

DISPLAY THIS CARD ON PRINCIPAL FRONTAGE OF WORK

# CITY OF PORTLAND

## BUILDING INSPECTION

# PERMIT

Application And Notes, if Any, Attached

Permit Number: 215 B002001

**PERMIT ISSUED**

SEP 13 2005

CITY OF PORTLAND

That UNUM CORP /Shaw Brothers

has permission to Emergency Generator Pad

provided that the person or persons who perform or supervise the construction of this work in accepting this permit shall comply with all of the provisions of the Statutes of the State of Oregon 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 occupied or otherwise closed-in. 4 HOUR NOTICE REQUIRED.

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

### OTHER REQUIRED APPROVALS

- Fire Dept. \_\_\_\_\_
- 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: 05-1311	Issue Date: SEP 13 2005	PERMIT ISSUED 215 B002001
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<b>Location of Construction:</b> 2211 CONGRESS ST	<b>Owner Name:</b> UNUM CORP	<b>Owner Address:</b> 2211 CONGRESS ST
<b>Business Name:</b>	<b>Contractor Name:</b> Shaw Brothers	<b>Contractor Address:</b> 511 Main St / PO Box 69 City Hall Portland ME 04102-2552
<b>Lessee/Buyer's Name</b>	<b>Phone:</b>	<b>Permit Type:</b> Alterations - Commercial

<b>Past Use:</b> Commercial/ UNUM	<b>Proposed Use:</b> UNUM - Emergency Generator Pad	<b>Permit Fee:</b> \$363.00	<b>Cost of Work:</b> \$38,000.00	<b>CEO District:</b> 3
<b>Proposed Project Description:</b> Emergency Generator Pad		<b>FIRE DEPT:</b> <input type="checkbox"/> Approved <input type="checkbox"/> Denied	<b>INSPECTION</b> Use Group: Type: 9/12/05 PAO Signature: [Signature]	
		<b>Action:</b> <input type="checkbox"/> Approved <input type="checkbox"/> Approved w/Conditions <input type="checkbox"/> Denied	Signature: Date:	

<b>Permit Taken By:</b> Idobson	<b>Date Applied For:</b> 09/06/2005	<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 type="checkbox"/> Site Plan Maj <input type="checkbox"/> Minor <input type="checkbox"/> MM <input type="checkbox"/> Denied Date: 9/19/05	<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 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
------------------------	---------	------	-------

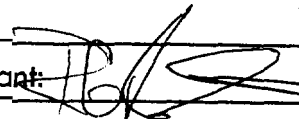
RESPONSIBLE PERSON IN CHARGE OF WORK, TITLE	DATE	PHONE
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# All Purpose Building Permit Application

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: <u>221 CONGRESS STREET PORTLAND</u>		
Total Square Footage of Proposed Structure <u>CONCRETE PAD 40' x 100'</u>	Square Footage of Lot	
Tax Assessor's Chart, Block & Lot Chart# <u>215</u> Block# <u>B</u> Lot# <u>002</u>	Owner: <u>UNUMPROVIDENT</u>	Telephone: <u>575-5200</u>
Lessee/Buyer's Name (if Applicable)	Applicant name, address & telephone: <u>BOB ADAMS</u> <u>575 5155</u>	Cost Of Work: <u>\$38,000</u> Fee: \$ <u>363</u>
Current use: <u>WOODS</u>	<div style="border: 2px solid black; padding: 5px; text-align: center;"> <p>DEPT. OF BUILDING INSPECTION CITY OF PORTLAND, ME</p> <p>SEP - 6 2005</p> <p><b>RECEIVED</b></p> </div>	
If the location is currently vacant, what was prior use: _____		
Approximately how long has it been vacant: _____		
Proposed use: <u>EMERGENCY GENERATOR PAD</u> Project description:		
Contractor's name, address & telephone: <u>STAW BROS.</u>		
Who should we contact when the permit is ready: <u>BOB ADAMS 575 5155</u>		
Mailing address: <u>221 CONGRESS ST</u> <u>PORTLAND, ME 04122</u>		
We will contact you by phone when the permit is ready. You must come in and pick up the permit and review the requirements before starting any work, with a Plan Reviewer. A stop work order will be issued and a \$100.00 fee if any work starts before the permit is picked up. PHONE: _____		

IF THE REQUIRED INFORMATION IS NOT INCLUDED IN THE SUBMISSIONS THE PERMIT WILL BE AUTOMATICALLY DENIED AT THE DISCRETION OF THE BUILDING/PLANNING DEPARTMENT, WE MAY REQUIRE ADDITIONAL INFORMATION IN ORDER TO APPROVE THIS PERMIT.

Signature of applicant: 	Date: <u>9/2/05</u>
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**This is NOT a permit, you may not commence ANY work until the permit is issued.**  
If you are in a Historic District you may be subject to additional permitting and fees with the Planning Department on the 4<sup>th</sup> floor of City Hall

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

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

<b>Permit No:</b> 05-13 11	<b>Date Applied For:</b> 09/06/2005	<b>CBL:</b> 215 B002001
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<b>Location of Construction:</b> 2211 CONGRESS ST	<b>Owner Name:</b> UNUM CORP	<b>Owner Address:</b> 2211 CONGRESS ST	<b>Phone:</b>
<b>Business Name:</b>	<b>Contractor Name:</b> Shaw Brothers	<b>Contractor Address:</b> 511 Main St / PO Box 69 Gorham	<b>Phone</b> (207) 839-2552
<b>Lessee/Buyer's Name</b>	<b>Phone:</b>	<b>Permit Type:</b> Miscellaneous	
<b>Proposed Use:</b> UNUM - Emergency Generator Pad		<b>Proposed Project Description:</b> Emergency Generator Pad	

**Dept:** Building**Status:** Approved**Reviewer:** Mike Nugent**Approval Date:** 09/12/2005**Note:****Ok to Issue:**



**PRITCHARD  
BROWN, LLC**

STATE OF THE ART SHELTERS AND SYSTEM INTEGRATION

August 10, 2005

Milton Cat Power Systems  
16 Pleasant Hill Rd  
Scarborough, Maine 04070  
Attn: Mr. Mike Gilbert

Subject: UNUM Sound Study

Mike,

The proposed generator enclosures are designed to reduce the source noise by an average of **25 dB(A)** at 1 meter. With the Caterpillar model 3516B's known source noise level of **112 dB(A)**, the estimated resultant noise level at 100' is 70 dB(A). At 200', the estimated resultant noise level is 64 dB(A). These values are based upon free field conditions and are the expected empirical results of the inverse-square law. (The inverse square law is often applied as a "rule-of-thumb" to determine the effects of distance on sound level. The inverse-square law simply predicts that for a point-source of sound under free field conditions the sound level will decrease by 6 dB each time the distance from the source is doubled.) Site obstructions such as natural vegetation often reduce this value further.

We have thoroughly reviewed the photographs and drawings depicting the UNUM campus and proposed generator pad location. Here are our observations:

- The pad location is well away from any buildings or other large reflective surfaces, causing the attenuation in the direction of the property line at Congress Street to adhere to the inverse-square law.
- The vegetation appears to be mature, and a mix of both deciduous and evergreen trees. These trees will have both barrier and absorptive properties, especially for the higher-frequency sound.

Based on these observations, the resultant sound level measured at the Congress Street property line with both units operating at full load will be less than the free field condition levels. In our experience, it is expected that the wooded area will provide an additional **4-5 dB(A)** reduction. The fact that the generator set system has been designed to run at an average load factor of less than 80% will lower the source noise by at least 2 dB(A); therefore, it is our professional opinion that these additional site-specific factors will result in a property line sound level of under 60 dB(A).

We hope this information has been helpful, and please advise if you require anything further.

Best regards,

Mike Witkowski  
Vice President of Engineering  
Pritchard Brown, LLC

75  
- 55  
-----  
20'

City of Portland, Maine  
code of Ordinances, revised 10/01/2000  
Sec. 14-230.14. Dimensional requirements,

Land Use  
Chapter 14

? Something incident to a child or principal thing  
Appendage

appurtenances, if each of the required minimum yard-  
dimensions is increased by one (1) foot in distance for  
each one (1) foot of height above fifty-five (55) feet.

(Ord. No. 297-88, 5-23-88; Ord. No. 223-92, 1-22-92)

**Sec. 14-230.15. Other requirements.**

[In addition to the above, the following requirements are  
applicable to all uses in the O-P zone:]

- (1) *Off-street parking and loading:* Off-street parking and loading are required as provided in division 20 (off-street parking) and division 21 (off-street loading).
- (2) *Signs:* Signs shall be subject to the provisions of division 22 of this article. Temporary freestanding advertising signs are not permitted.
- (3) *Curbs and sidewalks:* Curbs and sidewalks as specified in article VI of chapter 25.
- (4) *Shoreland and flood plain management regulations:* If the lot is located in a shoreland zone or in a flood hazard zone, the requirements of division 26 and/or division 26.5 apply.

(Ord. No. 297-88, 5-23-88)

**Sec. 14-230.16. External effects.**

Every use in a O-P zone, unless expressly exempted, shall be subject to the following limitations:

- (1) *Enclosed structure:* The use shall be operated within a completely enclosed structure, except for those customarily operated in the open air.
- (2) *Noise:* The volume of sound, measured by a sound level meter with frequency weighting network (manufactured according to standards prescribed by the American Standards Association), generated shall not exceed sixty

(60) decibels on the A scale, on impulse (less than one (1) second), at lot boundaries, excepting air raid sirens and similar warning devices.

- (3) *Vibration*: Vibration inherently and recurrently generated shall be imperceptible without instruments at lot boundaries.
- (4) *Heat, glare, radiation or fumes*: Heat, glare, radiation or fumes shall not be emitted to an obnoxious or dangerous degree beyond lot boundaries.
- (5) *Smoke*: Smoke shall not be emitted at a density in excess of twenty (20) percent opacity level as classified in Method 9 (Visible Emissions) of the Opacity Evaluation System of the U.S. Environmental Protection Agency.
- (6) *Materials or wastes*: No materials or wastes shall be deposited on any lot in such form or manner that they may be transferred beyond the lot boundaries by natural causes or forces. All material which might cause fumes or dust, or constitute a fire hazard if stored out-of-doors, shall be only in enclosed containers. Areas attracting large numbers of birds, rodents or insects are prohibited.

(Ord. No. 297-88, 5-23-88)

DIVISION 13. I-L AND I-Lb INDUSTRIAL ZONES\*

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\*Editor's note--Ord. No. 164-97, § 6, passed Jan. 6, 1997, repealed div. 13, §§ 14-231--14-236 of this article and enacted new provisions as herein set out. Formerly, such division pertained to the I-1 industrial zone and derived from §§ 602.11.A--602.11.F of the 1968 Code as amended by the following legislation:



DeLUCA-HOFFMAN ASSOCIATES, INC.  
CONSULTING ENGINEERS

778 MAIN STREET  
SUITE 8  
SOUTH PORTLAND, MAINE 04106  
TEL. 207 775 1121  
FAX 207 879 0896

- SITE PLANNING AND DESIGN
- ROADWAY DESIGN
- ENVIRONMENTAL ENGINEERING
- PERMITTING
- AIRPORT ENGINEERING
- CONSTRUCTION ADMINISTRATION
- TRAFFIC STUDIES AND MANAGEMENT

June 29, 2005

*slides spoke to  
Dwight Anderson  
775-1121*

Mr. Bob Green  
Maine Department of Environmental Protection  
Division of Land Resources  
312 Canco Road  
Portland, ME 04103

**Subject: UNUM Provident Emergency Generator Pad  
Application for Project Modification**

Dear Bob:

On behalf of Unum Provident, DeLuca-Hoffman Associates, Inc. is pleased to submit to you the original and two (2) copies of the MeDEP Application for Project Modification for a change to the proposed emergency generators at the Unum Provident complex on Congress Street, Portland, Maine.

