

DISPLAY THIS CARD ON PRINCIPAL FRONTAGE OF WORK

CITY OF PORTLAND

BUILDING INSPECTION

PERMIT

Permit Number: 041785

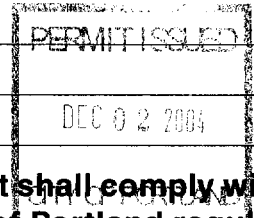
Please Read Application And Notes, If Any, Attached

This is to certify that City Of Portland/Ledgewood

has permission to Foundation only for the 70,000 sq.ft. East

AT 358 Eastern Promenade

008 A004001



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

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

Notification of inspection must be given and when permission proceeds before this building or part thereof is started or otherwise closed-in. 4 HOUR NOTIFICATION REQUIRED.

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

OTHER REQUIRED APPROVALS

Fire Dept. W/A
Health Dept. W/A
Appeal Board _____
Other _____
Department Name _____

[Signature]
Director - Building & Inspection Services
12/02/04

PENALTY FOR REMOVING THIS CARD

City of Portland, Maine - Building or Use Permit

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

Permit No: 04-1785	Date Applied For: 12/02/2004	CBL: 008 A004001
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Location of Construction: 358 Eastern Promenade	Owner Name: City Of Portland	Owner Address: 389 Congress St	Phone:
Business Name:	Contractor Name: Ledgewood Inc.	Contractor Address: PO Box 8107 Portland	Phone (207) 767-1866
Lessee/Buyer's Name	Phone:	Permit Type: Foundation Only/Commercial	

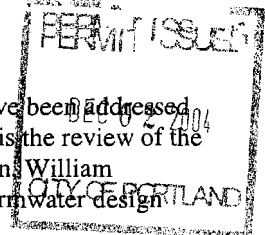
Proposed Use: Foundation only for the 70,000 sq.ft. East End School	Proposed Project Description: Foundation only for the 70,000 sq.ft. East End School
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Dept: Zoning **Status:** Approved **Reviewer:** Marge Schmuckal **Approval Date:** 07/21/2004
Note: **Ok to Issue:**
 1) Approved on permit #041016

Dept: Building **Status:** Approved with Conditions **Reviewer:** Mike Nugent **Approval Date:** 12/02/2004
Note: **Ok to Issue:**
 1) Special inspections pursuant to the Engineers notes on Page S.1R1 must occur as well as those specified in the Statement of Special Inspections.
 This statement is being amended by Pinkham and Greer and submitted for review and approval

Dept: Fire **Status:** Approved **Reviewer:** Lt. MacDougal **Approval Date:**
Note: **Ok to Issue:**
 1) Fire Dept. Approved on permit 041016
 All original conditions apply

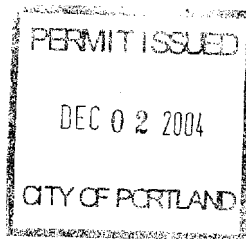
Dept: Engineering **Status:** Open **Reviewer:** Tony **Approval Date:**
Note: PUBLIC WORKS ENGINEERING REVIEW ...3/10/04 **Ok to Issue:**
 I have reviewed the application and plans and offer the following comments:
 1. Public Works will offer comment upon receipt of a more detailed and complete submittal.
 Public Works Review...4/14/04
 It appears that the majority of improvements, necessary and concerns of Public Works have been addressed in the application materials dated March 30, 2004. The one item that remains outstanding is the review of the drainage design. Those initial discussions and approvals were dealt with by David Peterson, William Goodwin and Katherine Earley of Public Works. Therefore, comment on the proposed storm water design will be provided by those individuals, under separate cover.



Dept: Fire **Status:** Approved **Reviewer:** Lt. MacDougal **Approval Date:** 03/09/2004
Note: **Ok to Issue:**

Dept: DRC **Status:** Approved with Conditions **Reviewer:** Sebago Technic **Approval Date:** 05/25/2004
Note: **Ok to Issue:**
) see conditions listed under planning from the Planning Board review.

