

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

Please Read  
Application And  
Notes, If Any,  
Attached

**BUILDING INSPECTION**

**PERMIT**

Permit Number: 070144

This is to certify that BURNHAM H PAGE & PA CIA G BURNHAM/Keeley stru

has permission to Elevator added to existing apartment building

AT 419 CLIMBERLAND AVE

036 G032001

**PERMIT ISSUED**  
APR 17 2007

provided that the person or persons, firm or corporation accepting this permit shall comply with all of the provisions of the Statutes of Maine 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.  
 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. Craig Cross

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: 07-0144	Issue Date:	CBL: 036 G032001
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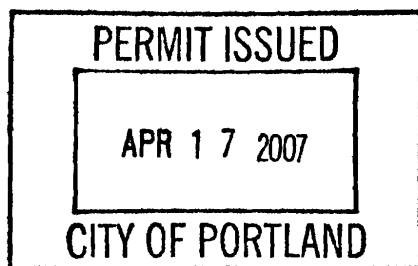
Location of Construction: 419 CUMBERLAND AVE	Owner Name: BURNHAM H PAGE & PATRICI	Owner Address: PO BOX 2082	Phone:
Business Name:	Contractor Name: Keeley Construction	Contractor Address: P.O. Box 1174 Portland	Phone: 2077738499
Lessee/Buyer's Name	Phone:	Permit Type: Additions - Multi Family	Zone: R3

Past Use: Multi-Family Residential	Proposed Use: Multi-Family Residential- Elevator added to existing apartment building	Permit Fee: \$1,595.00	Cost of Work: \$150,000.00	CEO District: 1
<i>legal use - 32 do (per minichue)</i>		FIRE DEPT: <input checked="" type="checkbox"/> Approved <input type="checkbox"/> Denied <i>See conditions</i>	INSPECTION: Use Group: <i>R2</i> Type: <i>10</i> <i>#117/07</i>	

Proposed Project Description: Elevator added to existing apartment building	Signature: <i>Craig Cass</i>	Signature: <i>[Handwritten 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: 02/09/2007	<b>Zoning Approval</b>
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<ol style="list-style-type: none"> <li>This permit application does not preclude the Applicant(s) from meeting applicable State and Federal Rules.</li> <li>Building permits do not include plumbing, septic or electrical work.</li> <li>Building permits are void if work is not started within six (6) months of the date of issuance. False information may invalidate a building permit and stop all work..</li> </ol>	<b>Special Zone or Reviews</b> <input type="checkbox"/> Shoreland <input type="checkbox"/> Wetland <input type="checkbox"/> Flood Zone <input type="checkbox"/> Subdivision <input checked="" type="checkbox"/> Site Plan <i>exemption</i> <i>207-0080</i> Maj <input type="checkbox"/> Minor <input type="checkbox"/> MM <input type="checkbox"/> <i>Ok w/ conditions</i> Date: <i>2/22/07</i> <i>Asen</i>	<b>Zoning Appeal</b> <input type="checkbox"/> Variance <input type="checkbox"/> Miscellaneous <input type="checkbox"/> Conditional Use <input type="checkbox"/> Interpretation <input type="checkbox"/> Approved <input type="checkbox"/> Denied Date: _____	<b>Historic Preservation</b> <input checked="" type="checkbox"/> Not in District or Landmark <input type="checkbox"/> Does Not Require Review <input type="checkbox"/> Requires Review <input type="checkbox"/> Approved <input type="checkbox"/> Approved w/Conditions <input type="checkbox"/> Denied <i>ABR</i> Date: _____
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**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> 07-0144	<b>Date Applied For:</b> 02/09/2007	<b>CBL:</b> 036 G032001
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<b>Location of Construction:</b> 419 CUMBERLAND AVE	<b>Owner Name:</b> BURNHAM H PAGE & PATRICI	<b>Owner Address:</b> PO BOX 2082	<b>Phone:</b>
<b>Business Name:</b>	<b>Contractor Name:</b> Keeley Construction	<b>Contractor Address:</b> P.O. Box 1174 Portland	<b>Phone:</b> (207) 773-8499
<b>Lessee/Buyer's Name</b>	<b>Phone:</b>	<b>Permit Type:</b> Additions - Multi Family	

<b>Proposed Use:</b> Multi-Family Residential- Elevator added to existing apartment building	<b>Proposed Project Description:</b> Elevator added to existing apartment building
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**Dept:** Zoning      **Status:** Approved with Conditions      **Reviewer:** Ann Machado      **Approval Date:** 02/22/2007

**Note:**      **Ok to Issue:**

- 1) This permit is being approved on the basis of plans submitted. Any deviations shall require a separate approval before starting that work.
- 2) As discussed during the review process, the property must be clearly identified prior to pouring concrete and compliance with the rear property line must be established. Due to the proximity of the rear property line of the proposed addition, it may be required to be located by a surveyor.

**Dept:** Building      **Status:** Approved      **Reviewer:** Mike Nugent      **Approval Date:** 04/17/2007

**Note:**      **Ok to Issue:**

**Dept:** Fire      **Status:** Approved with Conditions      **Reviewer:** Cptn Greg Cass      **Approval Date:** 03/13/2007

**Note:**      **Ok to Issue:**

- 1) The elevator lobby shall be enclosed.
- 2) A complete NFPA 101 code analysis using chapter 31 Existing apartment buildings shall be conducted by a design professional.
- 3) A written plan of correction with time lines shall be submitted.

