

this area with a PID as the soil is being excavated. Soil with evidence of petroleum impact (i.e., visual and olfactory evidence of contamination, or elevated PID measurements) could be segregated in a secure stockpile and tested for offsite disposal or treatment if it cannot be reused onsite. It is likely that petroleum-impacted soil will have to be tested by an environmental laboratory for a suite of parameters (according to the receiving facility regulatory requirements) prior to offsite treatment or disposal. S.W. COLLE ENGINEERING, INC. is available to provide these services, as necessary.

#### 4.7 Backfill and Compaction Requirements

The existing sandy fills are likely suitable for reuse on-site, but should not be used as backfill against foundations or grade beams exposed to freezing temperatures due to ad-freeze considerations. The native silts and clays are not suitable for foundation backfill or for use beneath the proposed asphalt floor. The native organic soils/peats are not suitable for reuse against foundations or beneath structures or pavements. We recommend that compacted granular backfill placed against foundations, grade beams, and piles caps (both inside and out) meet the gradation requirements for Select Fill.

Sieve Size	Percent Finer By Weight	
	Select Fill	Crushed Stone
4 inch	100	---
3 inch	80-100	---
1 inch	---	100
3/4 inch	---	85-100
1/2 inch	25-90	20-70
#4	---	0-15
#10	---	0-5
#40	0-30	---
#200	0-5	---

Foundation backfill and fills placed beneath the asphalt floor and concrete slab should be compacted to at least 95 percent of its maximum dry density as determined by the Modified Proctor (ASTM D1557). Crushed stone should be compacted to 100 percent of its dry rodcut unit weight as determined by ASTM C-29.

#### **4.8 Entrance and Sidewalks**

Entrances and sidewalks should be designed to reduce the effects of differential frost action. We recommend excavation beneath entrances and sidewalks continue to 4.0 feet below finish grade. The 4.0-foot depth should extend from the building outward to the full width of the entrance steps and sidewalks. The entrance and sidewalk areas should be backfilled with compacted Select Fill. The Select Fill should transition up to any adjacent pavement sub-base at a 1V to 5H slope or flatter from the 4.0-foot depth. Backfill below entrances should be placed in lifts and compacted to at least 95 percent of its maximum dry density as determined by ASTM D-1557. All adjacent paved and grassed areas should be sloped to promote drainage away from the building periphery.

#### **4.9 Weather Considerations**

If foundation construction takes place during cold weather, subgrades, foundations, and concrete must be protected during freezing conditions. Concrete must not be placed on frozen soil and once placed, the soil and concrete must be protected from freezing. Further, the on-site fills are moisture sensitive and as such exposed soil surfaces will be susceptible to disturbance during wet conditions. Consequently, site work and construction activities should take appropriate measures to protect exposed soils, particularly when wet. It should be anticipated that a layer of geotextile fabric and crushed stone may be necessary over wet subgrades to provide a stable working surface.

#### **4.10 Construction Testing**

S.W. COLE ENGINEERING, INC. should be retained to provide geotechnical and construction materials consultation as well as construction materials testing services for the piling, excavation and foundation phases of construction. This is to observe compliance with the design recommendations, drawings and specifications and to allow design changes in the event that subsurface conditions are found to differ from those anticipated prior to the start of construction. S.W. COLE ENGINEERING, INC. is available to provide vibration monitoring, pile installation monitoring and testing of soils, concrete, steel, masonry, fireproofing and asphalt pavement.

**5.0 CLOSURE**

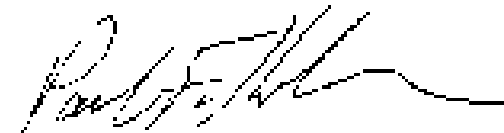
S.W. COLE ENGINEERING, INC. should review the sitework and foundation design drawings to confirm that our recommendations have been appropriately interpreted and implemented. It has been a pleasure to be of assistance to you with this phase of your project. We look forward to working with you as the design progresses and during the construction phase.

Sincerely,

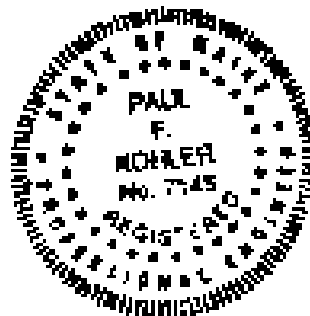
**S. W. COLE ENGINEERING, INC.**



Andrew R. Simmons, E.I.T.