Included in this submission is a figure which illustrates the estimated source noise produced by the generators at various distances from the concrete pad on which the emergency generators will be located. A check in the amount of \$115.00 payable to the Treasurer, State of Maine is also attached to this letter,

The following table highlights the source noise based on free field conditions provided by Milton CAT and Pritchard Brown LLC:

Distance from Generator (ft)	Source Noise (dB(A))
25	a2
50	76
100	70

The source email of this information is attached

Additional Points which will help reduce and limit the impacts of the noise produced by the generators:

- There are additional platings proposed in this area
- The proposed generators are intended for emergency use only
- The actual conditions surrounding the generators are not "free field". This will likely reduce the noise impacts associated with the generators.



**DeLUCA HOFFMAN ASSOCIATES, INC.  
CONSULTING ENGINEERS**

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Mr. Bob Green  
June 29, 2005  
Page 2

If you have any questions regarding this letter, please contact our office.

Sincerely,

DeLUCA-HOFFMAN ASSOCIATES, INC.



Dwight D. Anderson, P.E.  
Senior Engineer

DDA/rjw/JN2445.01/Green6-29-05

c: Nick Najafinia, UNUM Provident

Enclosures: Check in the amount of \$115.00  
Application for Project Modification  
Noise Levels Figure  
Email from Pritchard Brown LLC

#L- \_\_\_\_\_  
Fees Paid \_\_\_\_\_  
Date Received \_\_\_\_\_

**APPLICATION FOR PROJECT MODIFICATION**  
For Site Location and N.R.P.A. Projects

This form shall be used to request approval of minor changes to: (a) project design or operation; or (b) the conditions of a permit as previously approved by the Board or Department of Environmental Protection.

**Please** contact the DEP for current fee schedule information. **Fees are** payable to the Treasurer, State of Maine and is required at the time of application submittal. Depending on the degree of review required, additional fees may be assessed. The Department **will** bill you if additional fees are needed.

If significant changes **are** proposed, then a **complete** new or amendment application may be required by **the** Department.

(Please type or print)

Name of Applicant: UNUM Provident (Attn: Nick Najafinia)

Address: 2211 Congress Street, Portland, Maine 04101

Telephone Number: (207) 575-5200

Name of Contact or Agent: Dwight D. Anderson, P.E., DeLuca Hoffman Associates, Inc.

Telephone/E-mail address: (207) 775-1121 dandersonddelucahoffman.com

**TION OF          RY**

Name of Project: Emergency Generator Pad

Municipality or Township: Portland County: Cumberland

UTM Northing (if known): 4834070.04 UTM Easting (if known): 393055.25 (meters)

GPS Coordinates (if known) Latitude: 43°-39'-07" Longitude 70°-19'-33"

**REQUIRED INFORMATION**

1. Existing DEP permit number: L-18486-26

2. DEP Project Manager for previous application (if known): Bob Green, Bill Bullard, and Linda Kokemuller

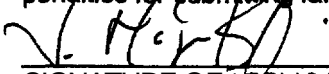
3. Description of Proposed Change: Originally the generators approved for the UNUM Generator Pad project were XQ2000 Sound Attenuated Power Modules. The proposed modification is to switch to the model specified in the attached email which will set directly on the concrete pad (i.e. not on tires) and win

generate **76 dBA** at **50 feet**. A **6 dBA** increase over what was previously proposed. The newly **proposed** enclosures are much more aesthetically pleasing than the previously proposed units. They are fabricated of **pre-painted** aluminum panels and are much more streamlined than the other units. A **figure showing adjacent properties and noise levels at various distances is attached to this modification.**

4. Provide all documentation necessary to support the proposed change. This documentation shall include, as appropriate, revised site plans, construction drawings and technical data. (If you are unsure of what information to include, please contact the original DEP project manager, or the Division of Land Resource Regulation for assistance.)
5. If new applicant is a registered corporation, provide either a *Certificate of Good Standing* (available from the Secretary of State) or a statement signed by a corporate officer affirming that the corporation is in good standing.

Bureau of Land and Water Quality 17 State House Station Augusta, ME <b>04333</b> Tel: <b>(207) 287-2111</b>	Bureau of Land and Water Quality <b>312 Canco Road</b> Portland, ME 04103 Tel: <b>(207) 822-6300</b>	Bureau of Land and Water Quality <b>106 Hogan Road</b> Bangor, <b>ME 04401</b> <b>(207) 941-4570</b>
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"I certify under penalty of law that I have personally examined the information submitted in this document and all attachments thereto and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the information is true, accurate, and complete. I authorize the Department to enter the property that is the subject of this application, at reasonable hours, including buildings, structures or conveyances on the property, to determine the accuracy of any information provided herein. I am aware there are significant penalties for submitting false information, including the possibility of fine and imprisonment"

 DATE: June 28, 2005

SIGNATURE OF APPLICANT

Nick Hoffine

PRINT OR TYPED NAME

Dir. of Facilities Operations

TITLE

**THE APPLICATION FEE IS DUE AT THE TIME OF APPLICATION SUBMITTAL. THE APPLICATION WILL NOT BE PROCESSED UNTIL THIS FEE IS PAID.**

**Rob Woodman**

---

**From:** NajaFinia, Nick [NNajafinia@unumprovident.com]  
**Sent:** Wednesday, June 29, 2005 3:40 PM  
**To:** Dwight Anderson; Rob Woodman  
**Subject:** FW: UNUM

**Importance:** High

We have some numbers you can use. In fact this e-mail I believe can also be submitted along with the application. Thanks.

Nick NajaFinia, PE  
Director of Facilities Operations, NE Region UnumProvident Corporation  
2211 Congress Street, B146  
Portland, ME 04122  
Phone: 207-575-5200  
Fax: 207-575-1614  
Mobile: 207-807-2619

-----Original Message-----

From: TOM-STANLEY@miltoncat.com (mailto:TOM\_STANLEY@miltoncat.com)  
Sent: Wednesday, June 29, 2005 3:36 PM  
To: NajaFinia, Nick  
Cc: MIKE-GILBERT@miltoncat.com  
Subject: UNUM

Good Afternoon Nick:

Below is the statement from our enclosure vendor Pritchard Brown regarding the dB rating drop of the enclosure.

I appologize for the delay in getting this information to you.

Tom Stanley  
Project Manager  
Milton CAT  
Email address: tom-stanley@miltoncat.com  
Website: http://miltoncat.com

----- Forwarded by TOM STANLEY/POWER/SMI on 06/29/2005 03:26 PM -----

"Mike Schmitt" <mschmitt@pritchardbrown.com>  
06/29/2005 03:04 PM

To: <tom\_stanley@miltoncat.com>  
cc:  
Subject: UNUM

Tom,

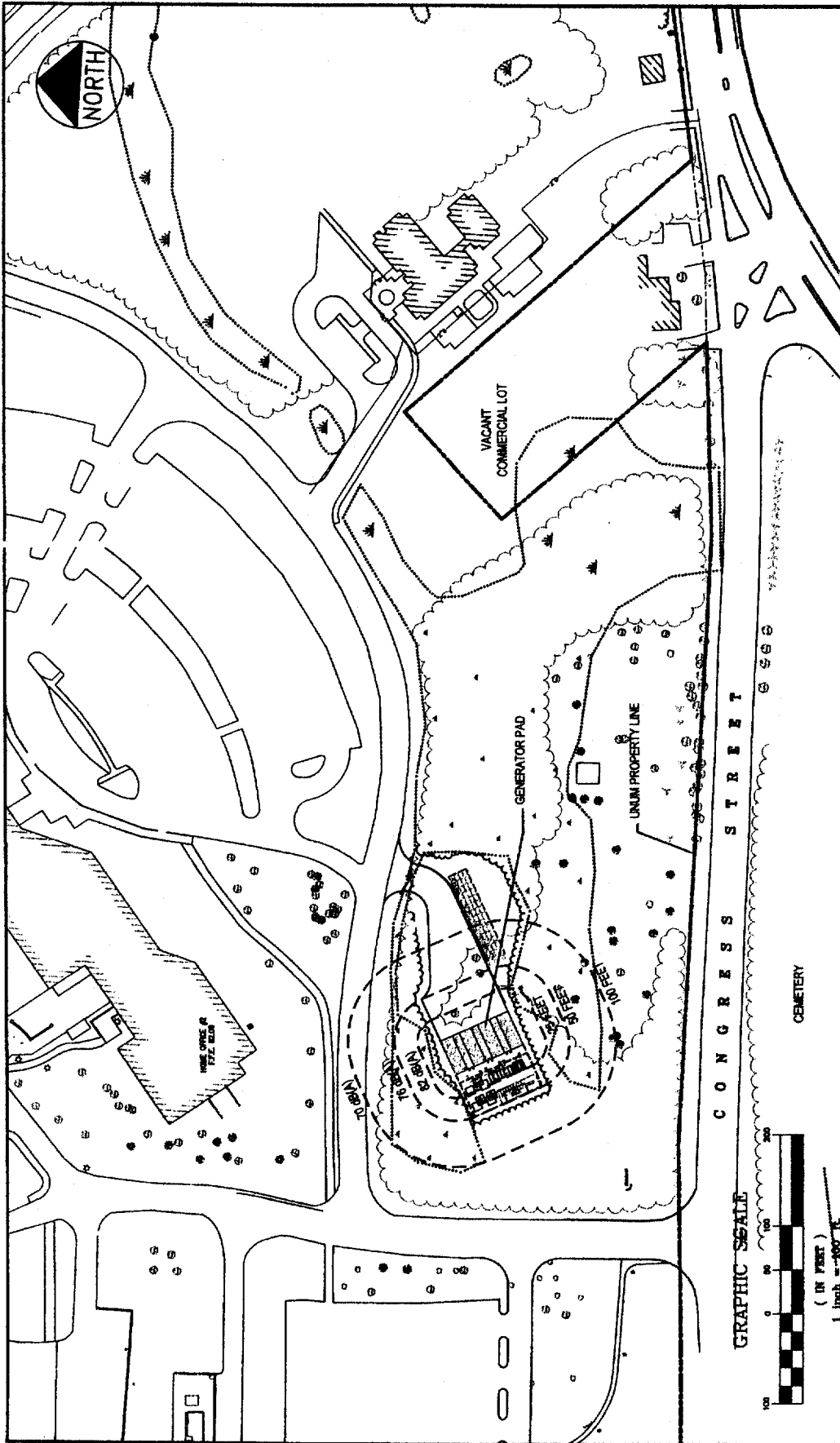
This project utilizes a 3516-2000 KW generator set with an estimated source noise of 112 dB(A) at 1 meter (or roughly 3 feet). Under free field conditions, the enclosure is designed to reduce that source noise by an average of 25 dB(A) at 3 feet. Estimated resultant noise level at 3 feet is 87 dB(A), at 25 feet is 82 dB(A), at 50 feet is 76 dB(A) and at 100 feet is 70 dB(A). We make every effort to provide a reliable resultant sound estimation, however, please be aware that for every project, there are many site factors particular to the project that could effect the results and of which Pritchard Brown is likely not aware. Should you have questions or concerns or wish to discuss this further, please do not hesitate to call or reply to this email.

