Form# P04

DISPLAY THIS CARD ON PRINCIPAL FRONTAGE OF WORK

CITY OF PORTLAND

B... ...ECTION

PERM...

Please Read Application And Notes, If Any, Attached

Permit Number: 060114

PERMIT ISSUED
JAN 2 5 2006
CITY OF PORTLAND

This is to certify that SHALOM HOUSE INC /TE...

has permission to FOUNDATION ONLY con...ed w/ p...it #0...3

AT 98 GILMAN ST ... 065 D003001

provided that the person or persons ...rm or ...tion ...epting this permit shall comply with all of the provisions of the Statutes of ...ine and of the ...ances of the City of Portland regulating the construction, maintenance and ... of buildings and ...ctures, 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.

N...ficatio... ...f inspe...n mus...e g...n and w...en permi...on procu...d b...re this ...lding or ...rt there...s l...ed or ...osed-in. ...4 H...UR NOT... ...REQUIRED.

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

OTHER REQUIRED APPROVALS

Fire Dept See # 051773

Health Dept. ______

Appeal Board ______

Other ______

Department Name

1/25/06

Director - Building & Inspection Services

PENALTY FOR REMOVING THIS CARD

Permit 06-0114

JAN 2 5 2006

CITY OF PORTLAND

Location of Construction:	Owner Name:	Owner Address:	Phone:
98 GILMAN ST	SHALOM HOUSE INC	PO BOX 560	
Business Name:	**Contractor Name:**	**Contractor Address:**	**Phone**
	TBD		
Lessee/Buyer's Name	**Phone:**	**Permit Type:** Foundation Only/Commercial	**Zone:**
Past Use: Vacant Land	**Proposed Use:** 24 Unit apartment/ FOUNDATION ONLY connected w/ permit #051773	**Permit Fee:**	**Cost of Work:** $0.00
		CEO District: 2	

Proposed Project Description:
FOUNDATION ONLY connected w/ permit #051773

FIRE DEPT: ☐ Approved ☐ Denied

SEE #051773

Signature:

INSPECTION:
Use Group: PILINGS & FOUNDATION ONLY Type:

Signature: 1/25/06

PEDESTRIAN ACTIVITIES DISTRICT (P.A.D.)

Action: ☐ Approved ☐ Approved w/Conditions ☐ Denied

Signature Date

Permit Taken By:	Date Applied For:
ldobson	01/25/2006

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..

Zoning Approval

Special Zone or Reviews	Zoning Appeal	Historic Preservation
☐ Shoreland	☐ Variance	☐ Not in District or Landmark
☐ Wetland	☐ Miscellaneous	☐ Does Not Require Review
☐ Flood Zone	☐ Conditional Use	☐ Requires Review
☐ Subdivision	☐ Interpretation	☐ Approved
☐ Site Plan	☐ Approved	☐ Approved w/Conditions
Maj ☐ Minor ☐ MM ☐	☐ Denied	☐ Denied
Date: SEE 051773	Date:	Date:

CERTIFICATION

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

SIGNATURE OF APPLICANT ADDRESS DATE PHONE

RESPONSIBLE PERSON IN CHARGE OF WORK, TITLE DATE PHONE

LEDGEWOOD CONSTRUCTION

Ledgewood Construction
P. O. Box 8107
Portland, ME 04104
Ph : (207)767-1866
Fax: (207)767-1869

Submittal Cover Sheet

Job: 06532
Valley Street Apartments
Gilman Street
Portland, ME 04202

Spec Section No: 02459
Submittal No: 1
Revision No: 0
Sent Date: 1/23/2006

Spec Section Title:

Submittal Title: Timber Piles - Shop Drawings/ Manufacturers Product Info

Contractor:
Ledgewood Construction
Clint Gendreau

Contractor's Stamp

Reviewed for general acceptance and compliance with contract documents. The subcontractor is responsible for all dimensions, correct fabrication and accurate fit with the work of other trades.

Ledgewood, Inc.

By CEG Date 1/23/06

Submittal Number

Archetype, **P.A.**
John Shields

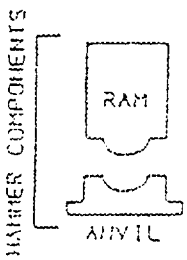
Architect's Stamp

Engineer's Stamp

H. B. FLEMING
Contracting • Engineering
SO. PORTLAND, ME.

Project: Valley Street
Location: Portland, ME

HAMMER



MANUFACTURER: MKT MODEL: ~~DE-30~~ DA-35C
TYPE: Single Acting SERIAL NO.:
RATED ENERGY: 16 800 ft-lb AT 8' LENGTH OF STROKE
MODIFICATIONS: see attached cut sheets

HAMMER CUSHION

MATERIAL: Monocast MC 901
THICKNESS: 2" AREA: 283 in²
MODULUS OF ELASTICITY (E): 285 (P.S.I.)
COEFFICIENT OF RESTITUTION (e): .8

DRIVE HEAD

HELMET / BONNET / ANVIL BLOCK / PILE CAP — WEIGHT: 900 lb.

PILE CUSHION

CUSHION MATERIAL: N/A
THICKNESS:
MODULUS OF ELASTICITY (E): (P.S.I.)
COEFFICIENT OF RESTITUTION (e):

PILE

PILE TYPE: Southern Yellow Pine
LENGTH (IN LEADS) = 70 feet
WEIGHT/FT.:
WALL THICKNESS: TAPER:
CROSS SECTIONAL AREA: (SQ. IN.)
DESIGN PILE CAPACITY: 25 Ton (TONS)
DESCRIPTION OF SPLICE: N/A
TIP TREATMENT DESCRIPTION: None

NOTE: IF MANDREL IS USED TO DRIVE THE PILE, ATTACH SEPARATE MANUFACTURER'S DETAIL SHEET(S) INCLUDING WEIGHT AND DIMENSIONS.

SUBMITTED BY: Dean Swasey DATE: 1/23/06

RECEIVED

FIGURE 2.5 PILE AND DRIVING EQUIPMENT DATA FORM

LEDGEWOOD CONSTRUCTION

NEW!

MKT®

DE-33/30B/20B, DE-70B/50B, DE-110
SINGLE ACTING DIESEL PILE HAMMERS

GE-33

The interchangeable ram size design (patent pending) is another first for MKT diesel pile hammer engineers. Conceived to reduce equipment investment costs, this exclusive feature allows for the use of three different ram sizes with the DE-33 and two different ram sizes with the DE-70B cylinders.

These pile hammer models offer the owner an opportunity to reduce total equipment investment costs. The DE70B/DE50B can be fitted with either a 7,000-lb. or a 5,000-lb. ram to deliver 42,000 to 59,500 or 30,000 to 42,500 ft. lbs. per blow respectively. The new DE-33 can use three alternate ram weights: a 3,300-lb. ram delivering 19,800 to 28,050 ft. lbs. per blow; a 2,800-lb. ram delivering 16,800 to 23,800 ft. lbs. per blow, or a 2,000-lb. ram delivering 12,000 to 17,000 ft. lbs. per blow.