Paul F. Kohler, P. E.  
Vice President



ARS:pfk

K:\Projects\00-1065.E\00-1065.E.dwg:richard.derry@swc.com:12/19/00 10:52:00 AM:00-1065.E.dwg:00-1065.E.dwg:12/19/00 10:52:00 AM

## Attachment A Limitations

This report has been prepared for the exclusive use of Maine Yacht Center, L.L.C. for specific application to the Proposed Boat Storage Building on Kensington Street in Portland, Maine. S. W. COLE ENGINEERING, INC. has endeavored to conduct the work in accordance with generally accepted soil and foundation engineering practices. No other warranty, expressed or implied, is made.

The soil profiles described in the report are intended to convey general trends in subsurface conditions. The boundaries between strata are approximate and are based upon interpretation of exploration data and samples.

The analyses performed during this investigation and recommendations presented in this report are based in part upon the data obtained from subsurface explorations made at the site. Variations in subsurface conditions may occur between explorations and may not become evident until construction. If variations in subsurface conditions become evident after submission of this report, it will be necessary to evaluate their nature and to review the recommendations of this report.

Observations have been made during exploration work to assess site groundwater levels. Fluctuations in water levels will occur due to variations in rainfall, temperature, and other factors.

S. W. COLE ENGINEERING, INC.'s scope of work has not included the investigation, detection, or prevention of any Biological Pollutants at the project site or in any existing or proposed structure at the site. The term "Biological Pollutants" includes, but is not limited to, molds, fungi, spores, bacteria, and viruses, and the byproducts of any such biological organisms.

Recommendations contained in this report are based substantially upon information provided by others regarding the proposed project. In the event that any changes are made in the design, nature, or location of the proposed project, S. W. COLE ENGINEERING, INC. should review such changes as they relate to analyses associated with this report. Recommendations contained in this report shall not be considered valid unless S. W. COLE ENGINEERING, INC. reviews the changes.



# BORING LOG

DRAWING NO. D-00-101  
 SHEET 1 OF 2  
 PROJECT NO. 94-1055 G  
 DATE START 1/12/2003  
 DATE END 1/12/2003  
 ELEVATION 16.0

PROJECT - CLIENT: PROVIDER BUILDING AND ENGINEERING ARCHITECTURAL CENTER, LLC  
 LOCATION: 124 KATHLEEN'S HILL, CARLETON, MARIETTA, GA  
 DRILLING CO: CREATON BORE TEST DRILLING DRILLER: JEFF

SWC 001 A SIMMONS

	TYPE	SIZE (D)	HAMMER WT	HAMMER FALL
CASING	SA	4.000	150 LB	30" H
SAMPLER	SS	1.500	140 LB	30" H
CORE BARREL				

WATER LEVEL INFORMATION  
 DATE/TIME: 1/12/2003 11:00 AM

DEPTH FEET	SAMPLE				SAMPLER STROKE RECORD				DEPTH FEET	STRATA & TEST DATA
	LOG	PSY	TRC	SP. H LOG (FT)	1-4	5-8	9-12	13-16		
10					5	4	3	2	10.0	BROWN TO BROWN SAND (SILT) - MEDIUM DENSE -
20					4	3	2	1	20.0	GRAY TO TAN GRAVELLY SAND (SILT) - MEDIUM DENSE -
30					4	3	2	1	30.0	GRAY TO LIGHT BROWN SAND - MEDIUM DENSE -
40					5	4	3	2	40.0	GRAY TO LIGHT BROWN SAND (SILT) - MEDIUM DENSE -
50					5	4	3	2	50.0	GRAY TO LIGHT BROWN SAND (SILT) - MEDIUM DENSE -
60					5	4	3	2	60.0	GRAY TO LIGHT BROWN SAND (SILT) - MEDIUM DENSE -
70					5	4	3	2	70.0	GRAY TO LIGHT BROWN SAND (SILT) - MEDIUM DENSE -
80					5	4	3	2	80.0	GRAY TO LIGHT BROWN SAND (SILT) - MEDIUM DENSE -
90					5	4	3	2	90.0	GRAY TO LIGHT BROWN SAND (SILT) - MEDIUM DENSE -
100					5	4	3	2	100.0	GRAY TO LIGHT BROWN SAND (SILT) - MEDIUM DENSE -

SAMPLER: SS SOIL ACQUISITION  
 REMARKS: STRATIFICATION ONLY REPRESENTS THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL.