Thank you,  
Mike Schmitt  
Senior Sales Engineer  
Pritchard Brown, LLC  
Baltimore, MD 21205  
Ph. 410.483.5600 Ext. 120 / Fx. 410.483.5695 / Cell 443.794.5563

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This Email has been scanned for all viruses by PAETEC Email Scanning Services, utilizing MessageLabs proprietary SkyScan infrastructure.

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	<b>EMERGENCY GENERATOR PAD</b> <b>UNUM LIFE INSURANCE</b>				FIGURE <b>1</b>
	DRAWN: DED CHECKED: DDA FILE NAME: 2465-SP	DATE: JUNE 2005 SCALE: 1"=100' JOB NO. 2465.01	<b>EMERGENCY GENERATOR PAD</b> <b>UNUM LIFE INSURANCE</b>		
Deluca-Hoffman Associates, Inc. 778 MAIN STREET, SUITE 3 SOUTH PORTLAND, ME 04106 207.775.1721 WWW.DELUCAHOFFMAN.COM					

From: "Rob Woodman" <rwoodman@DelucaHoffman.com>  
To: "Sarah Hopkins" <SH@portlandmaine.gov>, <JAYJR@po...>  
Date: Tue, Jul 12, 2005 9:48 AM  
Subject: RE: UNUM Provident Generator Model Modification

Sarah,

I have attached a copy of the Project Modification Application with submitted to the DEP on June 28 2005. The application shows a table with details on the noise at various distances from the generators and a figure showing these noise radii.

If you (the city) are satisfied with the change - please let me know in the form of a short email as **soon** as practicably possible (today would be great)

If you require any further information - don't hesitate to call the office.

Thanks and have a super day,

Rob Woodman  
DeLuca-Hoffman Associates, Inc  
775 1121

--Original Message--

From: Sarah Hopkins [mailto:SH@portlandmaine.gov]  
Sent: Tuesday, July 12, 2005 9:17 AM  
To: Rob Woodman; JAYJR@portlandmaine.gov  
Cc: MES@portlandmaine.gov  
Subject: Re: UNUM Provident Generator Model Modification

Rob,  
Could you ~~resend~~ the decibel attenuation information? We would be most interested in ~~any changes to~~ noise impacts.  
Thanks.  
-Sarah

>>> "Rob Woodman" <rwoodman@DelucaHoffman.com> 07/08/2005 11:16:40 AM  
>>>

Sarah/Jay, I just wanted to touch base with you re: the Unum Provident Generator Pad Project to see whether or not you had any feedback etc. As you may know, last week we submitted a project modification application to Bob Green at the DEP requesting approval to switch to a different model of generator. Bob requested some additional information on Tuesday re: catalogue cuts etc which we provided to him \* it looks pretty good from the DEP end \* we should get approval from them shortly. We hope that you can forward approval from the Town that this model modification and hence slightly different noise output is acceptable. All we require is a short email/letter of approval from you \* so we can press onward with the project. Thanks, Robert J Woodman Design Engineer DeLuca-Hoffman Associates, Inc. 778 Main Street Suite 8 South Portland, Maine 04106 Ph. 207.775.1121 Fx. 207.879.0896 <http://www.delucahoffman.com>

From: Marge Schmuckal  
To: Internet: rwoodman@DelucaHoffman.com  
Date: **Thu, Aug 4, 2005 3:35 PM**  
**Subject:** UNUM Provident Generator Model Modification

Rob,

I am in receipt of your project modifications for the new Generator. Can you give me more specifics as to how the additional plantings may reduce the sound that is generated? As you know the OP Zone states that the sound generated at the lot boundaries should not exceed 60 dBAs. I would like a like more assurances that requirement could be met.

Thanks,  
Marge

CC: Sarah Hopkins





STATE OF THE ART SHELTERS AND SYSTEM INTEGRATION

August 10, 2005

Milton Cat Power Systems  
16 Pleasant Hill Rd  
Scarborough, Maine 04070  
Attn: Mr. Mike Gilbert

Subject: UNUM Sound Study

Mike,

The proposed generator enclosures are designed to reduce the source noise by an average of 25 dB(A) at 1 meter. With the Caterpillar model 3516B's known source noise level of 112 dB(A), the estimated resultant noise level at 100' is 70 dB(A). At 200', the estimated resultant noise level is 64 dB(A). These values are based upon free field conditions and are the expected empirical results of the inverse-square law. (The inverse square law is often applied as a "rule-of-thumb" to determine the effects of distance on sound level. The inverse-square law simply predicts that for a point-source of sound under free field conditions the sound level will decrease by 6 dB each time the distance from the source is doubled.) Site obstructions such as natural vegetation often reduce this value further.

We have thoroughly reviewed the photographs and drawings depicting the UNUM campus and proposed generator pad location. Here are our observations:

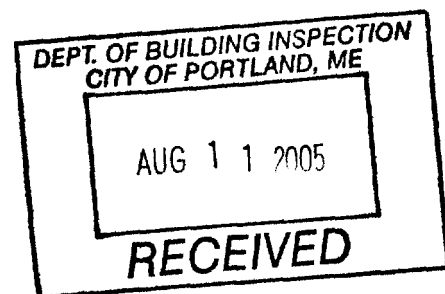
- The pad location is well away from any buildings or other large reflective surfaces, causing the attenuation in the direction of the property line at Congress Street to adhere to the inverse-square law.
- The vegetation appears to be mature, and a mix of both deciduous and evergreen trees. These trees will have both barrier and absorptive properties, especially for the higher-frequency sound.

Based on these observations, the resultant sound level measured at the Congress Street property line with both units operating at full load will be less than the free field condition levels. In our experience, it is expected that the wooded area will provide an additional 4-5 dB(A) reduction. The fact that the generator set system has been designed to run at an average load factor of less than 80% will lower the source noise by at least 2 dB(A); therefore, it is our professional opinion that these additional site-specific factors will result in a property line sound level of under 60 dB(A).

We hope this information has been helpful, and please advise if you require anything further.

Best regards,

Mike Witkowski  
Vice President of Engineering  
Pritchard Brown, LLC



**From:** "Dwight Anderson" <danderson@DelucaHoffman.com>  
**To:** <MES@portlandmaine.gov>  
**Date:** Thu, Aug 11, 2005 9:22 AM  
**Subject:** Subject: UNUM Provident Generator Model Modification

Marge,  
Attached is a letter from Pritchard Brown's Engineering Department indicating that in their professional opinion the existing vegetation will result in a property line sound level of under 60 dB(A); therefore, any additional plantings will only help to further reduce the noise level.

On behalf of UNUM, we will appreciate a timely response from your office to keep this time sensitive project moving forward.

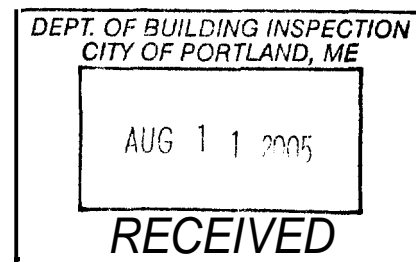
Dwight D. Anderson, P.E.  
DeLuca-Hoffman Associates, Inc.  
778 Main Street Suite 8  
South Portland, Maine 04106  
Phone 207.775.1121  
Facsimile 207.879.0896

**From:** Marge Schmuckal [mailto:MES@portlandmaine.gov]  
**Sent:** Thursday, August 04, 2005 3:36 PM  
**To:** Rob Woodman  
**Cc:** SH@portlandmaine.gov  
**Subject:** UNUM Provident Generator Model Modification

Rob,  
I am in receipt of your project modifications for the new Generator. Can you give me more specifics as to how the additional plantings may reduce the sound that is generated? As you know the OP Zone states that the sound generated at the lot boundaries should not exceed 60 dBAs. I would like a like more assurances that requirement could be met.  
Thanks,  
Marge

<<UNUM Sound Letter-rev 2.doc>>

**CC:** <NNajafinia@unumprovident.com>, "Rob Woodman" <rwo...



From: Marge Schmuckal  
To: port-web:danderson@[DelucaHoffman.com]  
Date: Thu, Aug 11, 2005 11:46 AM  
Subject: Re: Subject: UNUM Provident Generator Model Modification

Dwight,  
Thank you for the attached information. With this information, I have determined that you **will** be meeting the zoning requirements of the OP underlying zone. With my zoning sign-off, I believe that planning will be approving your site plan submittal. The next step would be to apply for a building permit for the work and then to build it.  
Thank you,  
Marge

>>> "Dwight Anderson" <danderson@DelucaHoffman.com> 08/11 9:15 AM >>>

Marge,  
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778 Main Street Suite 8  
South Portland, Maine 04106  
Phone 207.775.1121  
Facsimile 207.879.0896

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<<UNUM Sound Letter-rev 2.doc>>

CC: port-web:[unumprovident.com].NNajafinia@port-web; ...



# PORTLAND MAINE

*Strengthening a Remarkable City, Building a Community for Life \* [www.portlandmaine.gov](http://www.portlandmaine.gov)*

Planning and Development Department  
Lee D. Urban, Director

Planning Division  
Alexander Jaegerman, Director

August 31, 2005

Nick Najafinia  
UNUM  
2211 Congress Street  
Portland ME 04122

RE: UNUM Generator Pad  
CBL: 231-B-002

Dear Mr. Najafinia:

This letter is to confirm the revision to the approved site plan for the placement of a generator pad at the UNUM campus at 2211 Congress Street. Evidence was submitted to the Zoning Administrator describing how the sound from the generator would be attenuated by the structure and associated plantings to meet the noise performance standard in the OP zone.

The revised plan has been reviewed and approved by the Planning Department.

If you have **any** questions regarding the revision please contact Sarah Hopkins at 874-8720.

Sincerely,

Alexander Jaegerman  
Alexander Jaegerman  
Planning Division Director

O:\PLAN\DEVREVW\CONG2211\LETTERS\AUGUST 31REVISION APPLTR.DOC

**From:** Marge Schmuckal  
**To:** Sarah Hopkins  
**Date:** Fri, Sep 17, 2004 1:25 PM  
**Subject:** UNUM Emergency Generator Pad

Sarah,  
Thank you for the second copy of the information regarding the expected decibal readings for this module.

Section 14-230.16 - external effects within the OP Zone - limits the the volume of sound to no more than 60 dBAs at lot boundaries. The given information states that the unit meets 70 dBA at 50 feet. I have measured the pad setback at 170 to Congress Street. I am not sure what the sound readings for this unit would be ~~at~~ 170' compared to 50. It would perhaps be ~~wise~~ to require shrubbery around the unit to help buffer the sound. This is an emergency generator and are normally tested on a weekly or monthly schedule. They usually do not run constantly.