Location of Construction: 358 Eastern Promenade	Owner Name: City Of Portland	Owner Address: 389 Congress St	Phone:
Business Name:	Contractor Name: Ledgewood Inc.	Contractor Address: PO Box 8107 Portland	Phone (207) 767-1866
Lessee/Buyer's Name	Phone:	Permit Type: Foundation Only/Commercial	



City of Portland, Maine - Building or Use Permit Application
 389 Congress Street, 04101 Tel: (207) 874-8703, Fax: (207) 874-8716

Permit No: 04-1785	Issue Date: 12/02/2004	CBL: 008 A004001
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Location of Construction: 358 Eastern Promenade	Owner Name: City Of Portland	Owner Address: 389 Congress St	Phone:
Business Name:	Contractor Name: Ledgewood Inc.	Contractor Address: 	Phone: 2077671866
Lessee/Buyer's Name	Phone:	Permit Type: Foundation Only/Commercial	Zone:

Use: Jack Jr. High	Proposed Use: Foundation only for the 70,000 sq.ft. East End School	Permit Fee:	Cost of Work:	CEO District:
Proposed Project Description: Foundation only for the 70,000 sq.ft. East End School		FIRE DEPT: <input type="checkbox"/> Approved <input type="checkbox"/> Denied NIA	INSPECTION: Use Group: FOUNDATION ONLY 12/2/04 [Signature]	
		Action: <input type="checkbox"/> Approved <input type="checkbox"/> Approved w/Conditions <input type="checkbox"/> Denied Signature: _____ Date: _____		

Permit Taken By: mjin	Date Applied For: 12/02/2004	Zoning Approval		
1. This permit application does not preclude the Applicant(s) from meeting applicable State and Federal Rules. 2. Building permits do not include plumbing, septic or electrical work. 3. 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..		Special Zone or Reviews <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"/> MMA <input type="checkbox"/> NIA Date: _____	Zoning Appeal <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: _____	Historic Preservation <input 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: _____

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

BUILDING PERMIT INSPECTION PROCEDURES

Please call 874-8703 or 874-8693 to schedule your inspections as agreed upon

Permits expire in 6 months, if the project is not started or ceases for 6 months.

The Owner or their designee is required to notify the inspections office for the following inspections and provide adequate notice. Notice must be called in **48-72** hours in advance in order to schedule an inspection:

By initializing at each inspection time, you are agreeing that you understand the inspection procedure and additional fees from a "Stop Work Order" and "Stop Work Order Release" will be incurred if the procedure is not followed as stated below.

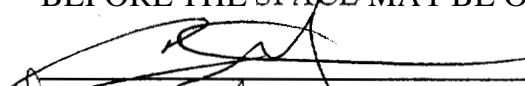
A Pre-construction Meeting will take place upon receipt of your building permit.

- Footing/Building Location Inspection: Prior to pouring concrete
- Re-Bar Schedule Inspection: Prior to pouring concrete
- Foundation Inspection: Prior to placing ANY backfill
- Framing/Rough Plumbing/Electrical: Prior to any insulating or drywalling
- Final/Certificate of Occupancy: Prior to any occupancy of the structure or use. NOTE: There is a \$75.00 fee per inspection at this point.

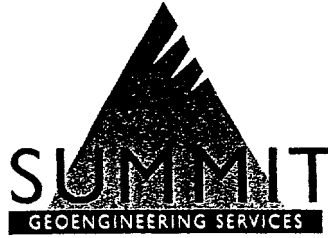
Certificate of Occupancy is not required for certain projects. Your inspector can advise you if your project requires a Certificate of Occupancy. All projects DO require a final inspection

OK If any of the inspections do not occur, the project cannot go on to the next phase, REGARDLESS OF THE NOTICE OR CIRCUMSTANCES.

CERIFICATE OF OCCUPANICES MUST BE ISSUED AND PAID FOR, BEFORE THE SPACE MAY BE OCCUPIED

 _____ Signature of Applicant/Designee	<u>12/2/04</u> _____ Date
<u>Donna Edwin Admin Asst.</u> _____ signature of Inspections' Official	<u>12 2 04</u> _____ Date

CBL: 8 A 004 Building Permit #: 041785



GEO TECHNICAL RECOMMENDATIONS REPORT

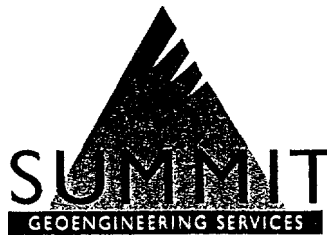
**PROPOSED EAST END SCHOOL
FORMER JACK ELEMENTARY SCHOOL
PORTLAND, MAINE**

Prepared for:

**DeLuca-Hoffman Associates, Inc.
778 Main Street, Suite 8
South Portland, Maine 04106**

Prepared by:

**Summit Geoengineering Services
Project 7760
January 16, 2004**



January 16, 2004
Summit #7760

DeLuca Hoffman Associates, Inc.
Attn: Mr. William G. Hoffman, P.E.
778 Main Street, Suite 8
South Portland, Maine 04106

Reference: Geotechnica! Report, East End Elementary School, Portland, Maine

Dear Mr. Hoffman:

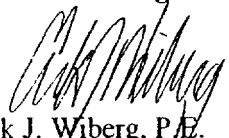
In accordance with our proposal dated September 2, 2003 and **as** authorized by letter dated November 11, 2003, we have prepared geotechnical recommendations in connection with the construction of the proposed East End School.