**S.W. COLE**  
ENGINEERING, INC.

**BORING LOG**

BORING NO: B-00-101  
SHEET: SHP 2  
PROJECT NO: 02-1663  
DATE START: 11/2/2002  
DATE FINISH: 11/2/2002  
ELEVATION: 18.11

PROJECT: HOUSTON SUBURBAN DISTRICT NA NINE YACHT CENTER LLC.  
LOCATION: 201 CONNORCHILDS RD - PORT AND MAIN  
DRILLING TO: SPENT ALUMINUM TESTING      DRILLER: PLH

ENGINEER: A. SIMMONS

DEPTH	SOIL CLASSIFICATION	WATER CONTENT	LIQUID LIMIT	PLASTICITY INDEX
1.00	CL	10.0%	100.0	0.0
3.00	CL	10.0%	100.0	0.0

WATER LEVEL INFORMATION  
FREE WATER 4.75 FROM GROUND SURFACE

DEPTH (FEET)	SAMPLE				SAMPLES DOWN PER FOOT				REMARKS
	NO.	DATE	LAB	DEPTH (FEET)	1	2	3	4	
0.00 - 1.00				1.00					GRAY SILTY SAND (CL) - MINIMUM DENSE - ROLLER DEPTH 34.00 FEET NO STRAY PILE TO BEDROCK SEE ROCK CORE LOG
1.00 - 2.00				2.00					FOOT SWICH EXPLORATION @ 40.0 FEET
2.00 - 3.00				3.00					
3.00 - 4.00				4.00					
4.00 - 5.00				5.00					
5.00 - 6.00				6.00					
6.00 - 7.00				7.00					
7.00 - 8.00				8.00					
8.00 - 9.00				9.00					
9.00 - 10.00				10.00					
10.00 - 11.00				11.00					
11.00 - 12.00				12.00					
12.00 - 13.00				13.00					
13.00 - 14.00				14.00					
14.00 - 15.00				15.00					
15.00 - 16.00				16.00					
16.00 - 17.00				17.00					
17.00 - 18.00				18.00					
18.00 - 19.00				19.00					
19.00 - 20.00				20.00					
20.00 - 21.00				21.00					
21.00 - 22.00				22.00					
22.00 - 23.00				23.00					
23.00 - 24.00				24.00					
24.00 - 25.00				25.00					
25.00 - 26.00				26.00					
26.00 - 27.00				27.00					
27.00 - 28.00				28.00					
28.00 - 29.00				29.00					
29.00 - 30.00				30.00					
30.00 - 31.00				31.00					
31.00 - 32.00				32.00					
32.00 - 33.00				33.00					
33.00 - 34.00				34.00					
34.00 - 35.00				35.00					
35.00 - 36.00				36.00					
36.00 - 37.00				37.00					
37.00 - 38.00				38.00					
38.00 - 39.00				39.00					
39.00 - 40.00				40.00					
40.00 - 41.00				41.00					
41.00 - 42.00				42.00					
42.00 - 43.00				43.00					
43.00 - 44.00				44.00					
44.00 - 45.00				45.00					
45.00 - 46.00				46.00					
46.00 - 47.00				47.00					
47.00 - 48.00				48.00					
48.00 - 49.00				49.00					
49.00 - 50.00				50.00					

SAMPLES:      SOIL CLASSIFICATION:      REMARKS:

\* SPLIT SPOON  
3" x 3" x 6" BY TUBE  
1.5" x 1.5" x 12" BY TUBE

DRILLER - VISIBILITY  
SOIL TEST - VISUAL  
LAB WATER TEST

APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES  
AND THE TRANSITION MAY BE SMOOTH

BORING NO: B-00-101



# BORING LOG

BORING NO. B-03-102  
 SHEET 1 OF 1  
 PROJECT NO. 04-0605  
 DATE START 12/10/03  
 DATE FINISH 12/10/03  
 ELEVATION 18.0  
 SAWYER A. SIMONS