This office should be able to do sound readings when the unit is installed to insure compliance with the 60 dBA. The applicant shall be required to agree to future adjustments if the unit can not meet the noise requirements.

Marge

## SECTION 1

### DEVELOPMENT DESCRIPTION

#### 1.1 Introduction

Unum Provident is proposing the addition of an emergency generator pad at the Congress Street Campus in Portland, Maine. This facility may involve phased construction and staged improvements intended to increase the reliability of the electrical power supply for the Congress Street Campus. This application for a modification for the facility is intended to address the items attendant with the Site Location of Development and Natural Resource Regulations and Permits of the existing facility. In order to provide flexibility for the facility over time, this application seeks approval for the upper limit of potential site and infrastructure needs for the emergency facility. Initial construction may actually result in lesser impacts and infrastructure requirements.

The application seeks approval to construct a concrete pad with dimensions of 80 x 100 feet (8,000 square feet). No building is proposed at this location. The Emergency Generator Pad needs to be sited close to existing infrastructure near the mechanical feeds to H.O. #2.

The facility will be used for emergency generators in the event of power outages..

It is noted that the activity in the facility should not affect this permit noting:

- Any air emissions licensing will be permitted separately; and
- The applicant agrees to the stipulation to submit supplemental information prior to the installation of equipment which could be considered noise pursuant to the requirements of MeDEP Air Quality Regulations 06.096.

The proposed facility will be located in the portion of the campus bounded to the south by Congress Street, to the west by the campus entrance drive from Congress Street, to the north by an internal driveway, and to the east by the Unum Daycare and wetlands. This area is currently forested.

The area is characterized as an upland peninsula surrounded by wetlands. The proposed activity will result in the disturbance of approximately 0.75 acres of land for the concrete pad, drive, construction of stormwater management facilities, and related site work.

#### 1.2 Existing Site Conditions

The Unum Provident Campus is a large facility which holds an existing Site Location of Development Permit. This modification focuses on the immediate area where the emergency generator pad facility would be constructed. The area as described in the introduction is about 2.80 acres with the "project area" (disturbed area) being about 0.75 acres.

Topography in the area is mild with the upland peninsula gently rising above the wetlands which surround three sides. Elevations in this area range from 86 to 74 with the elevations in the area of the proposed facility ranging from 86 to 76. The site conditions are depicted on Drawing C-1 of the plan set.

Drainage flows from the upland area to the adjacent wetlands and continues through the wetlands to an unnamed tributary of the Stroudwater River. The drainage is tributary to the Stroudwater River and the Fore River. These receiving waters are not listed as rivers most at risk from development, sensitive, threatened regions, or watershed.

Soils on the site are mapped on the USDA SCS Map as being Scantic silt loam. Figures 8, 9, and 10 appended to this section provide the Medium Intensity Soils, Sand and Gravel Aquifer, and Surficial Geology for the site. Bedrock is known to be relatively shallow in portions of the campus.

The site is not in a 100-year floodplain based upon the Flood Map appended to this section as Figure 7.

### **1.3 Natural Resources**

As stated, the site of the proposed project is a peninsula surrounded by wetlands. The wetlands in the project area were flagged and identified by Jennifer West of Normandean Associates on December 12, 2003. Approximately 450± square feet of wetlands at the ditch of the entrance to the site will be impacted by the proposed emergency facility.

### **1.4 Proposed Project**

The proposed project is generally described in the introduction as a 80 by 100 foot emergency generator pad. Access to the site will be from the internal driveway just north of the proposed facility.

The proposed facility and infrastructure connection locations are shown on Drawings C-2, C-3, and C-4 of the accompanying site plan.

### **1.5 Critical Areas**

The critical areas are the adjacent wetlands proposed to remain undisturbed by construction of the project.

### **1.6 Construction Schedule**

The construction of the facility may commence in the Summer of 2004. The Erosion Control Plan prepared for this submission includes winter provisions, if necessary.

**.7 Figures, Plates and Drawings**

Figures showing the proposed new school and site are appended to this section and include:

<b>Figure No.</b>	<b>Title</b>
1	DeLorme Location Map
2	USGS Topographic Map
3	Property Tax Map
4	Zoning Map
5	Aerial Photograph
7	FEMA Flood Map
8	USDA SCS Soils Map
9	MGS Sand and Gravel Aquifer Map
10	MGS Surficial Geology Map
11	National Wetland Inventory Map

Drawings provided in support of the application include:

<b>Drawing No.</b>	<b>Description</b>
C-1	Existing Conditions
c-2	Site Layout Plan
c-3	Grading, Drainage, and Erosion Control Plan
c-4	Utility Plan
c-5	Miscellaneous Site Details
C-6	Miscellaneous Site Details



# **EMERGENCY GENERATOR PAD FOR UNUM PROVIDENT SUPPORTING SECTION NARRATIVES**

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## **Section 2 – Title Right and Interest**

The proposed project is sited on property owned by Unum Provident and as demonstrated in prior standing permits.

## **Section 3 – Financial Capacity**

The emergency generator pad would be funded using capital appropriations of Unum Provident. This facility is a small undertaking for a company the size of Unum Provident.

## **Section 4 – Technical Ability**

Unum Provident has retained DeLuca Hoffman Associates, Inc. for assistance in the preparation of the site plans and certain site permit applications for this project. Normandeau Associates has been retained as a subconsultant to DeLuca-Hoffman Associates, Inc. to provide wetland mapping and related expertise.

DeLuca Hoffman Associates, Inc. and Normandeau Associates are familiar with the State of Maine Site Location of Development Application process and have historic experience with the Site Location of Development process from prior work on other projects in the State of Maine.

Unum Provident has a full facilities staff to operate and maintain the facility. The company has prior experience from the prior permitting of major projects within the Unum campus.

## **Section 5 – Noise**

The potential for noise generation will depend upon the equipment selected for the emergency generator pad. The applicant is requesting the permit application contain a provision for a statement to be provided to MeDEP concerning the equipment used for the facility to be assessed for noise by qualified personnel. The MeDEP would be provided 30 days to review the information and determine if additional information or any mitigation would be required.

## **Section 6 – Visual Quality and Scenic Character**

The emergency generator pad will be accessed from an internal drive within the campus and set back from Congress Street by a natural deciduous buffer with a width of 120. The generator pad will also be in excess of 300 feet from the nearest abutter.

Unum Provident prides itself in its longstanding reputation of maintaining a well-manicured and attractive Congress Street campus for its clients, workforce, and image as one of the major employers in the City of Portland. The addition of the 8,000 square foot emergency generator pad will not alter this established pattern.

### Section 7 – Wildlife and Fisheries:

This element has been previously reviewed during the prior Site Location of Development Review process.

### Section 8 – Historic Sites

This element has been previously reviewed during the prior Site Location of Development Review process.

### Section 9 – Unusual Natural Areas

This element has been previously reviewed during the prior Site Location of Development Review process.

### Section 10 – Buffers

The generator pad has been sited to minimize the wetland impact. There are proposed wetland fills of about 430 square feet proposed. Using the upland to the extent possible to minimize wetland impact results in a variable but narrow width buffer to the wetlands ranging from zero along the edge of wetland fills to about 15 feet.

Visual buffers are discussed in the paragraph under Section 6.

### Section 11 – Soils

The soils on this site are mapped by the USDA Medium Intensity Soil Survey as being Scantic. These soils are described as follows:

*“The Scantic series consists of deep, nearly level, poorly drained, medium-textured soils that are underlain by fine-textured material. These soils formed in marine and lacustrine sediment. They are in old marine estuaries in the eastern and central parts of the country and in depressions around a few inland lakes...”*

*A water table is at a depth of 1 foot during most of the year, and depth to bedrock is 5 feet or more.”*

Prior to construction, the applicant will engage a geotechnical consultant to conduct investigations and recommendations for the foundation systems for the project. It is not anticipated that any required geotechnical stabilization measures would increase the disturbed area for the facility.

A letter describing the wetland delineation in this portion of the campus has been prepared by Normandeau Associates, Inc. and is enclosed.

## **Section 12 – Stormwater Management**

A detailed Stormwater Management Plan has been prepared and is appended as a separate portion of this application.

## **Section 13 – Maintenance of Common Facilities and Property**

Unum Provident will maintain generator pad. The Stormwater Management Plan employs subsurface detention facilities and water quality units. As a condition of the approval, Unum Provident will enter into a contract with the vendor or a firm acceptable to MeDEP to provide the first three years maintenance of the stormwater quality units. After that time, the maintenance will be provided by Unum Provident as part of their maintenance of the overall campus system. The underground storage system will have inspection ports to permit periodic observation of the system.

## **Section 14 – Erosion and Sediment Control**

A detailed Erosion/Sediment Control Plan has been prepared and is appended as a separate portion of this application.

## **Section 15 – Groundwater**

The site is not on a sand and gravel aquifer as shown by Figure 8 in Section 1. The proposed facility will not withdraw or inject groundwater. The detention facility will be lined to prevent infiltration.

## **Section 16 – Water Supply**

Water supply will not be required at the concrete pad.

## **Section 17 – Wastewater Disposal**

No additional wastewater is proposed as part of this project.

## **Section 18 Solid Wastes**

Solids wastes from the operation of the facility are anticipated to be minimal and will be handled with other wastes on the campus. Wood wastes from clearing will be chipped and used for erosion control or transported to a biomass facility.

During construction, the contractor will be responsible for identifying the disposition of all construction waste at a licensed facility.

## **Section 19 – Flooding**

The project is not in a mapped flood plain as shown on Figure 7 of Section 1. Stormwater Management is proposed as part of the project as outlined in Section 12.

## **Section 20 – Blasting**

Blasting may be required for the project based upon work on other nearby areas of the campus. However, provisions have been made in the event that blasting is required, for removal of oversized boulders, or if rock is encountered. Boulders over 3 c.y. will be measured and paid for as rock if encountered during construction. Blasted rock or boulders may be broken into a well-graded mixture under 12” in size and used as follows:

- Removed from the site.
- Processed and used as rip rap.

The measures of paragraphs 20.1 and 20.2 of this section will become part of the contract documents for construction to address the proper method for blasting encountered during construction.

### **Preblast Survey**

The Owner will contract with general contractors for the project. The Owner may elect a design build firm or to bid the project to General Contractors with Division 2 work included in the building bid. The General Contractor will be required to prepare a blasting plan and preblast survey prior to any rock removal. A written report of the preblast survey and blasting plan will be provided to the Owner by the Contractor and will be available for review by MeDEP. The scope of the blasting plan and preblast survey will be required to conform to the following specifications and the requirements of the Blasting Section:

- All structures within a minimum distance of 500 feet from any blasting activity shall be surveyed as part of the preblast survey. The extent beyond the 500-foot minimum shall be determined by the Contractor, their blasting subcontractor, and their insurance companies.
- A blasting plan shall be prepared which addresses:
  - ◆ Airblast limits
  - ◆ Ground vibrations
  - ◆ Maximum peak particle velocity
- The blasting plan shall meet criteria established in Chapter 3 (Control of Adverse Effects) in the Blasting Guidance Manual of the United States Department of the Interior Office of Surface Mining Reclamation and Enforcement.
- Provisions and measures to monitor and assure compliance with the blasting plan.