DE-110

For longer and heavier piles to be driven to bearing loads to 500+ tons, the model DE-110 single acting diesel hammer is another new addition to the MKT diesel pile hammer line. With an 11,000-lb. ram, delivering from 66,000 to 93,500 ft. lbs., 40 to 50 times a minute, the DE-110 includes all the time and money saving features of the smaller MKT single acting diesel hammers: single lift/start line; built-in automatic point lube system; rigid structural beam construction; easy adaptability to American box, H-beam spud or European pipe leads, and weighs but 27,000 lbs. with drive cap.

SPECIFICATIONS		DE-20B	DE-33/30B/20B DE-30B	DE-33	DE-70B/50B DE-50B	DE-70B	DE-110
MFR'S APPLICABLE ENERGY RATING	(ft-lbs)	12,000-17,000	16,800-23,800	19,800-28,050	30,000-42,500	42,000-59,500	66,000-93,500
	(kg-m)	1,660-2,351	2,323-3,292	2,738-3,879	4,149-5,878	5,809-8,229	9,128-12,931
STROKES PER MINUTE		40-50	40-50	40-50	40-50	40-50	40-50
MAX. ACHIEVABLE OPERATING STROKE	(ft)	[illegible]	10	[illegible]	[illegible]	[illegible]	[illegible]
	(m)	[illegible]	[illegible]	[illegible]	3.2	[illegible]	3.2
FUEL CONSUMPTION HR. AVG.	(gal)	[illegible]	2.0	2.0	3.3	3.3	5.7
	(l)	7.6	7.6	7.6	12.5	12.5	21.5
WEIGHT OF RAM	(lbs)	2000	2800	3300	5000	7000	11,000
	(kg)	907	1,270	1,494	2,268	3,175	4,990
FUEL TANK CAPACITY	(gal)	13	13	13	22	22	28
	(l)	49.2	49.2	49.2	83.3	83.3	106
LUBE TANK CAPACITY	(gal)	3.5	3.5	3.5	10	10	7.5
	(l)	13.2	13.2	13.2	38	38	28
LENGTH OVERALL WITH DRIVE CAP	(ft)	15'-10½"	15'-10½"	15'-10½"	16'-11"	16'-11"	17'-10½"
	(mm)	4,845	4,845	4,845	5,156	5,156	5,448
NET WEIGHT	(lbs)	6,450	7,250	7,750	12,700	14,700	24,500
	(kg)	[illegible]	3,284	3,515	5,753	6,659	11,113
SHIPPING WEIGHT WITH DRIVE CAP	(lbs)	7,750	8,550	9,050	14,550	16,550	27,150
	(kg)	3,515	3,878	5,100	6,600	7,507	12,315

DISTRIBUTED BY:

MKT GEOTECHNICAL SYSTEMS

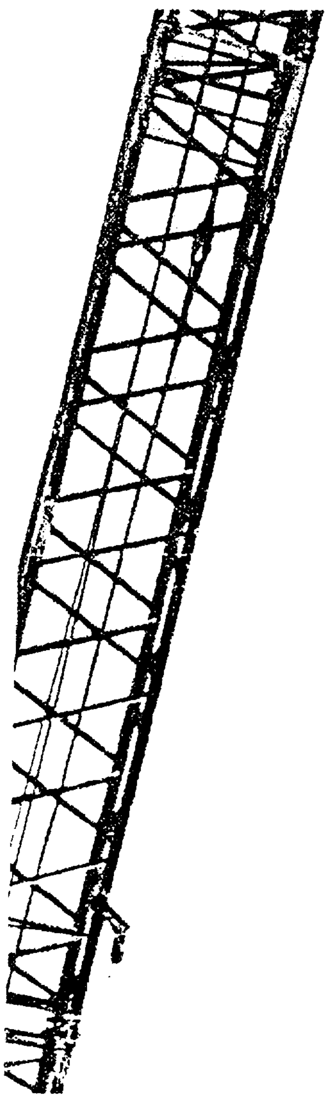
BOX 793, DOVER, NJ 07801

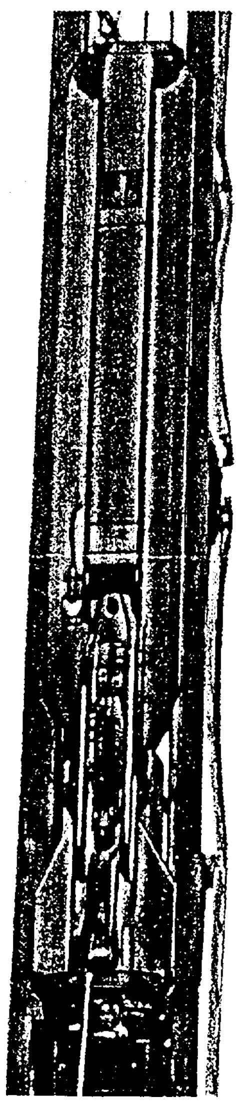
MKT® DA-35C & DA-55B

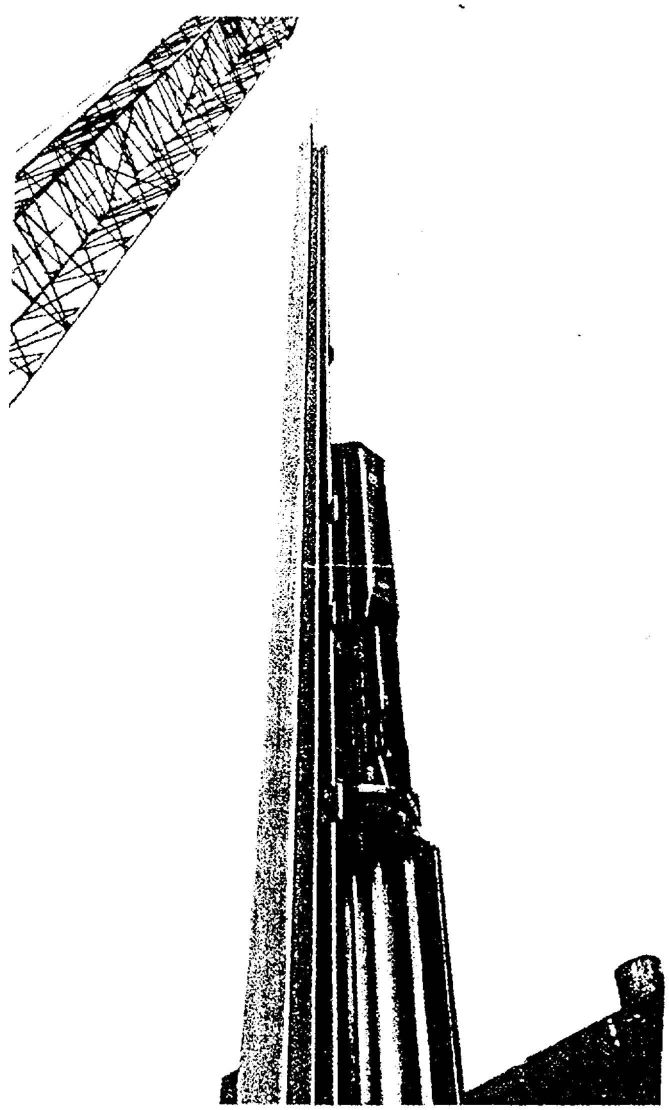
convertible diesel pile hammers

MKT-12772, SPECIFICATION CORRECTIONS
At reference herein to "average ram stroke of from 6 to 9 feet," read "from 6 to 8½ feet."
At chart, "Example: for the DA35C," for "point where the 70," read "point where the 65."