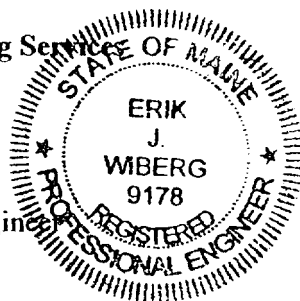
The **soil** encountered consists of topsoil and/or fill overlying native glacial till with cobbles and boulders. Groundwater was observed to within **two** feet of ground surface. Bedrock was not encountered in the explorations. The soil at this site **is** suitable to **support** the proposed building on conventional spread footing foundation and slabs-on-grade. Exterior perimeter foundation drains are recommended.

Our report also includes recommendations **for** the design and construction of the foundations, slabs-on-grades, pavement sections, the multipurpose field, and the stormwater management area.

We have appreciated providing geotechnical engineering services for this phase of the project. If there are any questions **or** we may be **of** further assistance, please do not hesitate to call.

Very Truly Yours,
Summit Geoengineering Services


Erik J. Wiberg, P.E.
Senior Geotechnical Engineer





William M. Peterlein, P.E.
Principal Geotechnical Engineer

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SECTION 1

INTRODUCTION

1.1 Introduction

The Portland School Department is planning to construct a new school building at the site of the former Jack Elementary School on North Street in Portland, Maine. As part of this planning, Summit Geoenneeng Services (Summit) **was** retained by DeLuca-Hoffman & Associates, Inc. to perform a geotechnical investigation for the proposed development and to prepare this report with earthwork, pavement and foundation design, and construction recommendations. This work was completed in accordance with our proposal dated September 2, 2003.

1.2 Scope of Services

Our scope of field services for the geotechnical investigation consisted of drilling 7 soil borings, installing two groundwater observation wells, and obtaining 6 topsoil samples from the existing ballfield to evaluate loam quality. The primary intent of our investigation was to develop subsurface information for design and construction of the building foundations, pavement sections, stormwater management areas, and earthwork. This work was performed in its entirety as proposed.

1.3 Hazardous Waste Disclaimer

The scope of our work on this project does not include **an** environmental assessment or investigation into the presence or absence of contaminated soil or groundwater. Summit did not identify evidence of a release of hazardous substances **and/or** petroleum products at the exploration locations. **Any** comments regarding the nature and composition of the subsurface materials discovered are presented for informational purposes **only**.

north end of the parking are to about 2 feet above grade at the south end. Proposed grades in the ball field area are generally about 2 feet below current site grades.

Pinkham & Greer Consulting Engineers, Inc., the project structural engineering consultant, provided structural loading information to Summit. The exterior column loads will range from 20 kips to 83 kips and interior column loads will range from 20 kips to 103 kips in the classroom wing; approximately 43 percent of the maximum column loads is attributed to dead loads. For the gymnasium portion of the school, the interior column loads will range from 40 kips to 90 kips and exterior column loads will range from 20 kips to 60 kips with dead loads constituting approximately 21 percent of the maximum column load. Exterior school wall loads will be 100 percent dead loads ranging from 625 to 900 pounds per linear foot. Exterior wall spread footings associated with the column loads will be constructed integral with the exterior wall footings. Column spacings in the school will range from 10 to 36 feet.

The area of the seasonally flooded skating pond on the south side of North Street will be the site of the project stormwater detention area. Two options are under consideration for the stormwater detention: above-grade detention and subsurface detention chambers. If above-grade detention is used, the total and ponded depth relative to the existing skating pond will be about three feet lower. The pond would be designed as a dry pond. If subsurface detention were used, the structures would be located about 6 feet below existing grade.

The existing school recreation fields on the south side of the Jack Elementary School will be reconfigured as part of the project. The new multipurpose field will be used for adult softball for approximately 900 hours per year and the field will also be used for school recess activities. The multipurpose field turf system will need to be upgraded to accommodate the more intense and frequent uses relative to the current facility.

As part of site development, the existing Jack Elementary School building will be demolished. We understand that the School Department would like to process demolished brick, concrete, and masonry and reuse this material onsite as fill.

at B7, which was drilled through the skating area berm. A summary of the exploration methods and logs of the explorations are attached. The stratification lines on the logs represent approximate boundaries between soil types and the transitions may be more gradual than implied.