### **Blasting**

Blasting shall be performed only after approval has been given by the Owner for such operations and must comply with the following provisions:

- A. The Contractor or any subcontractor shall use sufficient stemming, matting or natural protective cover to prevent flyrock from leaving property owned or under control of the owner or operator or from entering protected natural resources or natural buffer strips. Crushed rock or other suitable material must be used for stemming when available; native gravel, drill cuttings or other material may be used for stemming only if no other suitable material is available.
- B. The maximum allowable airblast at any inhabited building not owned or controlled by the developer may not exceed 129 decibels peak when measured by an instrument having a flat response (+ or - 3 decibels) over the range of 5 to 200 hertz.
- C. The maximum allowable airblast at an uninhabited building not owned or controlled by the developer may not exceed 140 decibels peak when measured by an instrument having a flat response (+ or - 3 decibels) over the range of 5 to 200 hertz.
- D. Monitoring of airblast levels is required in all cases for which a preblast survey is required by paragraph F. The Contractor may file an MeDEP Permit Modification requesting the MeDEP waive the monitoring requirement if the Contractor or subcontractor secures the permission of affected property owners to increase allowable airblast levels on their property and the Department determines that no protected natural resource will be adversely affected by the increased airblast levels. The cost to prepare the permit modification and the effect of project delay while MeDEP reviews the request shall be borne solely by the Contractor or his subcontractor.
- E. If a blast is to be initiated by detonating cord, the detonating cord must be covered by crushed rock or other suitable cover to reduce noise and concussion effects.
- F. A preblast survey is required and must extend a minimum radius of 2,000 feet from the blast site. The preblast survey must document any preexisting damage to structures and buildings and any other physical features within the survey radius that could reasonably be affected by blasting. Assessment of features such as pipes, cables, transmission lines and wells and other water supply systems must be limited to surface conditions and other readily available data, such as well yield and water quality. The preblast survey must be conducted prior to the initiation of blasting at the operation. The Contractor or subcontractor shall retain a copy of all preblast surveys for at least one year from the date of the last blast on the development site.
- (1) The Contractor or the subcontractor is not required to conduct a preblast survey on properties for which the owner or operator documents the rejection of an offer by registered letter, return receipt requested, to conduct a preblast survey. Any person owning a building within a preblast survey radius may voluntarily waive the right to a survey.
- G. Blasting may not occur in the period between sundown and sunrise the following day or in the period 7:00 p.m. and 7:00 a.m., whichever is greater. Routine production blasting is not allowed in the daytime on Sunday. Detonation of misfires may occur outside of these times but must be reported to the Department within 5 business days of the misfire detonation. Blasting may not occur more frequently than 4 times per day. Underground production

blasting may be exempted from these requirements, provided that a waiver is granted by the Department.

H. Sound from blasting may not exceed the following limits at any protected location:

<u>Number of Blasts Per Day</u>	<u>Sound Level Limit</u>
1	129 dbl
2	126 dbl
3	124 dbl
4	123 dbl

I. The maximum peak particle velocity at inhabitable structures not owned or controlled by the developer may not exceed the levels established in Table 1 in paragraph J and the graph published by the United States Department of the Interior in "Bureau of Mines Report of Investigations 8507," Appendix B, Figure B-1. The Contractor or subcontractor may apply for a MeDEP Project Modification to request a variance to allow ground vibration levels greater than 2 inches per second on undeveloped property not owned or controlled by the applicant if the Department determines that no protected natural resource, unusual natural area or historic site will be adversely affected by the increased ground vibration levels. If inhabitable structures are constructed on the property after approval of the MeDEP and prior to completion of blasting, the Contractor immediately must notify the Department and modify blasting procedures to remain in compliance with the standards of this subsection. The cost to prepare the permit modification and the effect of project delay while MeDEP reviews the request shall be borne solely by the Contractor or his subcontractor.

J. Table 1 of this paragraph or the graph published by the United States Department of the Interior in "Bureau of Mines Report of Investigations 8507", Appendix B. Figure B-1 must be used to evaluate ground vibration effects for those blasts for which a preblast survey is required.

- (1) Either Table 1 of this paragraph or graph published by the United States Department of the Interior in "Bureau of Mines report of Investigations 8507", Appendix B, Figure B-1 may be used to evaluate ground vibration when blasting is to be monitored by seismic instrumentation.
- (2) Blasting measured in accordance with Table 1 of this paragraph must be conducted so that the peak particle velocity of any one of the 3 mutually perpendicular components of motion does not exceed the ground vibration limits at the distances specified in Table 1 of this paragraph.
- (3) Seismic instruments that monitor blasting in accordance with Table 1 of this paragraph must have the instrument's transducer firmly coupled to the ground.
- (4) An owner or operator using Table 1 of this paragraph must use the scaled-distance equation,  $W=(D/D_s)^2$ , to determine the allowable charge weight of explosives to be detonated in any 8 millisecond or greater delay period without seismic monitoring, where  $W$  is equal to the maximum weight of explosives, in pounds, and  $D$  and  $D_s$  are

defined as in Table 1 of this paragraph. The Contractor may apply for a Permit Modification to MeDEP to authorize the use of a modified scaled-distance factor for production blasting if the contractor can demonstrate to a 95% confidence level, based upon records of seismographic monitoring at the specific site of the mining activity covered by the permit, that use of the modified scaled-distance factor will not cause the ground vibration to exceed the maximum allowable peak particle velocities of Table 1 of this paragraph. The cost to prepare the permit modification and the effect of project delay while MeDEP reviews the request shall be borne solely by the Contractor or his subcontractor.

- (5) Blasting monitored in accordance with the graph published by the United States Department of the Interior in "Bureau of Mines Report of Investigations 8507", Appendix B, Figure B-1 must be conducted so that the continuously variable particle velocity criteria are not exceeded.

The Contractor may apply for a Permit Modification to MeDEP for a variance of the ground vibration monitoring requirement prior to conducting blasting at the development site if the Contractor agrees to design all blasts so that the weight of explosives per 8 millisecond or greater delay does not exceed that determined by the equation  $W=(D/D_s)^2$ , where W is the maximum allowable weight of explosives per delay of 8 milliseconds or greater, D is the shortest distance between any area to be blasted and any inhabitable structure not owned or controlled by the developer, and  $D_s$  equals 70 ft./lb.<sup>1/2</sup>. As a condition of the variance, the Department may require submission of records certified as accurate by the blaster and may require the owner or operator to document compliance with the conditions of this paragraph. The cost to prepare the permit modification and the effect of project delay while MeDEP reviews the request shall be borne solely by the Contractor or his subcontractor.

The following is Table 1.

<i>Distance (D) from the blast area</i>	<i>Maximum allowable peak particle velocity (Vmax) for ground vibration (in./sec.)</i>	<i>Scaled-distance factor (Ds) to be applied without seismic monitoring</i>
<i>0 to 300</i>	<b>1.25</b>	<b>50</b>
<i>301-5000</i>	<i>1.00</i>	<b>55</b>
<i>Greater than 5000</i>	<i>0.75</i>	<i>65</i>

K. A record of each blast, including seismographic data, must be kept for at least one year from the date of the last blast, must be available for inspection at the development or at the offices of the owner or operator if the development has been closed, completed or abandoned before the one-year limit has passed, and must contain at a minimum the following data:

- (1) Name of blasting company or blasting contractor;
- (2) Location, date and time of blast;
- (3) Name, signature and social security number of blaster;

- (4) *Type of material blasted;*
- (5) *Number and spacing of holes and depth of burden or stemming;*
- (6) *Diameter and depth of holes;*
- (7) *Type of explosives used;*
- (8) *Total amount of explosives used;*
- (9) *Maximum amount of explosives used per delay period of 8 milliseconds or greater;*
- (10) *Maximum number of holes per delay period of 8 milliseconds or greater;*
- (11) *Method of firing and type of circuit;*
- (12) *Direction and distance in feet to the nearest dwelling, public building, school, church or commercial or institutional building neither owned nor controlled by the developer;*
- (13) *Weather conditions, including such factors as wind direction and cloud cover;*
- (14) *Height or length of stemming;*
- (15) *Amount of mats or other protection used;*
- (16) *Type of detonators used and delay periods used;*
- (17) *The exact location of each seismograph and the distance of each seismograph from the blast;*
- (18) *Seismographic readings;*
- (19) *Name and signature of the person operating each seismograph; and*
- (20) *Names of the person and the firm analyzing the seismographic data.*

*L. All field seismographs must record the full analog wave form of each of the 3 mutually perpendicular components of motion in terms of particle velocity. All seismographs must be capable of sensor check and must be calibrated according to the manufacturer's recommendations.*

### **Section 21 – Air Emissions**

Unum Provident will seek separate air emissions permits, if required, for the emergency generator pad.

### **Section 22 – Odors**

No nuisance odors are anticipated from the emergency generator pad.

### **Section 23 – Water Vapor**

The scale of the project is insufficient to result in significant water vapors.