• WE LEAD!







HIGH PILE PRODUCTIVITY

...through choice of high or low frequency blows

on the anvil, drive *cap* and **pile.** Next, the ram-piston strikes the anvil which transmits the impact. energy *to* the pile.

The ball-pointed ram-pistvn mates perfectly with the anvil's cup, displacing the liquid fuel at the moment of impact to achieve perfect timing. The fuel is **splashed** into the annular zone around the ram-point **and** anvil where it ignites on contact mitt: the hot, high-pressure air.

The resultant explosive force drives the ram-piston upward and the pile downward.

The **pile** is subjected to a prolonged downward force by the three-stage blow: pre-loading force, impact energy, and explosive force. This also reduces **pile** head deformation because the anvil and drive cap are forced against the **pile** for a longer period.

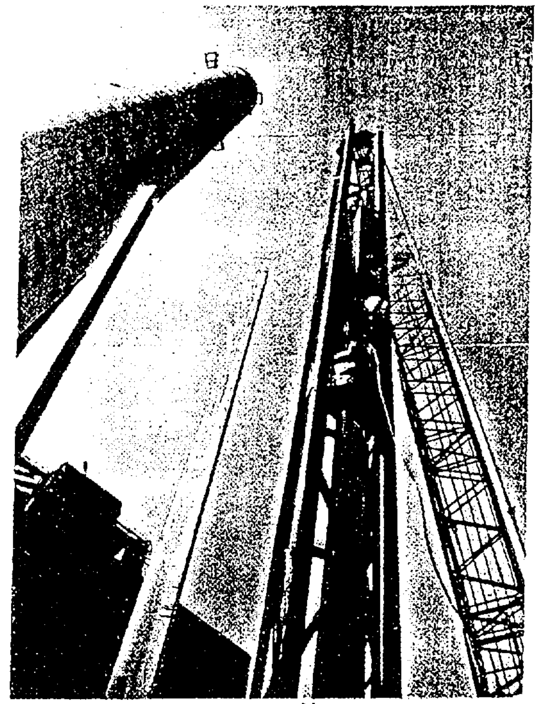
The impact of the ram on the **anvil** block activates **the** inertia type lube pump, forcing oil directly to six critical point:: in the cylinder.

On the up-stroke, the ram-piston opens exhaust ports (F) to discharge exhaust gases. It continues freely upward until stopped by compression **developed** in the bounce chamber (X).

Having reached the top of *its* stroke, the ram-piston descends again, repenting the cycle. Hammer operation is stopped **by** pulling rope (G), disengaging **fuel pump** cam (D).

diesel hammer selection

Empirical pile driving criteria suggest that: 1, a diesel hammer chosen for a specified job should have a rani weight to pile weight ratio of no more than 1:4; and 2, *the* specified pile load bearing, to be determined from a static load bearing formula, should be reached 3t a pile penetration rate of from 8 to 14 blows to the inch. In most cases, with these criteria met, it **will** be found that the applied energy rating of the diesel hammer selected will be equal *to* the hammer's rani weight times its average rani stroke of from 6 to 9 ieet at specified pile refusal for equivalent stroke for "double-acting" diesel hammers).



DA 35C

SPECIFICATIONS	DA-35C		[illegible]	
	[illegible]	[illegible]	[illegible]	[illegible]
*Mfr's. applicable energy rating (ft. lbs.)	15,600 at 35 psi to 21,000 at 65 psi	16,800 to 23,800	31,200 at 50 psi to 36,200 at 80 psi	30,000 to 42,500
**Speed (strokes/min. avg.)			78 to 82	40 to 50
Fuel consumption (gal./hr. avg.)	2.7	1.7	3.0	2.7
Wgt. **of** ram-piston (lbs.)	2,800		5,000	
Fuel tank capacity (gals.)	18		30	
Lube tank capacity (gals.)	11		10	
Length **overall** w/drive cap (ft.)	17		17'4"	
Net weight (lbs.)	10,800		17,000	
Ship. wt. with univ. drive **sap** (lbs.)	12,300		18,800	

*See "**diesel** hammer **selection**". at left.
Blows **per minute will vary inversely **with length** of stroke.

Soils and Foundations

Item	Req'd Y/N	Agency # (Qualif.)	Scope
1. Shallow Foundations	*Y*	*2*	*Inspect soils below slab-on-grade and stair foundation areas for adequate bearing capacity and consistency with geotechnical report.* *Inspect removal of unsuitable material and preparation of subgrade prior to placement of controlled fill*
2. Controlled Structural Fill	*Y*	*3*	*Perform sieve tests (ASTM D422 & D1140) and modified Proctor tests (ASTM D1557) of each source of fill material.* *Inspect placement, lift thickness and compaction of controlled fill.* *Verify extent and slope of fill placement.*
3. **Deep** Foundations	*Y*	2	*Inspect and log pile driving operations. Record pile driving resistance and verify compliance with driving criteria.* *Inspect piles for damage from driving and plumbness.* *Verify pile size, length and accessories.*
4. **Load** Testing			
4. Other:			

sebagotechnics.com

One Chabot Street
P.O. Box 1339
Westbrook, Maine
04098-1339
Ph. 207-856-0277
Fax 856-2206

July 27, 2005
Revised November 9, 2005
04040

Mr. William Floyd
Shalom House
P.O. Box 560
Portland, ME 04112-0560

Report on Subsurface and Foundation Investigation
Proposed Apartments and House, Valley Street, Portland, Maine

Dear Mr. Floyd:

This report presents the results of our subsurface and foundation investigation for the proposed apartment building and house on Valley Street in Portland. We provided these services in accordance with our proposal dated May 31, 2005.

In summary, it is our opinion that the apartment building and house may be supported on treated timber piles. In addition, a slab-on-grade may be used for the lowest ground floor. Specific recommendations regarding subsurface conditions and foundation requirements are presented below.

Introduction

The approximately 0.5-acre site is located between Valley and Gilman Streets approximately 250 feet north of Congress Street. The site is open and covered in grass. Ground surface elevations vary from approximately El. **19** along Valley Street to El. **29** at the southeast corner at Gilman Street.

We understand that the apartment building will be a four story building containing 24 residential units. The lowest (ground) floor will be at approximately El. 21.2 and will be primarily at-grade parking with bituminous concrete pavement. The building will be steel or concrete framed at the parking level, with a concrete deck above parking and wood framed above the concrete deck. We understand that the parking entrance will be at grade at Valley Street and approximately **8** feet below grade at the Gilman Street side. The house will consist of a two-story, single-family house with basement having a plan area of approximately 1,750 square feet.

Lower Sand – The lower sand consists of loose to dense, brown to gray poorly-graded SAND **(SP);** to well-graded SAND (SW); to silty **SAND** (SM). Borings penetrated up to ***6.2*** feet into the sand.