**Comments:**

2/9/2007-amachado: Spoke to David Llyod at Archetype. Need to know exact square footage of addition. Needs to fill out site plan exemption.

2/21/2007-amachado: Received granted site plan exemption (2007-0030) 2/15/07.

2/22/2007-amachado: Received plan showing existing footprint and footprint with addition and the square footage of the increase of the footprint.

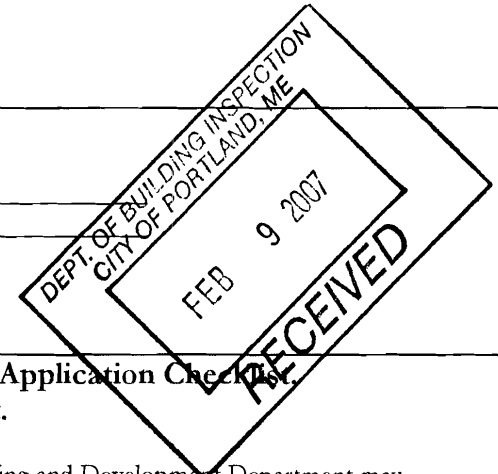
4/4/2007-ldobson: Redesign of combustible elements in a non combustible building MJN



# 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.

Location/Address of Construction: 419-425 Cumberland Avenue		
Total Square Footage of Proposed Structure 255 Sq. Ft.	Square Footage of Lot .231 Acres	
Tax Assessor's Chart, Block & Lot Chart# 36 Block# G Lot# 32	Owner: Michael Burnham MPB Properties PO Box 2282 Scarborough, ME 04070	Telephone:  (207) 885-5111
Lessee/Buyer's Name (If Applicable)	Applicant name, address & telephone:  David Lloyd Archetype, P.A. 48 Union Wharf Portland, ME 04101 (207) 772-6022	Cost Of Work: \$ 150,000  Fee: \$ 1,520  C of O Fee: \$ 75
Current legal use (i.e. single family) <u>Residential - Apartments</u> Total: \$1,595		
If vacant, what was the previous use? _____		
Proposed Specific use: <u>Addition of Elevator</u>		
Is property part of a subdivision? <u>No</u> If yes, please name _____		
Project description: <u>Elevator added to existing apartment building.</u>		
Contractor's name, address & telephone: Jim Keeley - Keeley Construction PO Box 1074 Portland, ME 04104 (207) 773-8499		
Who should we contact when the permit is ready: <u>Jim Keeley</u>		
Mailing address: Keeley Construction PO Box 1074 Portland, ME 04104 Phone: <u>(207) 773-8499</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 or to download copies of this form and other applications visit the Inspections Division on-line at [www.portlandmaine.gov](http://www.portlandmaine.gov), or stop by the Inspections Division 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:

Date:

2-9-07

**This is not a permit; you may not commence ANY work until the permit is issued.**

Applicant: Michael Burnham

Date: 2/9/09

Address: 419 Cumberland Ave.

C-B-L: 31-6-032

permit #: 07-0144

CHECK-LIST AGAINST ZONING ORDINANCE

Date - existing

Zone Location - B3

Interior or corner lot -

Proposed Use/Work - elevator added - footprint increase 195 $\pm$

Sevage Disposal -

Lot Street Frontage -

Front Yard -

Rear Yard - none

Side Yard - none

Projections -

Width of Lot - ~~none~~

Height - can't be less than 35' w/in 55' of street - 55' setback  
max 85'

Lot Area -

Lot Coverage/Impervious Surface -

Area per Family -

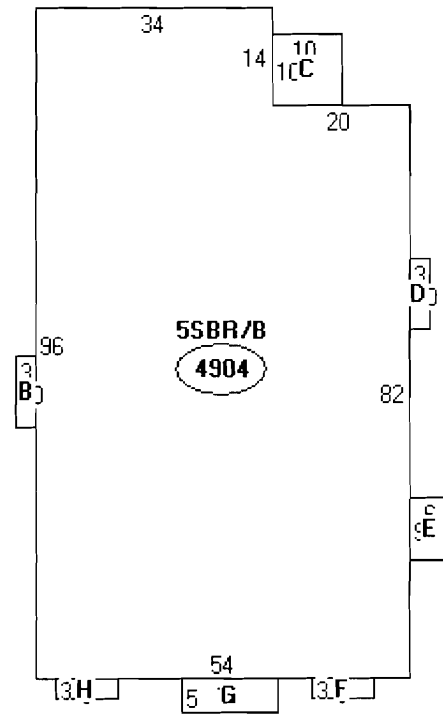
Off-street Parking -

Loading Bays -

Site Plan - exemption 2007-0030

Shoreland Zoning/Stream Protection -

Flood Plains -



Descriptor/Area

A: 5SBR/B  
4904 sqft

B: 5SBRBAY/B  
30 sqft

C: 5SOFP  
100 sqft

D: 5SBRBAY/B  
30 sqft

E: EFP  
54 sqft

F: 5SBRBAY/B  
27 sqft

G: OFP  
70 sqft

H: 5SBRBAY/B  
27 sqft



# Certificate of Design Application

From Designer: Archetype, P.A.  
Date: February 9, 2007  
Job Name: Burnham Towers  
Address of Construction: 419-425 Cumberland Avenue