Groundwater observation well OW1 was installed in borehole B4 and observation well OW2 was installed in the middle of the skating area. The observation well sand pack zone of OW1 extends from 4 to 19 feet below ground surfaces. The sand pack of OW2 is located from 7 to 14 feet below ground surface. Well construction details are provided on the logs in Appendix B-

Hand auguring was used to collect topsoil samples and measure the total topsoil thickness at six locations within the existing multipurpose field. The topsoil samples were evaluated in laboratories for nutrient content and soil gradation.

Owen Haskell, Inc. horizontally and vertically surveyed ground surface at the exploration locations, except for boring B4. The location of B4 and the six topsoil hand auger locations were established by Summit by measurement from onsite features.

SECTION 4 LABORATORY TESTING

Laboratory tests were performed on the topsoil hand auger samples and on selected split spoon samples. Topsoil samples were analyzed for soil pH and soil nutrients by Maine Soil Testing Service at the University of Maine in Orono. Subsamples of the topsoil and split-spoon soil samples were tested by Summit for soil gradation. The results of the laboratory tests are summarized on Table C-1 in Appendix C. Sample data sheets are also provided in Appendix C. Data from the split-spoon samples is provided on the soil boring logs.

gravelly sand with silt. Approximately 12 inches of gravelly sand pavement base material was encountered beneath the bituminous pavement at boring B4.

Near surface soils encountered in the borings drilled near the school building were similar in texture to the underlying native glacial till but generally less dense and could have been placed as fill during original site development. This soil was not readily distinguishable in the split-spoon samples from the underlying glacial till. The SPTN-Value in the near surface soils ranged from 6 to 18 blows per foot (bpf), which corresponds to compact soil conditions.

Glacial till was encountered at all boring locations and typically consisted of olive-brown to olive-gray, silty sand to sandy silt with little gravel. Cobbles and/or boulders were also present in the glacial till. SPTN-Values in the glacial till below a depth of 4 feet ranged from 22 to 88 blows per foot and indicated compact to very dense soil conditions and/or the presence of cobbles and boulders. Gradation tests were conducted on two split spoon samples: sample S2 from 4.5 to 6.5 feet at B4 and sample S3 from 9.5 to 11 feet at B2. The test results are summarized adjacent to the sample locations on the boring logs and gradation curves are presented in Appendix C.

5.2 Bedrock

Bedrock was not encountered in the borings.

5.3 Groundwater.

Groundwater levels were measured in the two observation wells installed at the site approximately 48 to 72 hours after installation and about approximately 2-1/2 weeks after installation. Groundwater levels were measured in borehole B1 approximately 6 and 24-hours after drilling. The groundwater levels were not determined at other boring locations due to slow groundwater recovery rates in the dense, silty soils. The water levels are summarized below:

SECTION 7
FOUNDATION AND EARTHWORK RECOMMENDATIONS

7.1 Building Foundation Design Recommendations

A. Foundation Type. Based on proposed finish floor elevation between elevation 115 and 116 feet, the footings and slabs will be constructed on compacted Gravel Borrow fill (Section 7.1.F) or recompacted in-situ glacial till. These materials are suitable to support the proposed school building foundations using conventional spread footing foundations and the slabs-on-grade.

B. Allowable Bearing Pressures. We recommend that the footings constructed for the proposed building be proportioned using an allowable bearing pressure of 3,000 psf at all locations. The computed *maximum* settlement associated with this allowable bearing pressure is approximately 3/4-inch. Computed differential settlements are within tolerable limits for the proposed brick veneer exterior finish and interior column spacings of 10 feet or more. The computed factor of safety against bearing capacity failure is greater than 3.

The allowable bearing pressure and the associated settlements are based on the following assumptions:

- All components of existing concrete slabs and foundation elements of existing buildings and associated construction debris are removed from within the proposed building footprint. Exposed soil is proofrolled and the excavations are backfilled with approved granular backfill.
- For areas outside the existing Jack Elementary School footprint, exposed soil is proofrolled and the excavations are backfilled with approved granular backfill.
- All topsoil and organic material is removed from within the building areas prior to proof-rolling or the placement of fill.
- The native soil and fill soil exposed at foundation subgrade are compacted prior to constructing footings.

placed in 9 to 12-inch thick lifts. Where hand compaction equipment is used, the lift thickness should be reduced to 6 to 8 inches.

The glacial till soils encountered in the explorations are not suitable for use as Foundation Backfill due to the excessive amount of silt and clay size particles (the portion passing the No. 200 sieve size). It is our professional opinion that the glacial till soil cannot be economically processed onsite to meet the above gradation criteria.