Glacial Till – Glacial till was encountered in **B3** and consists of very dense, brown to gray silty SAND with gravel (SM). The boring penetrated 7.0 feet into the glacial till.

Water was observed in the borings at depths below ground surface varying from **9.2** feet to **20.4** feet. Observations of water were made over a relatively short period of time and may not reflect the stabilized groundwater level. In addition, water levels at the site will vary with season, precipitation, temperature and construction activity in the area. Therefore, water levels during and following construction will vary from those observed in the borings.

<u>Strength and Compressibility Characteristics of Clay Stratum</u>

The stress history of the clay deposit, as developed from correlations with shear strength of similar clays in the area, is summarized on Figure 1. The undrained shear strength of the clay stratum was determined by field vane shear tests in the borings. Measured undrained shear strength varied from 590 psf to **1,080** psf. The stress history of the deposit was estimated by comparing the measured undrained shear strength with correlations for strength and stress history of clay from other projects with similar conditions.

The stress-strain or compressibility characteristics (settlement) of clays are highly dependent upon their stress history. If clay is stressed within the limits of the maximum previous stress, σ_{vm}, the strain (settlement) will be a function of the recompression ratio (RR) **of** the clay. If the applied stress exceeds the maximum previous stress, the strain will be proportional to the virgin compression ratio (CR). The compression ratio is typically 10 to 15 times the recompression ratio.

The stress history and appropriate compression ratios were estimated for the clay deposit as discussed above. The correlations indicate that the deposit is significantly overconsolidated; that is, the existing overburden stress is considerably less than the maximum previous stress. The deposit likely became overconsolidated due to desiccation (drying) resulting from a lowering of the groundwater level at some time in the geologic past which also increased the effective overburden stress throughout the stratum.

<u>Recommendations for Foundation Design</u>

<u>Recommended Foundation Type and Design Criteria</u>

The fill is not considered suitable for support of the buildings and in its present condition, the ground floor slab. In our opinion, the building should be supported on foundations which penetrate through the fill and bear on the underlying naturally deposited, inorganic soil. Due to the presence of ash in the fill, we evaluated options for disposal of the ash and concluded that treated timber piles were the most cost effective foundations.

ISC should be performed using a minimum 25,000 lb. vibratory roller operating at 30 cycles per second **(Hz)** and a forward speed of 1 to **2** feet per second. Compaction should consist of **10** coverages of the vibratory roller. The direction of each two successive coverages should be rotated perpendicular to the previous two coverages. Following intensive surface compaction, a minimum of two coverages of the roller should be applied without vibration to recompact the upper portion of the fill. Fill containing debris and wood and organics should be removed and replaced with structural fill prior to surface compaction. Any soft or unsuitable areas encountered should be excavated and replaced with compacted structural fill.

We recommend that a perimeter foundation drain with invert below the lowest floor level of El. 21.2 be constructed on the outside of the foundation wall where the final exterior grade is above the lowest floor level. The drain should consist of 4-inch diameter perforated pipe surrounded by ¾-inch crushed stone and non-woven geotextile filter fabric. Gravity discharge and normal dampproofing and vapor barriers should be provided for the foundation walls. The **final 12** inches of fill adjacent to the foundation should consist of low permeability fill to minimize water infiltration next to the wall. Grading should provide for runoff away from the building.

Seismic Design Considerations

We recommend that the buildings be designed in accordance with the seismic requirements of the latest edition of the International Building Code. The site classification is Class E; the site response coefficient F_a is 2.1 for a short period spectral response acceleration S_s of 0.37g; the site response coefficient F_v **is** 3.5 for the 1-second period spectral response acceleration **Si** of 0.10g.

Lateral Foundation Loads

We recommend that lateral loads be resisted by earth pressure against pile caps and grade beams as follows:

$P_r = (1/2\ \gamma\ K_p\ H^2)\ 1/3$

where P_r = Passive force in pounds per feet of beam or cap
y = Soil unit weight in pounds per cubic feet (use y = 110)
K_p = Passive earth pressure coefficient (use 3.0)
H = Thickness of pile cap or depth of grade beam below ground surface

If this does not provide sufficient lateral resistance, we will consider the problem in more detail to take into account other factors.

Lateral Soil Pressure

We recommend that the foundation walls which are restrained at the top and backfilled be designed to resist a lateral earth pressure calculated on the basis of an equivalent fluid unit weight of 55 pounds per cubic feet. This fluid unit weight assumes an at rest earth pressure coefficient of 0.45, a free-draining granular backfill, and an effective drainage system.

Sieve Size	Percent Finer by Weight
2 inches	100
½ inch	40-70
¼ inch	30-55
No. 40	0-20
No. 200	0-5

Subbase Course

Sand or Gravel (Maine DOT Standard Specification, Highways and Bridges; Section 703.06b, Type D)

Sieve Size	Percent Finer by Weight
6 inches	100
¼ inch	25-70
No. 40	0-30
No. 200	0-7

(Note: Compacted structural fill may be substituted for gravel subbase course.)

Fill required below the pavement section should consist of compacted structural fill. Structural fill should be placed in layers not exceeding **8** inches in thickness and compacted to a dry density of at least 95 percent of maximum dry density, as determined in accordance with ASTM Test Designation D1557. In our opinion, based on results of the test borings, the existing granular fill, if excavated, is not suitable for structural fill.

Subbase course material should be placed in maximum 8-inch thick loose lifts and compacted at approximately optimum moisture content to a dry density of at least 95 percent of maximum dry density, as determined in accordance with ASTM Test Designation D1557. Base course material should be placed in one lift and compacted with a minimum of two coverages with self-propelled vibratory compaction equipment.

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. Prospective contractors for this project must evaluate the construction problems on the basis of their own knowledge and experience in the Portland, Maine area, and on the basis of similar projects in other localities, taking into account their proposed construction methods, procedures, equipment and personnel.

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 need additional information.

Sincerely,

SEBAGO TECHNICS, INC.

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

KLR:klr/jc
Enclosures:

Table I	- Summary of Test Borings
Table II	- Summary of Soil Testing Results
Sheet 1	- Subsurface Exploration Plan
Figure 1	- Stress History
Appendix A	- Logs of Test Borings
Appendix B	- Results of Laboratory Chemical Tests

TABLE I
SUMMARY OF BORINGS
PROPOSED SHALOM HOUSE APARTMENTS
PORTLAND, MAINE

Boring Number	Depth (Ft)	Ground r El. (]	Depth to Water (Ft)	Strata Thickness (Ft)					
				Fill	Sand	Silt	Clay	Sand	Glacial Till
B1	27.0	20.0	16.3	10.0	--	--	10.8	6.2*	--
B2	35.0	18.9	9.2	10.0	9.0	5.0	6.0	5.0*	--
B3	50.0	19.9	9.5	16.9	8.3	--	16.6	1.2	7.0*
B4	32.0	23.0	20.4	10.7	2.8	--	12.8	5.7*	--
B5	27.0	27.7	18.2	5.0	--	3.0	13.0	6.0*	--

NOTES:

1. -- INDICATES STRATUM NOT ENCOUNTERED WITHIN DEPTH OF BORING
2. * INDICATES DEPTH OF PENETRATION INTO STRATUM.