## 2003 International Building Code

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

Building Code & Year IBC 2003 Use Group Classification (s) R-2  
Type of Construction IB  
Will the Structure have a Fire suppression system in Accordance with Section 903.3.1 of the 2003 IRC No  
Is the Structure mixed use? No If yes, separated or non separated or non separated (section 302.3) \_\_\_\_\_  
Supervisory alarm System? No Geotechnical/Soils report required? (See Section 1802.2) Yes

### Structural Design Calculations

N/A Submitted for all structural members (106.1 – 106.11)

### Design Loads on Construction Documents (1603)

Uniformly distributed floor live loads (7603.11, 1807)

Floor Area Use	Loads Shown
<u>Landings</u>	<u>100 PSF</u>
_____	_____
_____	_____
_____	_____

### Wind loads (1603.1.4, 1609)

1609.1.1 Design option utilized (1609.1.1, 1609.6)  
85 MPH Basic wind speed (1809.3)  
1.0 Building category and wind importance Factor,  $w$   
table 1604.5, 1609.5)  
B Wind exposure category (1609.4)  
+/- 0.18 Internal pressure coefficient (ASCE 7)  
N/A Component and cladding pressures (1609.1.1, 1609.6.2.2)  
15.7 PSF Main force wind pressures (7603.1.1, 1609.6.2.1)

### Earth design data (1603.1.5, 1614-1623)

ASCE-7 Design option utilized (1614.1)  
11 Seismic use group ("Category")  
SDS = 0.375  
SD1 = 0.160 Spectral response coefficients,  $SD_s$  &  $SD_1$  (1615.1)  
D Site class (1615.1.5)

N/A Live load reduction  
N/A Roof *live* loads (1603.1.2, 1607.11)  
PSF Roof snow loads (1603.7.3, 1608)  
60 PSF Ground snow load,  $P_g$  (1608.2)  
46 PSF If  $P_g > 10$  psf, flat-roof snow load  $P_f$   
1.0 If  $P_g > 10$  psf, snow exposure factor,  $C_e$   
1.0 If  $P_g > 10$  psf, snow load importance factor,  $I_s$   
1.0 Roof thermal factor,  $C_t$  (1608.4)  
N/A Sloped roof snowload,  $P_s$  (1608.4)  
C Seismic design category (1616.3)  
1H Basic seismic force resisting system (1617.6.2)  
R=2.0 Response modification coefficient,  $R$  and  
Cd=1.75  
E.L.F deflection amplification factor  $C_d$  (1617.6.2)  
per ASCE-7 Analysis procedure (1616.6, 1617.5)  
22.1k Design base shear (1617.4, 1617.5.1)

### Flood loads (1803.1.6, 1612)

N/A Flood Hazard area (1612.3)  
N/A Elevation of structure

### Other loads

N/A Concentrated loads (1607.4)  
N/A Partition loads (1607.5)  
N/A Misc. loads (Table 1607.8, 1607.6.1, 1607.7,  
1607.12, 1607.13, 1610, 1611, 2404)

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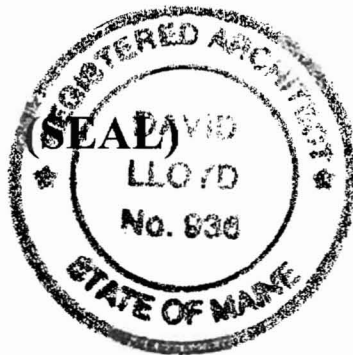
# Accessibility Building Code Certificate


**Designer:** David Lloyd, Archetype, P.A.

**Address of Project:** 419-425 Cumberland Avenue

**Nature of Project:** Elevator added to existing apartment building.

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. Residential Buildings with 4 units or more must conform to the Federal Fair Housing Accessibility Standards. Please provide proof of compliance if applicable.



**Signature:** 

**Title:** Architect

**Firm:** Archetype, P.A.

**Address:** 48 Union Wharf

Portland, ME 04101

**Phone:** (207) 772-6022

For more information or to download this form and other permit applications visit the Inspections Division on our website at [www.portlandmaine.gov](http://www.portlandmaine.gov)





# Certificate of Design

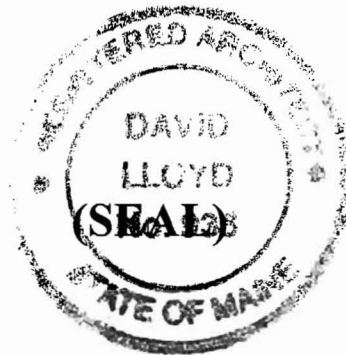
**Date:** February 9, 2007

**From:** Archetype, P.A.

These plans and / or specifications covering construction work on:

419-425 Cumberland Avenue

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: 

Title: Architect

Firm: Archetype, P.A.