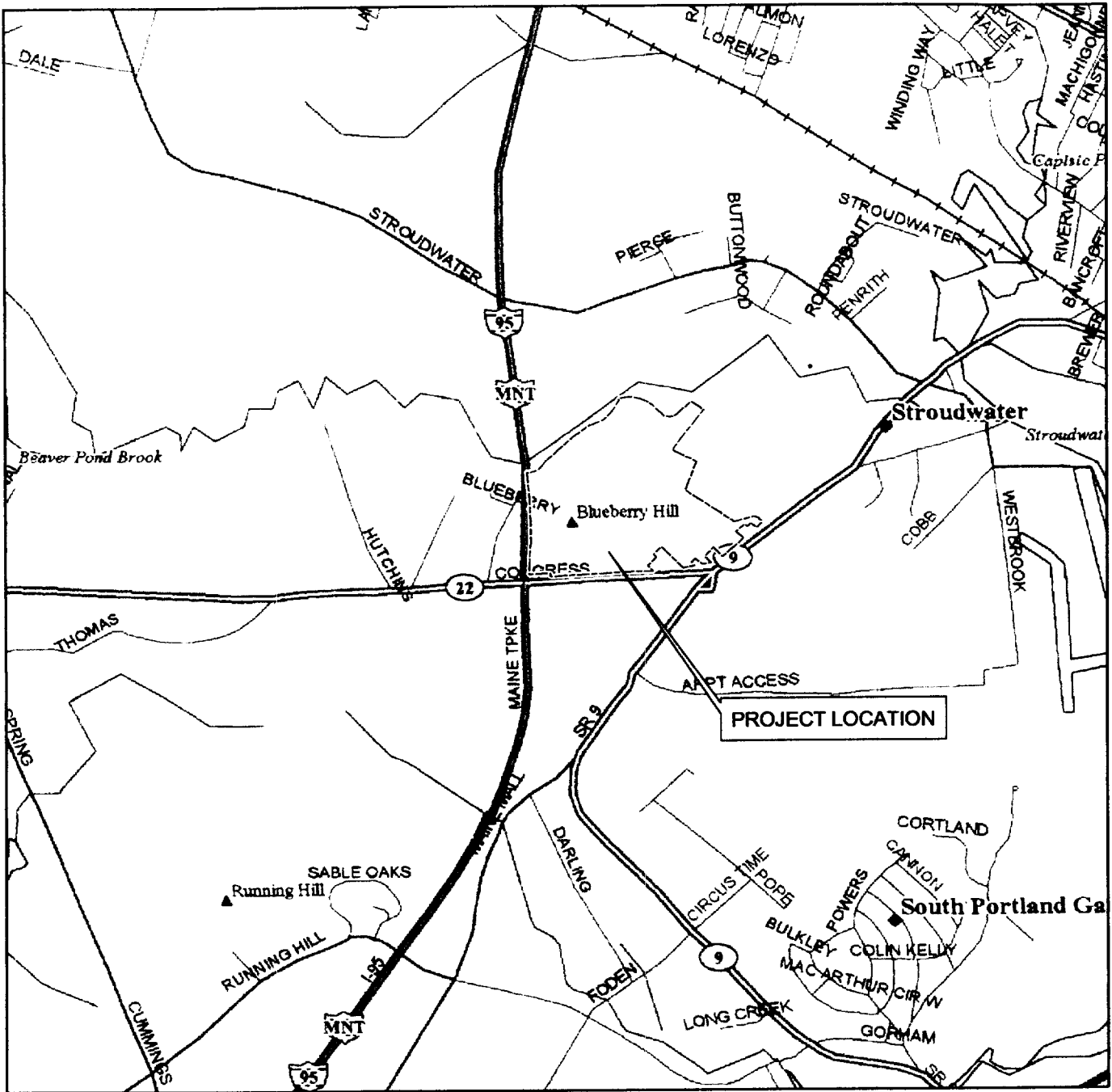



### **Section 24 –Sunlight**

The facility is located in an area within the campus where shadows onto abutting properties are not possible.

### **Section 25 –Notices**

It is the understanding of the Applicant and DeLuca-Hoffman Associates, Inc. that public notices are not required for a Permit Modification or Amendment.



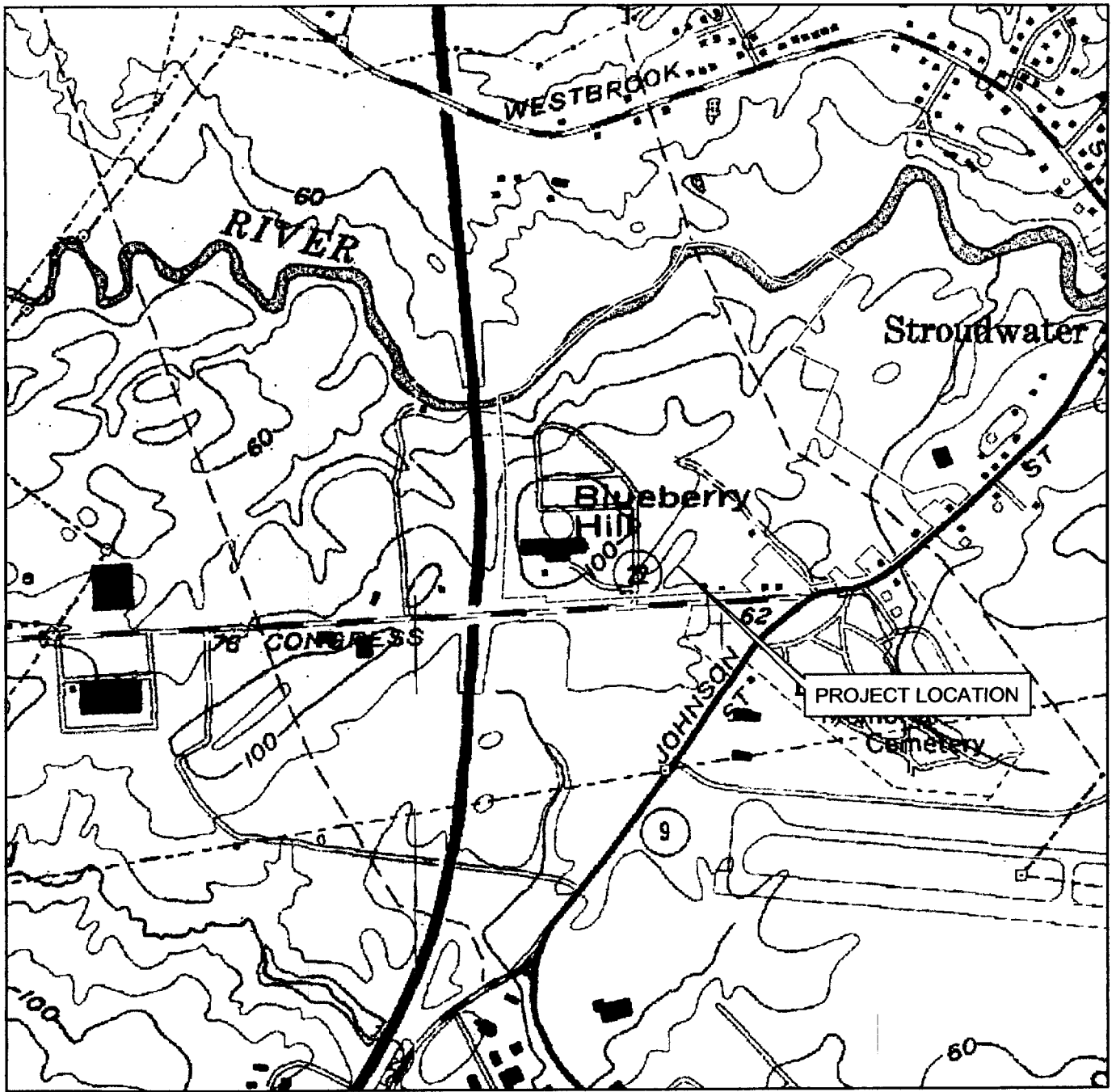

  
**EMERGENCY GENERATOR PAD**  
**UNUM PROVIDENT**  
**DeLORME LOCATION MAP**  
 SOURCE: DeLORME MAP EXPERT


DeLuca-Hoffman Associates, Inc.  
 778 MAIN STREET, SUITE 8  
 SOUTH PORTLAND, ME 04106  
 207-775-1121  
 www.delucahoffman.com

DRAWN: RJK  
 CHECKED: DDA  
 DATE: FEB. 2004  
 FILENAME: G:\2445-UNUMFIGURES\2445-DELORME-FIG1.mxd  
 SCALE: 1 inch equals 2,000feet

**FIGURE**






**EMERGENCY GENERATOR PAD  
 UNUM PROVIDENT  
 USGS TOPOGRAPHIC MAP**  
 SOURCE: MAINE OFFICE OF GIS


DeLuca-Hoffman Associates, Inc.  
 778 MAIN STREET, SUITE 8  
 SOUTH PORTLAND, ME 04106  
 207-775-1121  
[www.delucahoffman.com](http://www.delucahoffman.com)

DRAWN: RJK  
 CHECKED: DDA  
 DATE: FEB. 2004  
 FILENAME:  
 SCALE: 1 inch equals 1,000feet

**FIGURE**

**2**

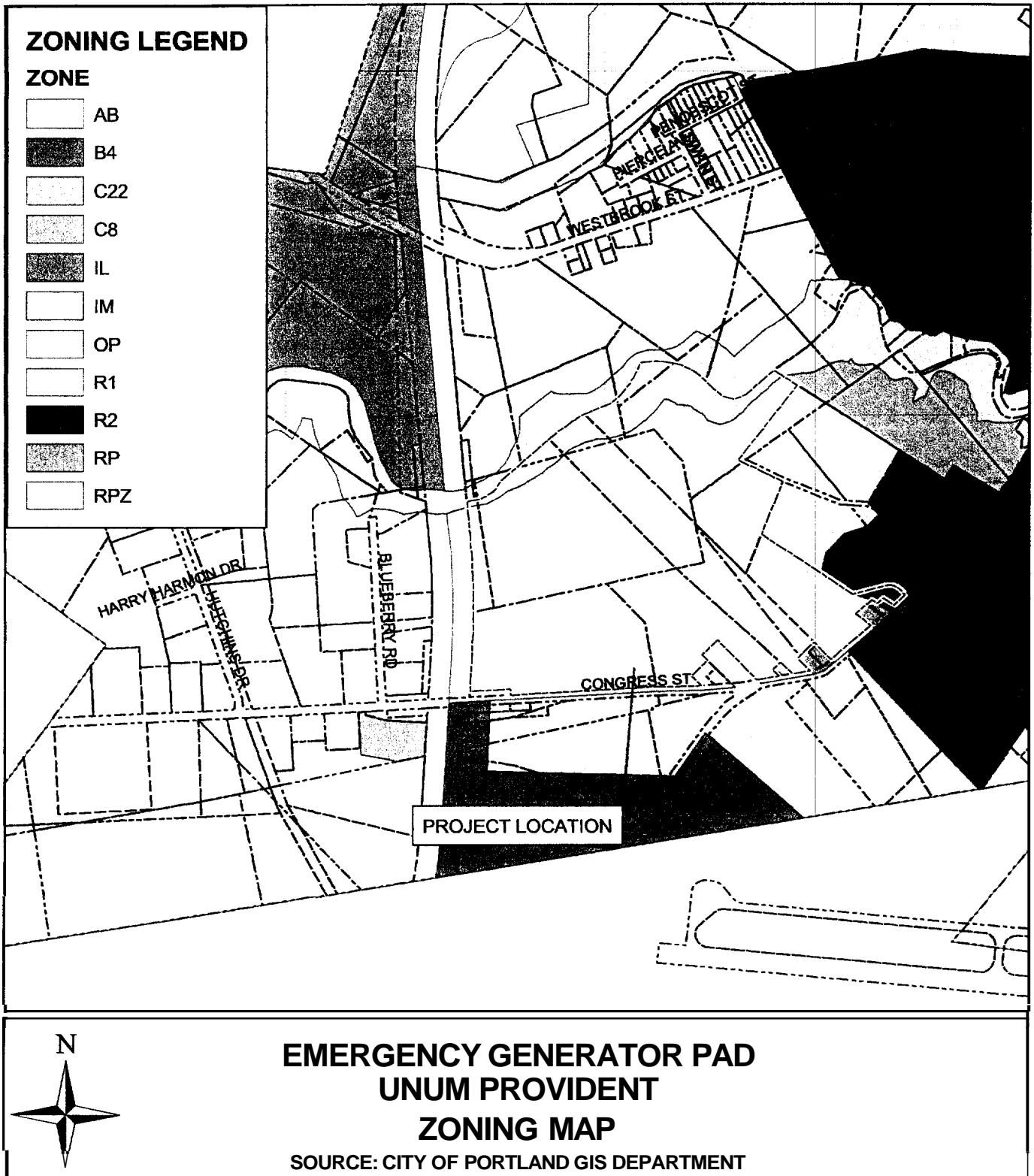



**EMERGENCY GENERATOR PAD  
UNUM PROVIDENT  
PROPERTY TAX MAP**  
 SOURCE: CITY OF PORTLAND GIS DEPARTMENT

DeLuca-Hoffman Associates, Inc.  
 778 MAIN STREET, SUITE 8  
 SOUTH PORTLAND, ME 04106  
 207-775-1121  
 www.delucahoffman.com