04040

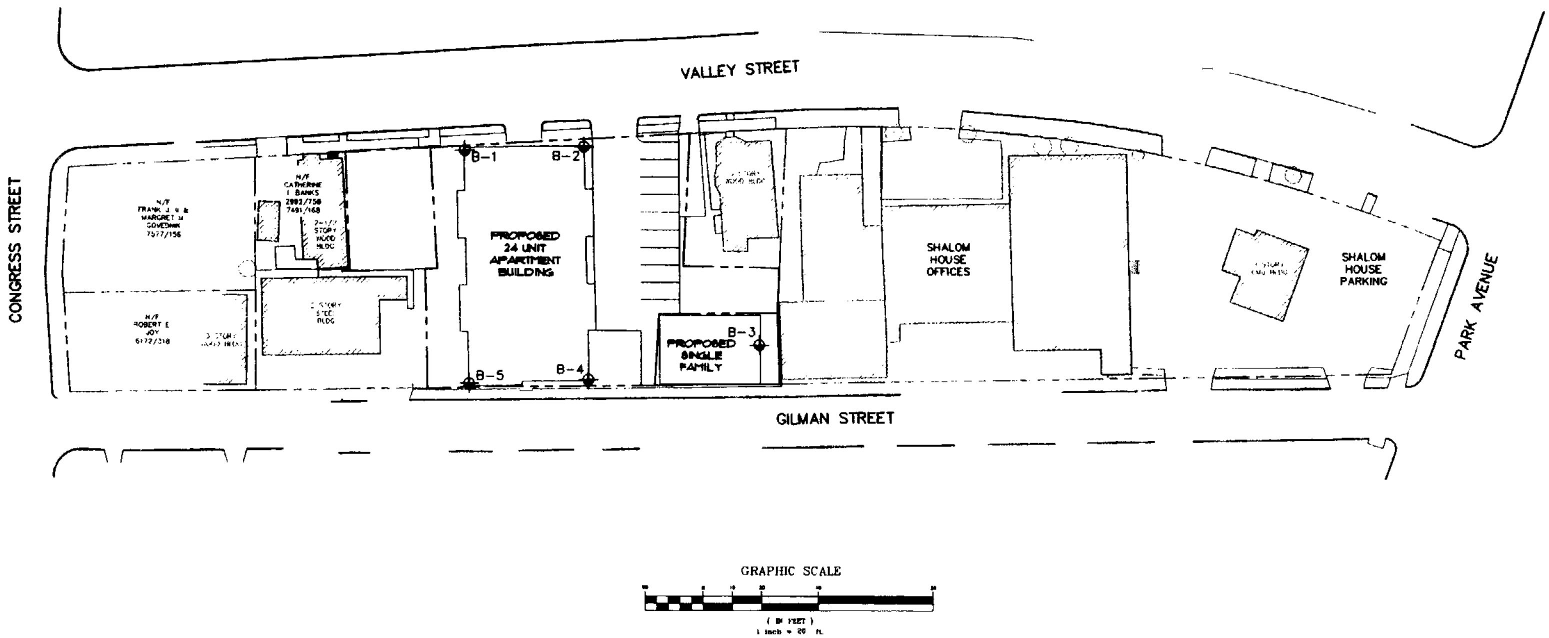
TABLE II
SUMMARY OF SOIL TESTING RESULTS
SHALOM HOUSE

Parameter	Sample S1 Composite	Maine Remedial Action Guidelines Residential	Trespasser	Adult Worker
Semi-Volatile Organic Compounds (mg/kg)				
Naphthalene	16.0	245	1710	325
2-Methylnaphthalene	8.9	NA	NA	NA
Acenaphthylene	ND	NA	NA	NA
Acenaphthene	20.0	NA	NA	NA
Fluorene	26.0	NA	NA	NA
Phenanthrene	110.0	NA	NA	NA
Anthracene	39.0	NA	NA	NA
Fluoranthene	90.0	NA	NA	NA
Pyrene	97.0	NA	NA	NA
Benzo (a) anthracene	42.0	NA	NA	NA
Chrysene	40.0	NA	NA	NA
Benzo (b) fluoranthene	27.0	NA	NA	NA
Benzo (k) fluoranthene	16.0	NA	NA	NA
Benzo (a) pyrene	29.0	2	9	7
Ideno (1,2,3-cd) pyrene	20.0	NA	NA	NA
)ibenzo (a,h) anthracene	ND	NA	NA	NA
Benzo (g,h,i) perylene	12.0	NA	NA	NA
TCLP Metals (mg/kg)				
Arsenic	ND	NA	NA	NA
Barium	0.74	10000	10000	10000
Cadmium	ND	NA	NA	NA
Chromium	ND	NA	NA	NA
Lead	0.52	375	700	700
Mercury	ND	NA	NA	NA
Selenium	ND	NA	NA	NA
Silver	ND	NA	NA	NA
Ignitability (Degrees Centigrade)	>71	<60	<60	<60

Notes:

1. Guidelines from "Procedural Guidelines for Establishing Action Levels and Remediation Goals for the Remediation of Oil Contaminated Soil and Ground Water in Maine, MEDEP, 3/13/00

ND - Not detected above laboratory Practical Quantitation Limit (PQL)



NOTES

1. BASE PLAN PREPARED FROM ELECTRONIC FILE PROVIDED BY ARCHETYPE, P.A.
2. BORINGS MONITORED BY SEBAGO TECHNICS, INC.
3. LOCATIONS OF BORINGS DETERMINED BY SEBAGO TECHNICS, INC. BY PACING FROM EXISTING SITE FEATURES.

LEGEND

⊕ B-1 NUMBER AND APPROXIMATE LOCATION OF BORINGS DRILLED BY MAINE TEST BORINGS, INC. ON JUNE 13 AND 14, 2005

REV	BY	DATE	STATUS
-	-	-	-

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Sebago Technics
Engineering Expertise You Can Build On
One Chabot Street
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PROJECT NO	FIELD BOOK	DESIGN	CHKD	DRAWN
04040	-	KLR	KLR	MAL

SUBSURFACE EXPLORATION PLAN
OF:
PROPOSED APARTMENTS AND SINGLE FAMILY RESIDENCE
VALLEY STREET
PORTLAND, MAINE
FOR:
SHALOM HOUSE, INC.
P.O. BOX 560
PORTLAND, MAINE 04112-0560

DATE	SCALE
7-27-05	1"=30'