Evaluation of the base gravel beneath existing paved and building areas is beyond the scope of the current evaluation. Depending on the materials used in construction and their handling during demolition, it is possible that the base material beneath the existing paved areas and the building slab will meet the gradation requirements for Foundation Backfill (and possibly Structural Fill or Gravel Borrow, see Section 7.1.F below). If reuse of these materials is proposed during construction, they should be tested for compatibility with their intended use.

D. Foundation Drainage. The groundwater levels measured in observation well OW1 and in open borehole B1 were above the projected bottom of foundations at these locations (approximately elevation 106 feet and 111.0, respectively) and we anticipate that the depth to groundwater is similar in other areas. If foundation drains are not provided, groundwater could rise above the bottom of the foundation footings and potentially above the slab in the southwest portion of the building where proposed finish floor level is about 5 feet below existing grade.

We recommend that foundation underdrains be installed at the base of the perimeter foundation footings on all sides of the school. The finish grade around the perimeter of the building should be sloped to promote drainage away from the foundations.

Perimeter foundation underdrains should consist of 4 inch rigid perforated PVC surrounded by a minimum of 6 inches of crushed stone wrapped in filter fabric to prevent clogging from the migration of the fine soil particles in the foundation backfill soils. The underdrain pipe should be outlet to a location where it will be free flowing. Where exposed at the ground surface, the

perimeter frost wall footings with the **bottom** of footings located a **minimum** of **4** feet below finish grade.

Fill, where required beneath the Structural Fill, should consist of Gravel Borrow (MDOT 703.20). The Gravel Borrow should extend a **minimum** of 5 feet horizontally outside the proposed building limits at finish grade with side slopes at 2H:1V or flatter. The portion of Gravel Borrow soil passing the 3-inch sieve should meet the following specification.

GRAVEL BORROW	
Sieve Size	Percent finer
3 inch	100
¼ inch	0 to 70
No. 200	0 to 10

Reference: MDOT Specification 703.20, Gravel Borrow. The **maximum** particle size is 6 inches.

Gravel Borrow should be placed in a **maximum** of 12-inch lifts, **and** should be compacted to 95 percent, in accordance with ASTM D1557.

Slabs constructed on 12 inches of Structural Fill directly overlying proof-rolled glacial till soil or less than 2 feet of compacted Gravel Borrow can be designed using a subgrade modulus value of 200 pci. Slabs constructed on 12 inches of Structural Fill and over more than 2 feet of compacted Gravel Borrow can be designed **using a** subgrade modulus **of** 225 pci.

The glacial till soils encountered in the explorations are **not** suitable for use **as** Structural Fill or as Gravel Borrow due to the excessive amount of silt and clays size particles..

Depending on the materials used in construction and their handling during demolition, it is possible that the gravel base material and fill beneath the existing building slab will meet the gradation requirements for Structural Fill **and/or** Gravel Borrow. If reuse of these materials is proposed during construction, they should be tested for compatibility **with** their intended use.

The mean annual freezing index for the Portland area is approximately 900 degree-days with a corresponding mean annual frost penetration depth of about 36 inches for the glacial till soils at the site. The glacial till soils at the site are highly frost susceptible due to the significant percentage of silt and clay in the soil. With respect to frost penetration, we recommend a minimum pavement section consist of 60% percent of the mean annual frost penetration depth, or 22 inches.

Design pavement sections based on vehicle type and design traffic counts provided by DeLuca-Hoffman Associates, Inc. were determined using the American Association of State Highway Official (AASHTO) "Guide for Design of Pavement". Vehicles traveling at low speeds will use the onsite pavement areas. Pavement design section calculations are provided in Appendix D. We recommend that following design pavement sections:

Material	Minimum Thickness (In)			Material Specification
	Bus Loop	Service Drive	Parking Lot	
Asphalt Surface Coarse	1.5	1	1	MDOT 703.09, 9.5 mm
Asphalt Binder Coarse	2.5	2	2	MDOT 703.09 19.5 mm
Base Soil	3	3	3	MDOT 703.06 Type A
Subbase Soil	18	18	16	MDOT 703.06 Type D

The material specifications are referenced to the State of Maine Department of Transportation Standard Specifications, Revision of December 2002.

All public roadways or paved areas to be maintained or accepted by the City of Portland should be constructed in accordance with City of Portland design standards. City of Portland Design Standards (March 2000) for collector streets, which we understand North Street is considered, require a total section thickness of 25 inches (4 inches of asphalt pavement and 21 inches of base and subbase soil).