DRAWN: RJK  
 CHECKED: DDA  
 DATE: FEB. 2004  
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**FIGURE**  
**3**

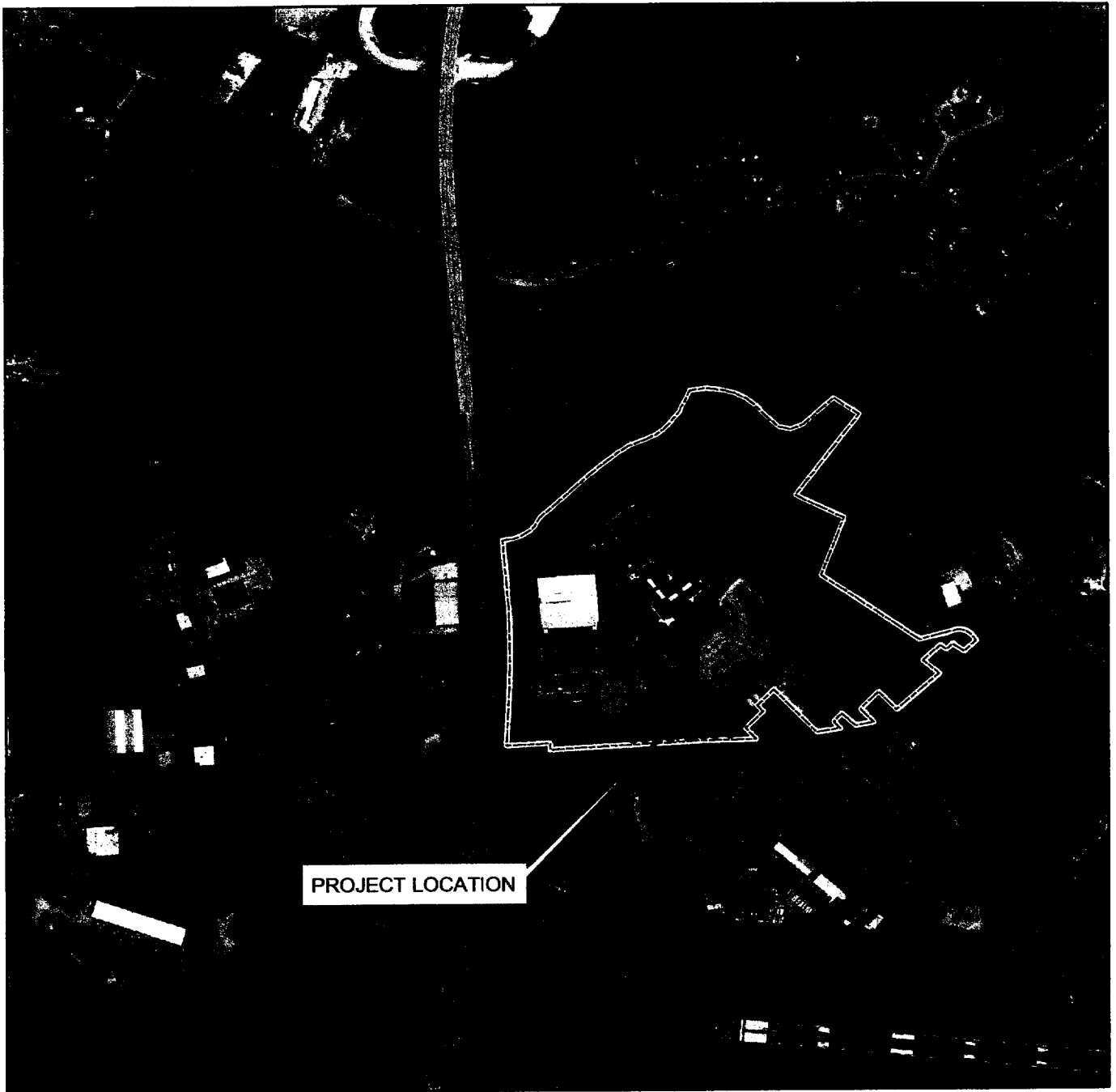


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 CHECKED: DDA  
 DATE: FEB. 2004  
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 SCALE: 1 inch equals 1,000 feet

FIGURE

4



PROJECT LOCATION



**EMERGENCY GENERATOR PAD  
UNUM PROVIDENT  
AERIAL PHOTOGRAPH**

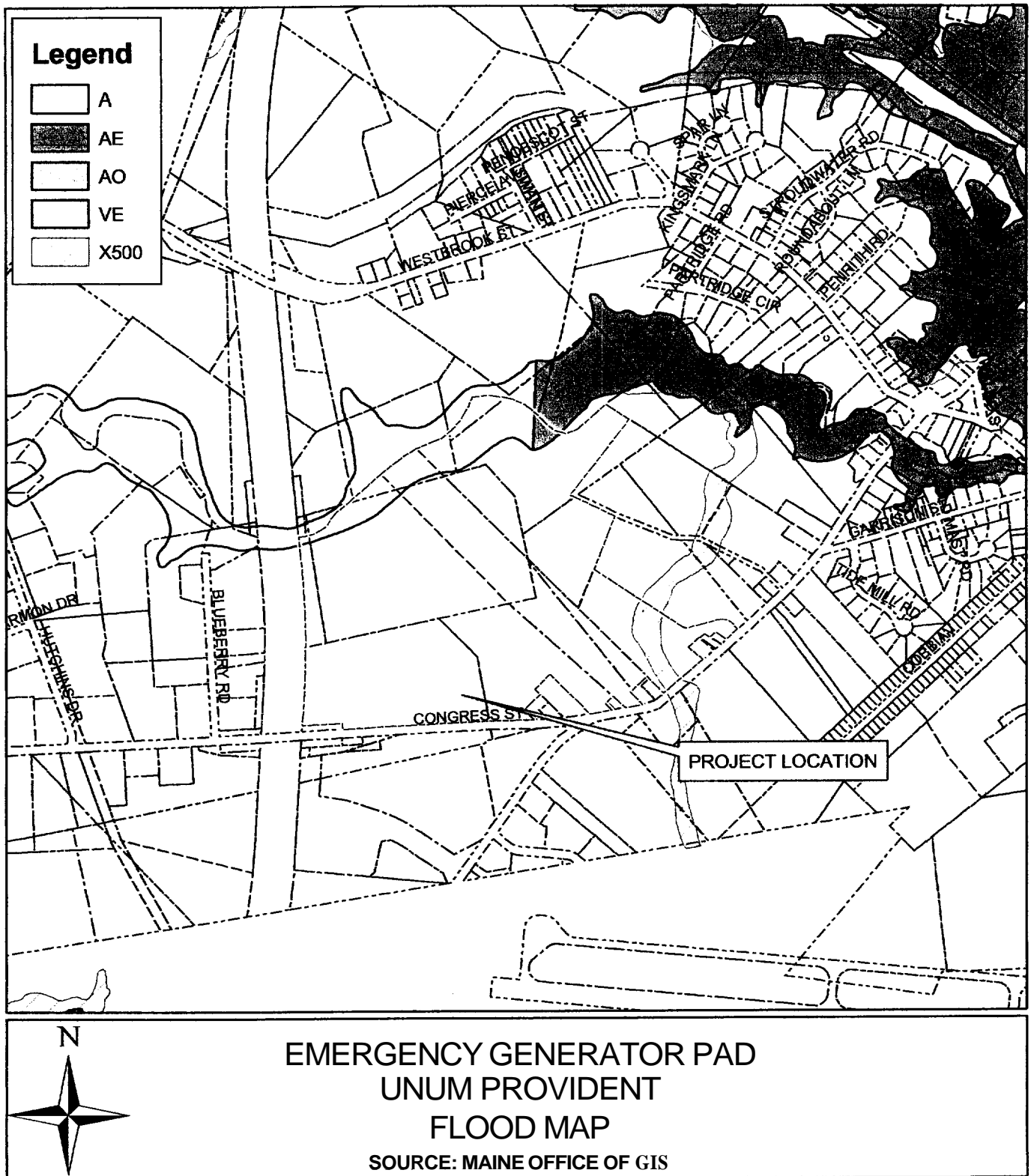
SOURCE: MAINE OFFICE OF GIS

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SOUTH PORTLAND, ME 04106  
207-775-1121  
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DRAWN: RJK  
CHECKED: DDA  
DATE: FEB. 2004  
FILENAME:  
SCALE: 1 inch equals 1,000 feet

FIGURE

5

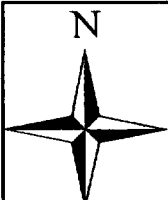
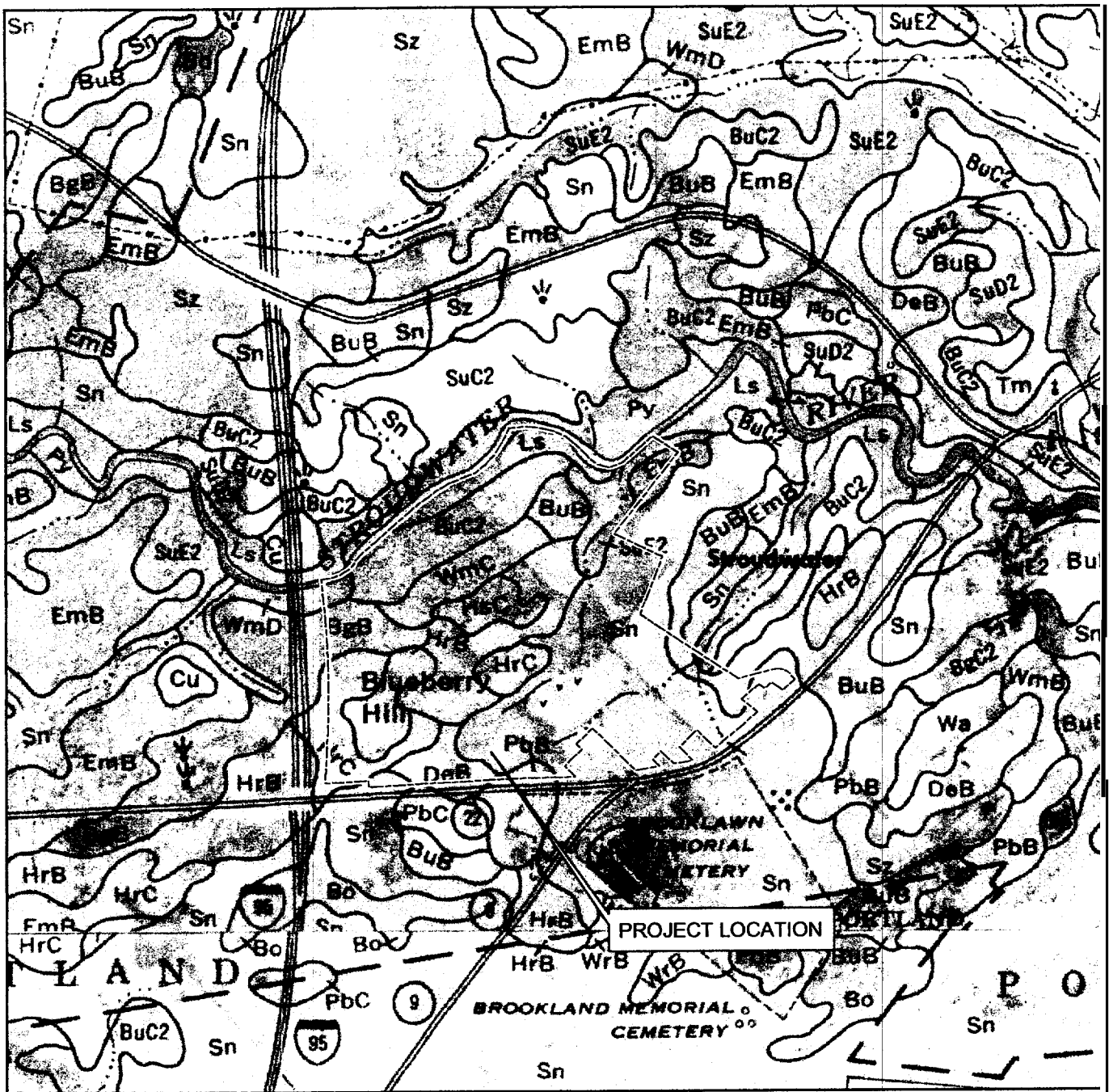