Address: 48 Union Wharf

Portland, ME 04101

Phone: (207) 772-6022

**For more information or to download this form and other permit applications visit the Inspections Division on our website at [www.portlandmaine.gov](http://www.portlandmaine.gov)**

# Statement of Special Inspections

Project: *Burnham Towers*

Location: *419 Cumberland Avenue, Portland, ME*

Owner: *MPB Properties, P.O. Box 2282 Scarborough, ME*

Design Professional in Responsible Charge: *David J. Tetreault, P.E.*

This *Statement of Special Inspections* is submitted as a condition for permit issuance in accordance with the Special Inspection and Structural Testing requirements of the Building Code. It includes a schedule of Special Inspection services applicable to this project as well as the name of the Special Inspection Coordinator and the identity of other approved agencies to be retained for conducting these inspections and tests. This *Statement of Special Inspections* encompass the following disciplines:

Structural       Mechanical/Electrical/Plumbing  
 Architectural       Other: \_\_\_\_\_

The Special Inspection Coordinator shall keep records of all inspections and shall furnish inspection reports to the Building Official and the Registered Design Professional in Responsible Charge. Discovered discrepancies shall be brought to the immediate attention of the Contractor for correction. If such discrepancies are not corrected, the discrepancies shall be brought to the attention of the Building Official and the Registered Design Professional in Responsible Charge. The Special Inspection program does not relieve the Contractor of his or her responsibilities.

Interim reports shall be submitted to the Building Official and the Registered Design Professional in Responsible Charge.

A *Final Report of Special Inspections* documenting completion of all required Special Inspections, testing and correction of any discrepancies noted in the inspections shall be submitted prior to issuance of a Certificate of Use and Occupancy.

Job site safety and means and methods of construction are solely the responsibility of the Contractor.

Interim Report Frequency: *As required*

or  per attached schedule.

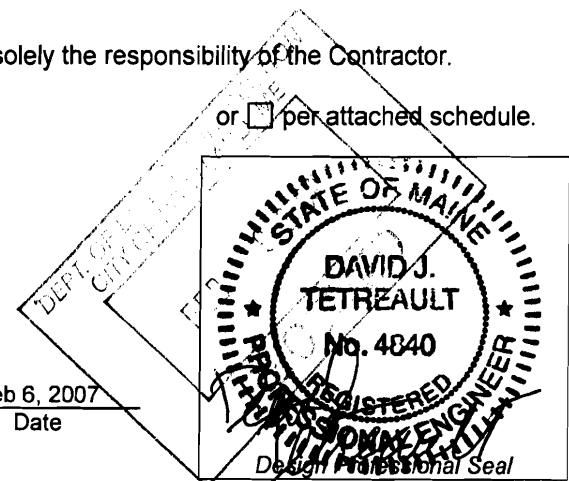
Prepared by:

*David J. Tetreault, P.E.*

(type or print name)

Signature

Feb 6, 2007  
Date



Owner's Authorization:

Building Official's Acceptance:

Signature

Date

Signature

Date

36632

## Schedule of Inspection and Testing Agencies

This Statement of Special Inspections / Quality Assurance Plan includes the following building systems:

- |   |  |
|---|--|
| <input checked="" type="checkbox"/> Soils and Foundations<br><input checked="" type="checkbox"/> Cast-in-Place Concrete<br><input type="checkbox"/> Precast Concrete<br><input checked="" type="checkbox"/> Masonry<br><input checked="" type="checkbox"/> Structural Steel<br><input type="checkbox"/> Cold-Formed Steel Framing | <input type="checkbox"/> Spray Fire Resistant Material<br><input type="checkbox"/> Wood Construction<br><input type="checkbox"/> Exterior Insulation and Finish System<br><input type="checkbox"/> Mechanical & Electrical Systems<br><input type="checkbox"/> Architectural Systems<br><input type="checkbox"/> Special Cases |
|---|--|

Special Inspection Agencies	Firm	Address, Telephone
1. <b>Special Inspection Coordinator</b>	<i>David J. Tetreault, P.E. Structural Design Consulting, Inc.</i>	<i>22 Oakmont Drive Old Orchard Beach, ME 04064 207-934-8038</i>
2. <b>Inspector</b>	<i>Sebago Technics</i>	<i>One Chabot Street P.O. Box 1339 Westbrook, ME 04098-1339 (207) 856-0277</i>
3. <b>Testing Agency</b>	<i>S.W Cole Engineering, Inc</i>	<i>286 Portland Road Gray, ME 04039 207 657-2866</i>
4.		
5.		
6.		

Note: The inspectors and testing agencies shall be engaged by the Owner or the Owner's Agent, and not by the Contractor or Subcontractor whose work is to be inspected or tested. Any conflict of interest must be disclosed to the Building Official, prior to commencing work.

## Quality Assurance Plan

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### Quality Assurance for Seismic Resistance

Seismic Design Category	C
Quality Assurance Plan Required (Y/N)	Y

Description of seismic force resisting system and designated seismic systems:

*The seismic force resisting system consists of ordinary reinforced masonry shearwalls as shown on Sheet S1. IBC/2003 Table 1617.6.2 Type 1F.*

*1705.1.1 Q/A plan is required for the seismic force resisting system. Q/A plan consists of Special Inspections of Reinforced Concrete, Reinforced Masonry and, Steel Deck.*

*1705.1.2 refers to SDC D, E and F therefore Q/A plan not required*

*1705.1.3 refers to hazardous materials in ducts and piping and to emergency standby power. None present therefore Q/A plan not required.*

*1705.1.4 refers to SDC D therefore Q/A plan not required.*

*1705.1.5 refers to SDC E and F therefore Q/A plan not required*

### Quality Assurance for Wind Requirements

Basic Wind Speed (3 second gust)	100 mph
Wind Exposure Category	C
Quality Assurance Plan Required (Y/N)	N

*The building is in wind exposure Category C with a 3-sec gust basic wind speed less than 110 mph therefore a quality assurance plan for wind is not required (IBC/2003 Section 1706.1.1.2).*

### Statement of Responsibility

Each contractor responsible for the construction or fabrication of a system or component designated above must submit a Statement of Responsibility.