SHEET 1 OF 1

04040

STRESS HISTORY
SHALOM HOUSE APARTMENTS
PORTLAND, MAINE

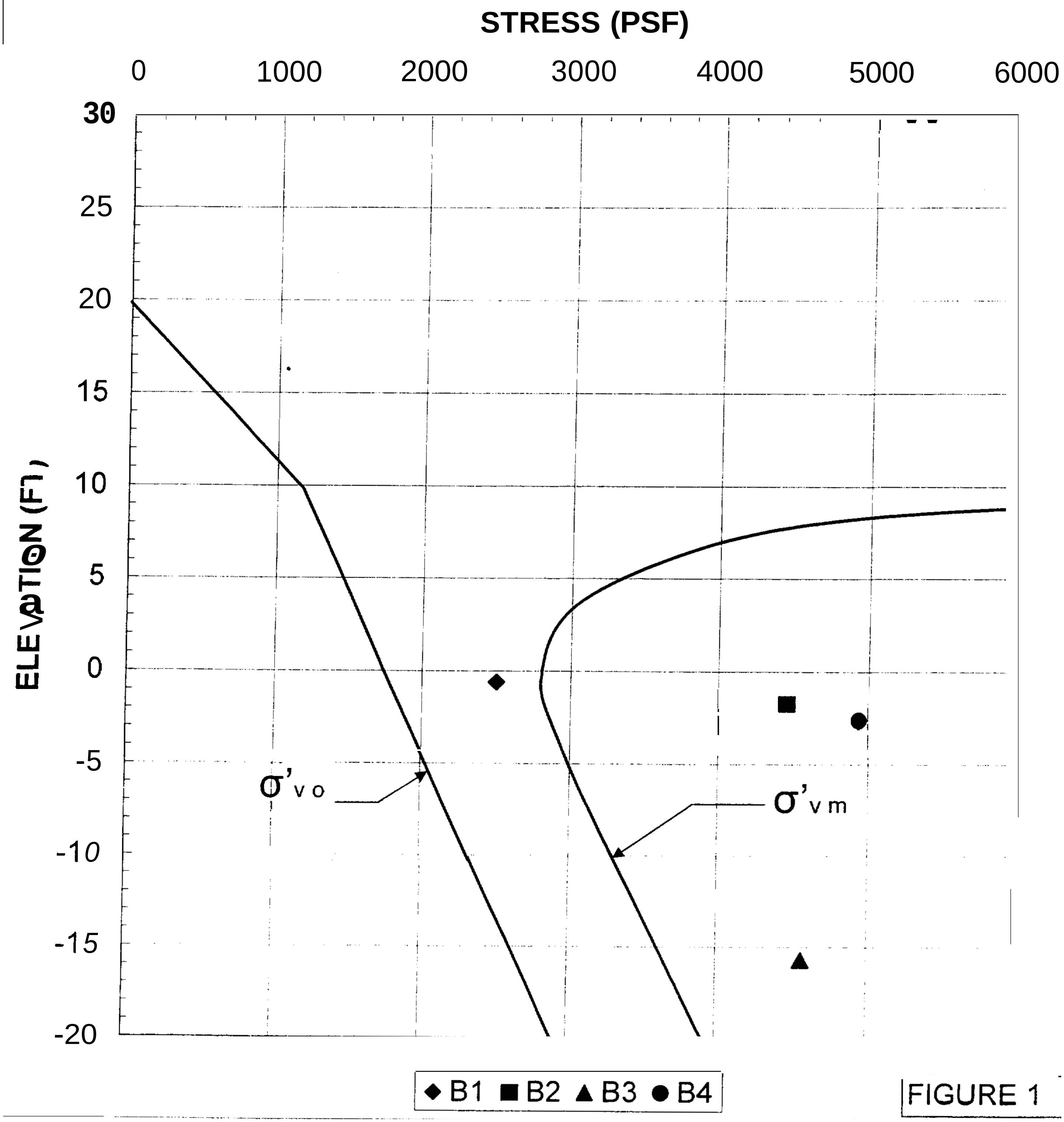

FIGURE 1

Appendix A

Logs of Test Borings

EBAGO ECHNICS, NC.

TEST BORING REPORT

BORING NO. **B2**

Page 1 of 2

E

Location: See Plan

Model: Mobile B47

Type	HSA		--
Inside Diameter (in.)	2.5	1 3/8	--
Hammer Weight (lb.)	--	140	
Hammer Fall (in.)	--	30	

☐ ATV ☑ Track ☐ Skid | Tripod, Geoprobe, Air Track | ☐ Cat-Head ☐ Winch ☐ Roller Bit ☐ Culling Head

Hammer Type: ☐ safety ☑ Doughnut ☐ Automatic

Drilling Mud: Bentonite, Polymer, ☑ None

Casing Advance — Type Method Depth: HSA/SPIN/35.0

Drilling Notes: 2.0 in. x 7.0 in. Field Vane

Depth (ft.)	Sampler Blows per 6 in.	Sample No. & Recovery (in.)	Sample Depth (ft.)	Well Diagram	Stratum Change (ft.)	USCS Symbol	Visual-Manual Identification & Description (density/consistency color GROUP NAME & SYMBOL maximum particle size, structure odor moisture optional descriptions geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Dilatancy	Toughness	Plasticity	Strength
0	6	S1	0.0		0.2	SM	Medium dense, brown silty SAND (SM), mps = 0.4 in., grass roots, dry -TOPSOIL/FILL-	5	5	50	15	10	15				
	9																
	7				1.5		Medium dense, black ASH, rusty discolorations, dry										
	7	18	2.0			SW	Medium dense, brown well-graded SAND (SW), mps = 0.3 in., lenses gray sandy clay, trace ash, dry		5	30	40	25					
5	24	S2	5.0		5.0 / 5.5	CL	Medium stiff, gray-brown lean CLAY (CL), dry					10	90	N	M	M	
	5						Loose, black ASH, slight odor, dry -FILL-										
	3																
	6	6	7.0														
							Note gravel and ash in auger cuttings to 10.0 ft.										
10	2	S3	10.0		10.0	ML	Medium stiff, gray sandy SILT (ML), occasional clay seams, brown sand seam with organic fibers 10.5 to 10.7 ft., mps = 0.02 in., damp					40	60		L	L	
	2																
	4																
	4	18	12.0				-MARINE DEPOSITS										
							Note attempted FV at 15.0 ft - could not advance vane										
15	9	S4	15.0			SM	Dense gray-brown mottled silty SAND (SM), frequent silt to clay seams, mps = 0.02 in., damp					60	40				
	18																
	25																
	20	18	17.0				-MARINE DEPOSITS-										
					17.5												
20	WOR	FV1	20.0-20.6				FV1 from 20.0 to 20.6 ft. = 26/6 ft. lb., Su = 960 psf										
	2	S5	20.0			SM	Loose gray silty SAND (SM), frequent clay seams, mps = 0.02 in., wet					60	40				
	2																
	3	17	22.0				-MARINE DEPOSITS-										
					24.0												
							Attempted FV at 25.0 ft - could not advance vane										
25	WOH	S6	25.0			CL	Stiff, gray lean CLAY (CL), frequent sand seams, one 0.75 in gravel piece at 26.2 ft., wet					15	85	N	M	M	
	3																
	3																
	4	24	27.0				MARINE DEPOSITS										
30																	

Date	Time	Elapsed Time (hr.)	Depth in feet to: Bottom of Casing	Bottom of Hole	Water
14/2005	0835		30.0	28.0	15.5
1412001	0919	.		24.0	9.2

O Open End Rod; T Thin Wall Tube; U Undisturbed Sample; S Split Spoon Sample; G Geoprobe; FV Field Vane

Riser Pipe; Screen; Filler Sand; Cuttings; Grout; Concrete; Bentonite Seal

Summary

Overburden (Linear ft.) 35.0

Rock Cored (Linear ft.)