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 CHECKED: DDA  
 DATE: FEB. 2004  
 FILENAME: G:\2445-UNUMFIGURES\2445-FLOOD-FIG7.mxd  
 SCALE: 1 inch equals 1,000 feet

FIGURE

7



**EMERGENCY GENERATOR PAD  
UNUM PROVIDENT  
SOILS MAP**

SOURCE: MAINE OFFICE OF GIS

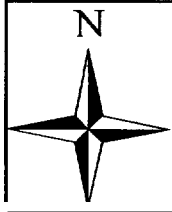
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DRAWN: RJK  
CHECKED: DDA  
DATE: FEB. 2004  
FILENAME: G:\2445-UNUMFIGURES\2445-SOILS-FIG8.mxd  
SCALE: 1 inch equals 1,000 feet

FIGURE

8





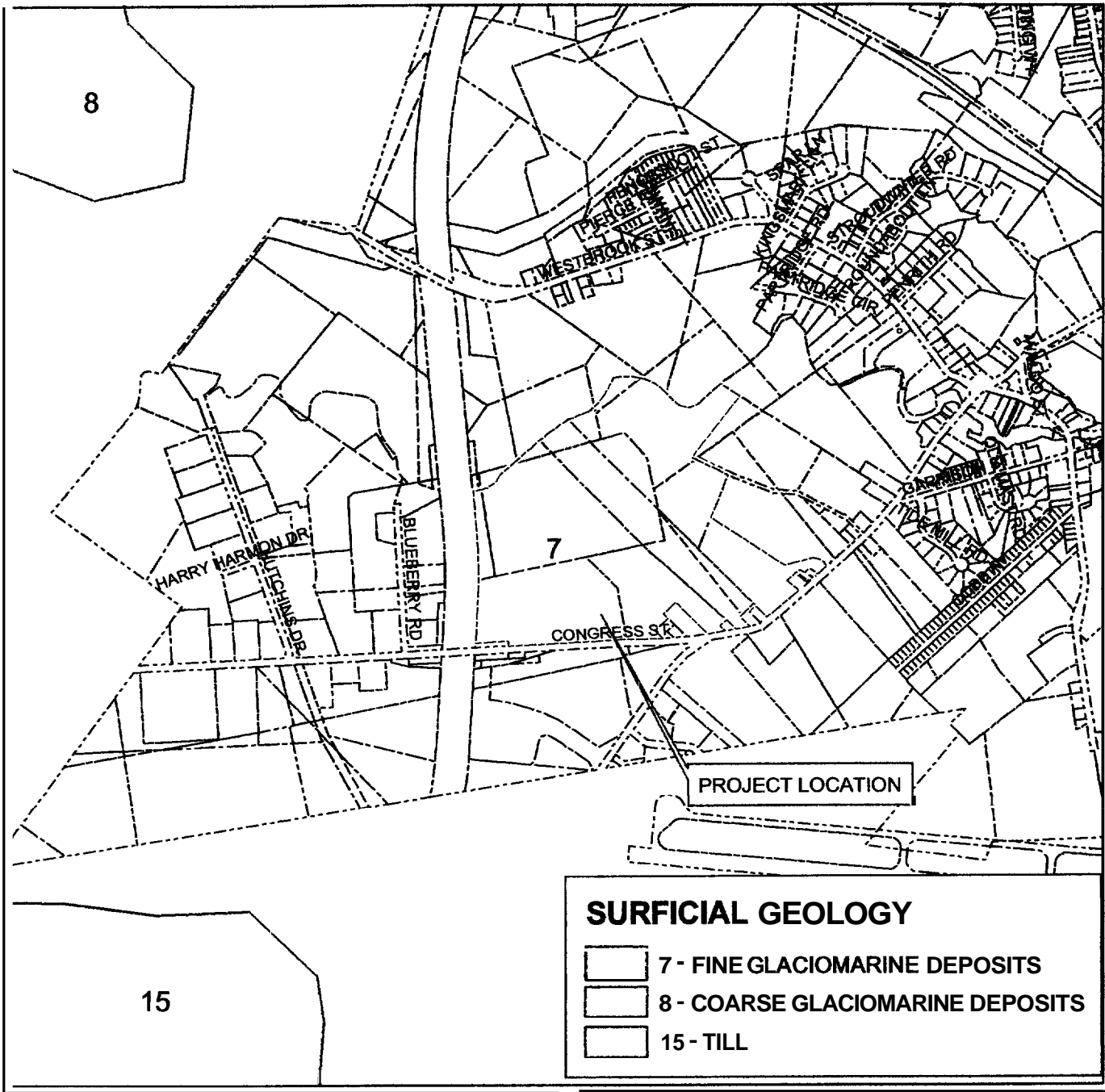
**EMERGENCY GENERATOR PAD  
UNUM PROVIDENT  
SAND & GRAVEL AQUIFER MAP**

SOURCE: MAINE OFFICE OF GIS

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DRAWN: RJK  
CHECKED: DDA  
DATE: FEB. 2004  
FILENAME: G:\2445-UNUMFIGURES\2445-AQFR-FIG9.mxd  
SCALE: 1/4 inch equals 1,000 feet

**FIGURE**  
**9**



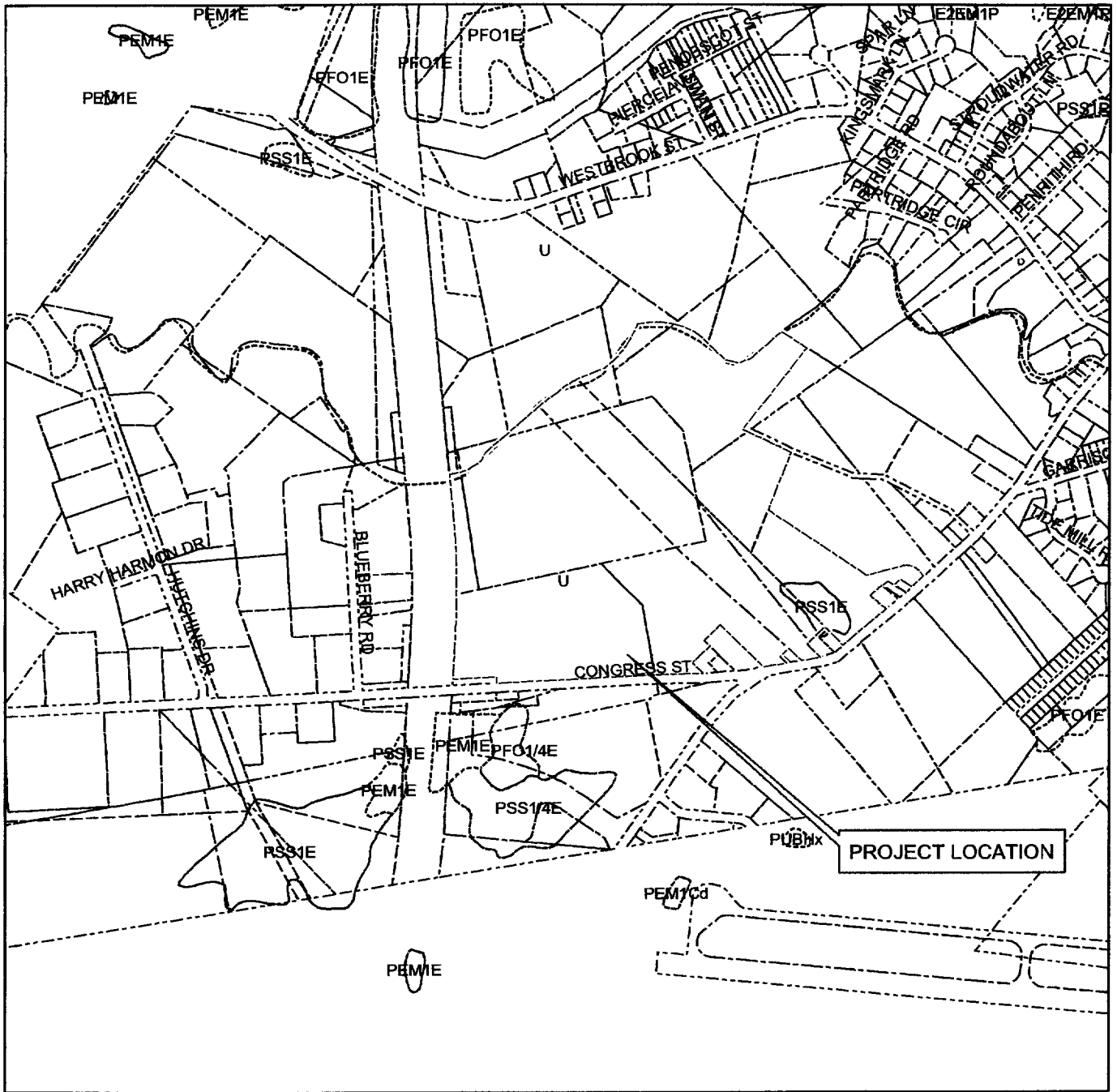
**EMERGENCY GENERATOR PAD  
UNUM PROVIDENT  
SURFICIAL GEOLOGY MAP**

SOURCE: MAINE OFFICE OF GIS

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DRAWN: RJK  
CHECKED: DDA  
DATE: FEB. 2004  
FILENAME: G:\2445-UNUMFIGURES\2445-SURFGEO-FIG10.mxd  
SCALE: 1 inch equals 1,333feet

**FIGURE  
10**




**ENERGY SUPPORT FACILITY  
UNUM PROVIDENT  
NATIONAL WETLANDS INVENTORY MAP**  
 SOURCE: MAINE OFFICE OF GIS

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DRAWN: RJK  
 CHECKED: DDA  
 DATE: FEB. 2004  
 FILENAME: G:\2445-UNUM\FIGURES\2445-NWI-FIG11.mxd  
 SCALE: 1 inch equals 1,000feet

**FIGURE**  
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