## **Qualifications of Inspectors and Testing Technicians**

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The qualifications of all personnel performing Special Inspection and testing activities are subject to the approval of the Building Official. The credentials of all Inspectors and testing technicians shall be provided if requested.

### **Key for Minimum Qualifications of Inspection Agents:**

When the Registered Design Professional in Responsible Charge deems it appropriate that the individual performing a stipulated test or inspection have a specific certification or license as indicated below, such designation shall appear below the *Agency Number* on the Schedule.

PE/SE	Structural Engineer – a licensed SE or PE specializing in the design of building structures
PE/GE	Geotechnical Engineer – a licensed PE specializing in soil mechanics and foundations
EIT	Engineer-In-Training – a graduate engineer who has passed the Fundamentals of Engineering examination

### **American Concrete Institute (ACI) Certification**

ACI-CFTT	Concrete Field Testing Technician – Grade 1
ACI-CCI	Concrete Construction Inspector
ACI-LTT	Laboratory Testing Technician – Grade 1&2
ACI-STT	Strength Testing Technician

### **American Welding Society (AWS) Certification**

AWS-CWI	Certified Welding Inspector
AWS/AISC-SSI	Certified Structural Steel Inspector

### **American Society of Non-Destructive Testing (ASNT) Certification**

ASNT	Non-Destructive Testing Technician – Level II or III.
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### **International Code Council (ICC) Certification**

ICC-SMSI	Structural Masonry Special Inspector
ICC-SWSI	Structural Steel and Welding Special Inspector
ICC-SFSI	Spray-Applied Fireproofing Special Inspector
ICC-PCSI	Prestressed Concrete Special Inspector
ICC-RCSI	Reinforced Concrete Special Inspector

### **National Institute for Certification in Engineering Technologies (NICET)**

NICET-CT	Concrete Technician – Levels I, II, III & IV
NICET-ST	Soils Technician - Levels I, II, III & IV
NICET-GET	Geotechnical Engineering Technician - Levels I, II, III & IV

### **Exterior Design Institute (EDI) Certification**

EDI-EIFS	EIFS Third Party Inspector
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### **Other**

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## Soils and Foundations

Item	Req'd Y/N	Agency #	Scope
1. Shallow Foundations	Y	2	<p><i>Inspect soils below footings for adequate bearing capacity and consistency with geotechnical report.</i></p> <p><i>Inspect removal of unsuitable material and preparation of subgrade prior to placement of controlled fill</i></p>
2. Controlled Structural Fill	N		
3. Deep Foundations	N		
4. Load Testing	N		
4. Other	N		

## Cast-in-Place Concrete

Item	Req'd Y/N	Agency #	Scope
1. Mix Design	Y	1	Review concrete batch tickets and verify compliance with approved mix design. Verify that water added at the site does not exceed that allowed by the mix design.
2. Material Certification	Y	1	Review certified mill test reports for reinforcing steel
3. Reinforcement Installation	Y	3	Inspect size, spacing, cover, positioning and grade of reinforcing steel. Verify that reinforcing bars are free of form oil or other deleterious materials. Inspect bar laps and mechanical splices. Verify that bars are adequately tied and supported on chairs or bolsters
4. Post-Tensioning Operations	N		
5. Welding of Reinforcing	N		
6. Anchor Rods	N		
7. Concrete Placement	Y	3	Inspect placement of concrete. Verify that concrete conveyance and depositing avoids segregation or contamination. Verify that concrete is properly consolidated.
8. Sampling and Testing of Concrete	Y		Test concrete compressive strength (ASTM C31 & C39), slump (ASTM C143), air-content (ASTM C231 or C173) and temperature (ASTM C1064).
9. Curing and Protection	Y	3	Inspect curing, cold weather protection and hot weather protection procedures.
10. Other	N		

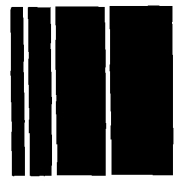
## Masonry

Item	Req'd Y/N	Agency #	Scope
1. Material Certification	Y	1	Review certified mill test reports for reinforcing steel
2. Mixing of Mortar and Grout	Y	3	Inspect proportioning, mixing and retempering of mortar and grout.
3. Installation of Masonry	Y	3	Inspect size, layout, bonding and placement of masonry units.
4. Mortar Joints	Y	3	Inspect construction of mortar joints including tooling and filling of head joints.
5. Reinforcement Installation	Y	3	Inspect placement, positioning and lapping of reinforcing steel.
6. Prestressed Masonry	N		
7. Grouting Operations	Y	3	Inspect placement and consolidation of grout. Inspect masonry clean-outs for high-lift grouting.
7. Weather Protection	Y	3	Inspect cold weather protection and hot weather protection procedures. Verify that wall cavities are protected against precipitation.
9. Evaluation of Masonry Strength	Y	3	Test compressive strength of mortar and grout cube samples (ASTM C780). Test compressive strength of masonry prisms (ASTM C1314).
10. Anchors and Ties	N		
11. Other:	N		



