airflow with one long hood and duct than there is with the current configuration. Less resistance will provide more airflow through the filters over the cooking surfaces. IMC calls for 1500 feet per minute in the ductwork, and NFPA calls for 500 feet per minute (the biggest difference between the two codes) and it is my assumption that ductwork velocity will continue to be reasonable to remove grease and odors.

If you go forward with the planned changes, there are several elements to consider. New gas piping shall be performed by licensed personnel. A new fire extinguishing system shall be installed in the larger hood. The hood, filters and new ductwork shall all meet the requirements of the International Mechanical Code.

I hope this information is helpful. I would be glad to discuss the observations and recommendations. Thank you.

Sincerely,



Edward W. Hollidge, P.E.