Number of Samples 7s

BORING NO B2

SEBAGO TECHNICS, INC.

TEST BORING REPORT

BORING NO. **B3**

PROJECT	PROPOSED SHALOM HOUSE APARTMENTS	STI JOB NO.	04040
LOCATION	VALLEY STREET, PORTLAND, MAINE	PROJECT MGR.	K RECUR
CLIENT	SHALOM HOUSE	FIELD REP.	K B STEPHENSON
CONTRACTOR	MAINE TEST BORINGS, INC	DATE STARTED	6/14/2005
DRILLER	M PORTER	DATE FINISHED	6/14/2005

Elevation 19.9 ft. Datum | Boring Location See Plan

Item	Casing	Sampler	Core Barrel
Type	HSA	SS	--
Inside Diameter (in.)	2.5	1 3/8	--
Hammer Weight (lb.)	--	140	
Hammer Fall (in.)	--	30	

Rig Make & Model: Mobile B47 — [ ] Truck [ ] ATV [x] Track [ ] Skid [ ] Tripod [ ] Geoprobe [ ] Air Track [ ] Cat-Head [x] Winch [ ] Roller Bit [x] Cutting Head

Hammer Type: [ ] Safety [x] Doughnut [ ] Automatic

Drilling Mud: [ ] Bentonite [ ] Polymer [x] None

Casing Advance — Type Method Depth: HSA/SPIN/50.0

Drilling Notes: 2.0 in. x 7.0 in. Field Vane

Depth (ft.)	Sampler Blows per 6 in.	Sample No. & Recovery (in.)	Sample Depth (ft.)	Well Diagram	Stratum Change	USCS Symbol	Visual-Manual Identification & Description (density/consistency, color, GROUP NAME & SYMBOL, maximum particle size*, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Dilatancy	Toughness	Plasticity	Strength
0	2	S1	0.0		0.2	SM	Medium dense, dark brown silty SAND (SM), mps = 0.75 in., grass roots, damp -TOPSOIL/FILL-		5	50	15	15	15				
	7																
	9				0.7		Medium dense, brown well-graded SAND with gravel (SW), mpr = 1.0 in., damp	5	10	30	40	15					
	15	14	2.0														
						SM	Medium dense, brown silty SAND (SM), mps = 0.75 in., brick, ash, wood, gravel, damp -FILL-	5	10	10	10	50	15				
					4.5		Note brick and gravel in auger cuttings from 0 to 5.0 ft										
5	2	S2	5.0				Loose, gray ASH, trace brick, wet -FILL-										
	2																
	2																
	1	1	7.0														
10	1	S3	10.0				Loose, gray ASH, trace wood, wet -FILL-										
	2				11.0												
	2					SM	Loose, gray to black silty SAND (SM), trace ash, mpr = 0.02 in., wet -FILL-					85	15				
	2	8	12.0														
15	1	S4	15.0			SM	Loose, gray silty SAND (SM), frequent silt to clay seams, mps = 0.02 in., wet					80	20				
	3				16.1												
	4				16.9	OUOH	Medium stiff, dark brow PEAT, damp -ORGANIC DEPOSITS-										
	18	22	17.0			SM	Loose, gray silty SAND (SM), trace organic fibers, npr = 0.02 in., wet -MARINE DEPOSITS-					85	15				
20	7	S5	20.0			SM	Medium dense, gray silty SAND (SM) mps = 0.02 in., wet					85	15				
	14				20.7												
	15					CL	Very stiff, gray-brown mottled lean CLAY (CL), frequent sand partings, mps = 0.02 in. wet -MARINE DEPOSITS-					10	90	N	M	M	
	15	18	22.0														
					25.0												
25	WOR	S6	25.0		25.5	SM	Very loose, gray silty SAND (SM), frequent clay seams, mps = 0.02 in., wet					85	15				
	WOR																
	1				26.5	CL	Medium stiff, gray lean CLAY (CL), frequent sand partings, shells, mps = 0.02 in., wet					10	90	N	M	M	
	2	24	27.0														
						SM	Very loose, gray silty SAND (SM), frequent clay seams, trace gravel, mps = 0.75 in., wet -MARINE DEPOSITS-			40	20	20	20				
30																	

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth in feet to: Bottom of Casing	Bottom of Hole	Water
6/14/2005	1017	--	10.0	10.4	9.1
6/14/2005	1430	--	--	37.4	9.5

Sample ID: O Open End Rod; T Thin Wall Tube; U Undisturbed Sample; S Split Spoon Sample; G Geoprobe; FV Field Vane

Well Diagram: Riser Pipe; Screen; Filler Sand; Cuttings; Grout; Concrete; Bentonite Seal

Summary

Overburden (Linear ft) 50.0
Rock Cored (Linear ft) --
Number of Samples 10S

BORING NO B3

Field Tests: Dilatancy R - Rapid S - Slow N - None; Toughness L - Low M - Medium H - High; Plasticity N - Nonplastic L - Low M - Medium H - High; Dry Strength N - None L - Low M - Medium H - High V - Very High

*NOTE: Maximum Particle Size is determined by direct observation within the limitations of sampler size.

NOTE: Soil identifications based on visual-manual methods of the USCS system as practiced by Sebago Technics, Inc.

SEBAGO TECHNICS, INC.	TEST BORING REPORT	BORING NO. B4
		Page 1 of 2

PROJECT
LOCATION
CLIENT
CONTRACTOR
DRILLER

Elevation 13.0				
Item		mpl		
Type		SS		
Inside Diameter (in.)		1 3/8	--	
Hammer Weight (lb.)	--	10		
Hammer Fall (in.)	--	0		Skid

Drilling Mud: ☐ Bentonite ☐ Polymer ☑ None

Casing Advance
Type Method Depth
HSA/SPIN/30.0

0 in. x 7.0 in. Field Vane

Depth (ft.)	Sampler Blows per 6 in.	Sample No. & Recovery (in.)	Sample Depth (ft.)	Well Diagram	Stratum Change (ft.)	USCS Symbol	Visual-Manual Identification & Description (density/consistency, color, GROUP NAME & SYMBOL, maximum particle size*, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Dilatancy	Toughness	Plasticity	Strength
0	4	S1	0.0		0.3	SM	Dense bmw silty SAND (SM) mps = 0 1 in., grass roots damp				10	75	15				
	15						-TOPSOIL/FILL-										
	23					SM	Dense brown silty SAND with gravel (SM) mpr = 1 3 in damp	10	10	30	20	15	15				
	20	20	2.0														
							Note bricks in auger cuttings Obstruction at 3.7 ft possible concrete HSA refusal at 4.0 ft below ground surface Moved boring 4.0 ft north										
5	3	S2	5.0			SM	Loose brown silty SAND (SM) ash brick mps = 0.1 in., wet			10	15	60	15				
	3																
	4						-FILL-										
	3	12	7.0														
10	1	S3	10.0			SM	Loose, bmw silty SAND (SM), ash, cinders, mpr = 1.0 in., wet	*	5	10	10	60	15				
	2				10.7		-FILL-										
	6					SW	Loose, brow well-graded SAND (SW), mpr = 0.2 in., wet			40	35	20	5				
	7	15	12.0														
							-MARINE DEPOSITS-										
					13.5												
15	3	S4	15.0			CL	Stiff, gray-bmw mottled lean CLAY (CL), trace fine sand, damp						100	N	M	M	
	4																
	5						-MARINE DEPOSITS-										
	7	24	17.0														
20	WOH	S5	20.0		20.0	CL	Medium stiff, gray lean CLAY (CL), concretions at 20.8 ft., wet						100	N	M	M	
	WOH																
	WOH																
	3	24	22.0														
							-MARINE DEPOSITS-										
25	WOR	FV1	25.0-25.6		25.0		FV1 from 25.0 to 25.6 ft = 29/12 ft lb., Su = 1,080 psf										
	WOH	S6	25.0			CL	Stiff, gray lean CLAY (CL), occasional sand partings, mps = 0.02 in., wet					5	95	N	M	M	
	4				26.3												
	10	24	27.0			SM	Very loose, brown silty SAND (SM), frequent gray clay seams, mps = 0.02 in., wet					85	15				
							-MARINE DEPOSITS-										
30		[redacted]															