## Structural Steel

Item	Req'd Y/N	Agency # (Qualif.)	Scope
1. Fabricator Certification/ Quality Control Procedures <input type="checkbox"/> Fabricator Exempt	N		
2. Material Certification	N		
3. Open Web Steel Joists	N		
4. Bolting	N		
5. Welding	N		
6. Shear Connectors	N	N	
7. Structural Details	Y	1	<i>Inspect deck details for compliance with structural drawings, including connection details.</i>
8. Metal Deck	Y	3	<i>Inspect welding and side-lap fastening of metal roof and floor deck.</i>
9. Other:	N		



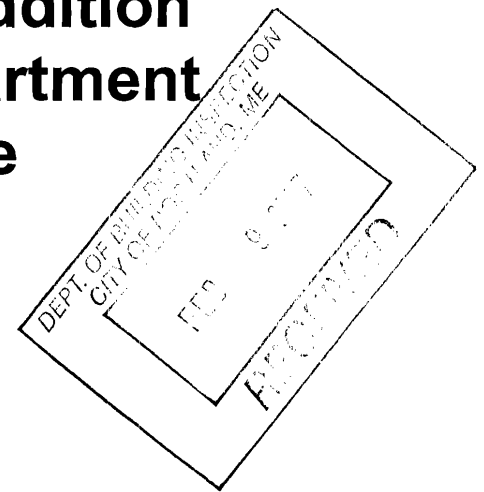
# Report on Subsurface and Foundation Investigation

## Proposed Elevator Addition Burnham Towers Apartment Portland, Maine

for

Archetype, P.A.  
48 Union Wharf  
Portland, ME 04101

January 23, 2007



36632



January 23, 2007  
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Mr. David Lloyd  
Archetype, P.A.  
48 Union Wharf  
Portland, ME 04101

**Report on Subsurface and Foundation Investigation**  
**Proposed Elevator Addition, Burnham Towers Apartments, Portland, Maine**

Dear David:

This report presents the results of our subsurface and foundation investigation for the proposed Elevator Addition to the Burnham Towers Apartments at 419 Cumberland Avenue in Portland, Maine.

In summary, it is our opinion that the addition can be supported on conventional spread footings bearing on undisturbed, naturally deposited soil or on compacted structural fill placed after removal of unsuitable materials. In addition, an earth-supported slab on grade may be used for lobby ground floor. Specific recommendations for foundation design and construction are presented below.

**Introduction**

The Burnham Towers Apartments are located on the north side of Cumberland Avenue between Forest Avenue and High Street. The existing building is a four-story building with basement. The proposed elevator will operate between the basement and fourth floor.

**Subsurface Explorations**

On December 20, 2006, Keeley Construction (KC) excavated one test pit, TP1, at the proposed elevator location at the rear of the building. KC excavated the test pit to a depth below ground surface of 8.5 feet using a rubber tired backhoe. Sebago Technics, Inc. monitored the test pit and prepared the log included in Appendix A. KC backfilled the test pit with the excavated material.

The test pit log and related information depict subsurface conditions and water levels at that specific location at the time of excavation. Soil conditions at other locations may differ from conditions at this location. Also, the passage of time may result in a change in groundwater conditions at the exploration locations.

### **Subsurface Conditions**

The test pit encountered 0.2 foot of bituminous concrete overlying 4.0 feet of sand fill overlying 1.3 feet of poorly-graded sand and more than 3.0 feet of silty sand with gravel (glacial till).

Water was not observed in the test pits at completion of excavation. However, observation for water was made over a relatively short period of time and may not represent the stabilized groundwater level. In addition, groundwater levels at the site will vary with season, precipitation, temperature and construction activity in the area. Therefore, water level during and following construction may vary from that observed in the test pits.

### **Recommendations for Foundation Design**

#### **Recommended Foundation Type and Design Criteria**

The bituminous concrete and fill encountered in the test pit is not suitable for support of the elevator addition. We recommend that the addition may be supported on the undisturbed, naturally deposited sand or on compacted structural fill or crushed stone placed after removal of the fill and bituminous concrete.

Footings may be proportioned for an allowable bearing stress equal to 1,000 pounds per square foot (psf) multiplied by the least lateral dimension of the footing in feet up to a maximum of 3,000 psf. All footings should be at least 1.5 feet wide. The bearing level of footings immediately adjacent to the basement of the Burnham Towers should not bear below the envelope defined by a 1 horizontal to 2 vertical line drawn downward and outward from the bottom edge of the existing footing to minimize undermining the existing footing.

Exterior footings should be founded at least 4.5 feet below the lowest adjacent ground surface exposed to freezing.

Compacted structural fill or crushed stone should extend laterally from the footings to at least the limits defined by 1 horizontal to 1 vertical lines sloped outward and downward from points located 2 feet horizontally beyond the bottom edges of the footings.

Based on the subsurface conditions and expected loading, we anticipate that settlement of the foundations will be less than  $\frac{3}{4}$  inch. We anticipate that settlement of this magnitude is acceptable. However, Structural Design Consultants should determine final acceptability of settlement.

#### **Seismic Design Considerations**

We recommend that the addition be designed in accordance with the seismic requirements of the latest edition of the International Building Code. The site classification is Class D; the site response coefficient  $F_a$  is 1.5 for the short period spectral response acceleration  $S_s$  of 0.375g; the site response coefficient  $F_v$  is 2.4 for the 1-second period spectral response acceleration  $S_1$  of 0.10g. The subgrade soils are not considered liquefaction susceptible.

### Lateral Foundation Loads

We recommend that lateral loads be resisted by bottom friction on footings. We recommend that a coefficient of friction equal to 0.40 be used for footings.

### Lateral Soil Pressure

We anticipate that the foundation walls of the elevator addition will extend below the ground floor and will be braced at the top. We recommend that the walls be designed to resist a lateral earth pressure calculated on the basis of an equivalent fluid unit weight of 55 lbs. per cubic foot. In addition, if the walls will be subjected to surcharge due to future floor load, the wall should be designed for a uniform lateral pressure acting over the full height of wall calculated on the basis of 0.5 times the surcharge stress, in addition to the lateral soil pressure recommended above.

### Backfill Materials

Structural fill used for backfill adjacent to the addition walls and below footings and floor slab should consist of sandy gravel to gravelly sand. It should be free of organic material, loam, trash, snow, ice, frozen soil and other objectionable material, and should conform to the following gradation:

<u>Sieve Size</u>	<u>Percent Finer by Weight</u>
3 in.	100
No. 4	30 to 90
No. 40	10 to 50
No. 200	0 to 8

Compacted structural fill should be placed in layers not exceeding 6 inches in loose measure and compacted by hand-guided vibratory equipment at the approximate optimum moisture content to a dry density of at least 95 percent of the maximum dry density, as determined in accordance with ASTM Test Designation D1557.

Crushed stone, if used, should consist of ¾-inch sound, durable crushed stone. It should be placed in layers not exceeding 8 inches in loose measure and compacted by hand-guided vibratory equipment with a minimum of four passes.

Compacted structural fill on the outside of the walls should extend laterally a minimum of 2 feet from the wall. Backfill beyond this limit, up to the ground surface, may consist of common fill. Grading should provide for runoff away from the addition.

### Construction Considerations

#### General

The primary purpose of this section of the report is to comment on items related to excavation, earthwork and related geotechnical aspects of proposed construction. It is written primarily for the engineer having responsibility for preparation of plans and specifications. Since it identifies potential construction problems related to foundations and earthwork, it will also aid personnel who monitor the construction activity.

### Excavation, Lateral Support and Control of Water

We anticipate that foundation excavation can be accomplished with sloped open excavation through the overburden soils and fill, provided safe side slopes can be maintained. Some sloughing and raveling should be anticipated in temporary slopes. Temporary excavations should be made in accordance with all OSHA and other applicable regulatory agency requirements.

We anticipate that groundwater may be encountered during excavation for footings. If encountered, open pumping from sumps can likely control groundwater. In general, the contractor should complete excavation and control groundwater and water from other sources by methods that prevent disturbance of the bearing soils and allow construction in-the-dry. Sumps and pumps should be designed with proper filters to prevent loss of fine-grained soil.

### Subgrade Preparation

The subgrade soil is susceptible to disturbance from construction traffic. Equipment and personnel should not be permitted to travel across exposed footing bearing surfaces. Any subgrade areas that are disturbed should be excavated and replaced with compacted structural fill prior to placing of concrete or recompacted. Subgrades should be protected against freezing temperatures if exposed during construction. Final excavation to subgrade should be performed using equipment with smooth-edge buckets.

We recommend that all aspects of earthwork and foundation construction be monitored by personnel qualified by training and experience.

### Limitations of Recommendations

This report has been prepared for specific application to the subject project in accordance with generally accepted geotechnical engineering practices. In the event that any changes in the nature, design or location of the addition are planned, the conclusions and recommendations contained in this report should not be considered valid, unless the changes are reviewed and the conclusions of this report modified or verified in writing.

The recommendations presented herein are based in part on the data obtained from the referenced test pit. The nature and extent of variations from the test pits may not become evident until construction. If variations then appear evident, it will be necessary to re-evaluate the recommendations of this report.

We request that we be provided the opportunity for a general review of final design and specifications in order to determine that our earthwork and foundation recommendations have been interpreted and implemented in the design and specifications as they were intended.

Mr. Lloyd

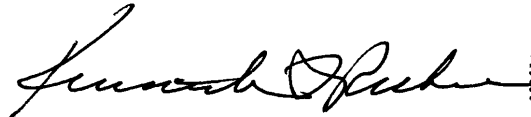
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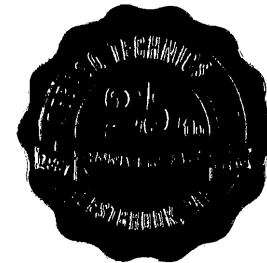
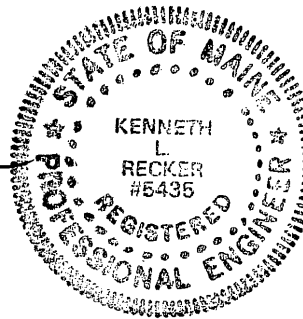
It has been a pleasure to work with you on this project. Please do not hesitate to contact us if you have any questions or require additional information.

Sincerely,

SEBAGO TECHNICS, INC.