Date	Time	Elapsed Time (hr.)	Depth in feet to: Bottom of Casing	Bottom of Hole	Water
6/14/2005	1640	--	25.0	26.5	20.4
6/14/2005	1745	--	--	11.4	Dry

Sample ID	
O	Open End Rod
T	Thin Wall Tube
U	Undisturbed Sample
S	Split Spoon Sample
G	Geoprobe
FV	Field Vane

Well Diagram: Riser Pipe; Screen; Filter Sand; Cuttings; Grout; Concrete; Bentonite Seal

Summary	
Overburden (Linear ft.)	32.0
Rock Cored (Linear ft.)	--
Number of Samples	7S
BORING NO.	B4

Field Tests: Dilatancy: R - Rapid S - Slow N - None; Toughness: L - Low M - Medium H - High; Plasticity: N - Nonplastic L - Low M - Medium H - High; Dry Strength: N - None L - Low M - Medium H - High V - Very High

*NOTE: Maximum Particle Size is determined by direct observation within the limitations of sampler size.

NOTE: Soil identifications based on visual-manual methods of the USCS system as practiced by Sebago Technics, Inc.

SEBAGO TECHNICS, INC.

TEST BORING REPORT

BORING NO. **B5**

Page 1 of 1

PROJECT	PROPOSED SHALOM HOUSE APARTMENTS	STI JOB NO	04040
LOCATION	VALLEY STREET, PORTLAND, MAINE	PROJECT MGR.	K RECKER
CLIENT	SHALOM HOUSE	FIELD REP	K B STEPHENSON
CONTRACTOR	MAINE TEST BORINGS, INC	DATE STARTED	6/15/2005
DRILLER	M PORTER	DATE FINISHED	6/15/2005

Boring Location: See Plan

	mpler	Core Barrel	Rig Make & Model		Mobile B47	Hammer Type	Drilling Mud	Casing Advance
	SS	--	☐ Truck	☐ Tripod	☐ Cat-Head	☐ Safety	☐ Bentonite	Type Method Depth
	3/8	--	☐ ATV	☐ Geoprobe	☑ Winch	☑ Doughnut	☐ Polymer	HSA/SPIN/25 0
	140		☑ Track	☐ Air Track	☐ Roller Bit	☐ Automatic	☑ None	
	30		☐ Skid	☐	☑ Cutting Head	Drilling Notes: 2.0 in. x 7.0 in. Field Vane		

Depth (ft.)	Sampler Blows per 6 in.	Sample No. & Recovery (in.)	Sample Depth (ft.)	Well Diagram	Stratum Change (ft.)	USCS Symbol	Visual-Manual Identification & Description (density/consistency color GROUP NAME & SYMBOL maximum particle size*, structure odor moisture optional descriptions geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Dilatancy	Toughness	Plasticity	Strength
0	3	S1	0 0		0 1	SM	Medium dense brown silty SAND (SM) mps = 0 1 in, grass roots wet -TOPSOIL/FILL-				10	75	15				
	5																
	22				1 0	SM	Medium dense brown silty SAND (SM), roots mps = 0 2 in			20	30	35	15				
	80/.2	6	1 7				Note several yards of geotextile fabric beneath ground surface -FILL-										
					2 0		Note brown silty sand with gravel in auger cuttings, trace wood at 4 9 ft -FILL-										
5	5	S2	5 0		5 0	ML	Very stiff gray-brown mottled sandy SILT (ML) mps = 0 02 in damp -MARINE DEPOSITS-					25	75		L	N	
	9																
	12																
	20	12	7 0														
					8 0												
10	3	S3	10 0			CL	Stiff gray-brown mottled lean CLAY (CL), occasional sand partings, mps = 0 02 in damp -MARINE DEPOSITS-					5	95	N	M	M	
	6																
	7																
	9	24	12 0														
15	2	S4	15 0			CL	Stiff, gray-brown mottled lean CLAY (CL), occasional sand partings, mps = 0.02 in., damp					5	95	N	M	M	
	4				15.3												
	5					CL	Stiff, gray lean CLAY (CL), occasional sand partings, brown sand seam at 16 0 ft., mps = 0 02 in wet -MARINE DEPOSITS-					10	90	N	M	M	
	5	24	17 0														
20	1	S5	20 0			CL	Note attempted FV at 20 0 ft - could not advance vane. Very stiff, gray lean CLAY (CL), frequent sand seams, mps = 0 02 in., wet					15	85	N	M	M	
	9				21.0												
	10					SM	Medium dense brown silty SAND (SM), frequent clay and silt seams mps = 0 02 in, rusty discolorations, wet -MARINE DEPOSITS-					80	20				
	17	24	22 0														
					23 0												
25	3	S6	25 0			SP	Medium dense brown poorly-graded SAND (SW), mps = 0 1 in., wet -MARINE DEPOSITS-			20	80						
	9																
	12																
	31	24	27 0														
							Bottom of exploration at 27 0 ft below ground surface. No refusal. Note running sand conditions- sand at 23 5 ft in augers										
30																	

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth in feet to: Bottom of Casing	Bottom of Hole	Water
6/15/2005	0836	--	21111	20 0	18 2
6/15/2005	0955	--	--	15 6	Dry

Sample ID

- O Open End Rod
- T Thin Wall Tube
- U Undisturbed Sample
- S Split Spoon Sample
- G Geoprobe
- FV Field Vane

Well Diagram

- Riser Pipe
- Screen
- Filter Sand
- Cuttings
- Grout
- Concrete
- Bentonite Seal

Summary

Overburden (Linear ft)	27 0
Rock Cored (Linear ft)	--
Number of Sampler	6S
BORING NO	B5

Field Tests: Dilalancy R - Rapid S - Slow N - None; Toughness. L - Low M - Medium H - High; Plasticity: N - Nonplastic L - Low M - Medium H - High; Dry Strength: N - None L - Low M - Medium H - High V - Very High

*NOTE: Maximum Particle Size is determined by direct observation within the limitations of sampler size.

NOTE: Soil identifications based on visual-manual methods of the USCS system as practiced by Sebago Technics, Inc.