Kenneth L. Recker, P.E.  
Geotechnical Engineering Manager



KLR:klr/jc

Enclosures:

Appendix A - Log of Test Pit

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# Appendix A

## Log of Test Pit







# APPLICATION FOR EXEMPTION FROM SITE PLAN REVIEW

2007-0030

Michael Brennan  
Applicant

2-12-07  
Application Date

P.O. Box 2012 3000 NE Oregon St.  
Applicant's Mailing Address

Plumtree Lane NW  
Project Name/Description

360-778-0000  
Consultant/Agent/Phone Number

411 NW Commercial St NW  
Address of Proposed Site

CBL: See G-22

## Description of Proposed Development:

Addition to existing building for office use  
proposed building

## Please Attach Sketch/Plan of Proposal/Development

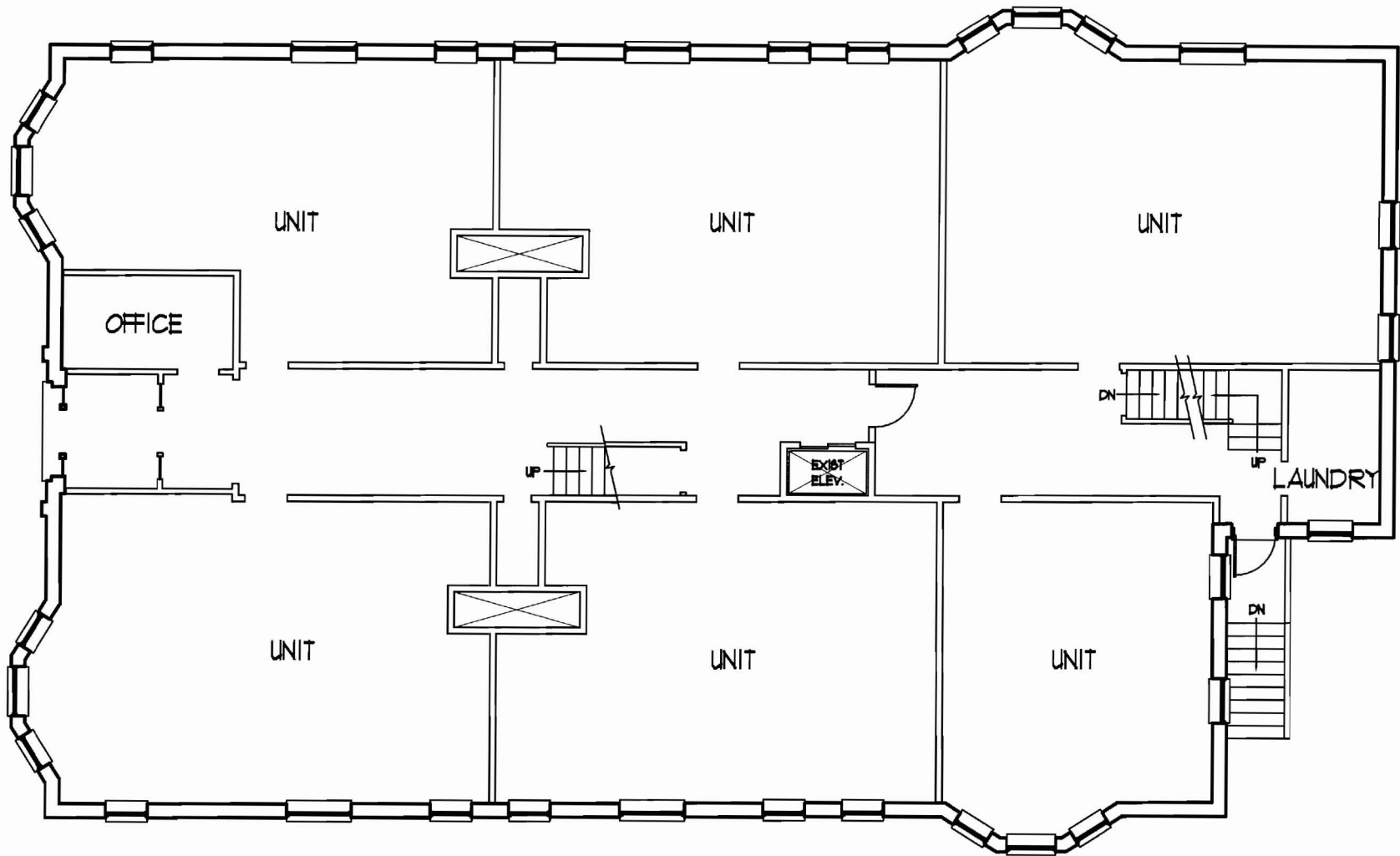
Criteria for Exemptions:  
**See Section 14-523 (4) on back side of form**

- a) Within Existing Structures; No New Buildings, Demolitions or Additions
- b) Footprint Increase Less Than 500 Sq. Ft.
- c) No New Curb Cuts, Driveways, Parking Areas
- d) Curbs and Sidewalks in Sound Condition/Comply with ADA
- e) No Additional Parking/ No Traffic Increase
- f) No Stormwater Problems
- g) Sufficient Property Screening
- h) Adequate Utilities

Applicant's Assessment  
(Yes, No, N/A)

Planning Office  
Use Only

Planning Division Use Only



EXISTING FOOTPRINT = 5250 SQ. FT.

DEPT. OF BUILDING INSPECTION  
CITY OF PORTLAND, ME

FEB 26 2007

RECEIVED