PROJECT CLIENT REDFORD BLDG. INC. AT EASTERN WAREHOUSE MAINT. FACILITY, NEW BRUNSWICK, NJ  
 LOCATION INDUSTRIAL SITE, HARTLAND MAINE  
 WELL IDENTIFY GREAT WORKS TEST BORING DRILLER RECE

CASING	TYPE	SIZE	HAMMER WEIGHT		HAMMER FALL	
			LB	IN	FT	IN
SAMPLE 1	52	1.50 IN	140 LB	30 IN		
DATE DRILLED						

WATER LEVEL INFORMATION  
 PRESSURE HEAD FROM GROUND SURFACE

DEPTH (FEET)	SAMPLING DATA								SOIL TYPE & TEST DATA
	NO.	TEST	TYPE	DEPTH (FEET)	NO.	TEST	TYPE	DEPTH (FEET)	
1.0									BROWN SAND AND GRAVEL (GRAVEL 21%) (U)
5.0									BROWN SAND AND GRAVEL (GRAVEL 10%) - MEDIUM DENSE -
10.0									BROWN SAND AND GRAVEL WITH WOOD AND ORGANIC DEBRIS - LOOSE (STRONG PETROLOGIC BLENDED)
15.0									BROWN SILTY CLAY - STIFF -
20.0									BROWN SILTY SAND - LOOSE -
25.0									BROWN SILTY SAND - MEDIUM DENSE -
30.0									GRAY CLAY SILTY SAND AND SILT - LOOSE -
35.0									BROWN SILTY SAND MEDIUM DENSE
40.0									GRAY SILTY GRAVELLY SAND (TLL) - LOOSE - MEDIUM DENSE -
45.0									POTENTIAL CONTAMINATION @ 45.5 FEET (FROM REFUSAL)

SAMPLES	SOIL CLASSIFICATION	REMARKS
4 WITH WAGON 0 WITH SHELVY TUBE 0 WITH SHELVY TUBE	<input checked="" type="checkbox"/> DRILLER'S SAMPLE <input type="checkbox"/> SOIL TUBE - VISUAL <input type="checkbox"/> EXTRUSION TEST	STRATIFICATION OF L. SILTY SAND (U) APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL



# BORING LOG

BORE NO. B-03-103  
 DATE 10/1  
 PROJECT NO. 03-106-5  
 DATE START 10/1/2000  
 DATE FINISH 10/1/2000  
 ELEVATION 16.1  
 SOIL NAME 4 SAMPLES

PROJECT CLIENT PROPOSED BUILDING AT 6501 N. MARINA PARKWAY CENTER LLC  
 LOCATION 150 KENYARDON STREET BOATLAND, MAINE  
 DRILLING CO. GREAT NORTH WEST DRILLING DRILLER: PETE

	TYPE	SIZE (D)	HAMMER WT. (HAMMER FALL)	10 IN	20 IN
PAVING	25	4.0 IN	20 LB	10 IN	10 IN
SAMPLER	32	1.75 IN	140 LB	10 IN	10 IN
CORE BARREL					

WATER LEVEL INFORMATION  
 FREE WATER 2.1 FT FROM GRAIND SURFACE

DEPTH FEET	SAMPLE				SAMPLE LENGTH (FEET)				REMARKS
	10	20	30	40	10	20	30	40	
0									STRATA & TEST DATA
10									CONCRETE FROM 0.0 TO 10.0 FEET
10									CONCRETE FROM 10.0 TO 12.0 FEET
12									BROWN SILTY CLAY
12									-STIFF-
12									W = 49.1%
12									10 - 1.5 KSF
12									20 - 2.0 KSF
15									STRONG PETROLOCOMP BEHIND 10
15									MINOR 1.5 - 1.5 FINE SAND
15									-LOOSE-
18									BROWN SILTY FINE SAND
18									-LOOSE-
20									BRICKS UNDER SANDSTONE SLT
20									BOTTOM OF EXPLORATION 3000 FEET
20									(STOPPED DRILL)

SAMPLES	SOIL CONDITION	REMARKS
4 3/8 IN. SPOON	<input type="checkbox"/>	DRILLER VISUAL
6 IN. SQUEEZE TUBE	<input checked="" type="checkbox"/>	SOIL TEST LABORATORY
1.5 IN. SQUEEZE TUBE	<input type="checkbox"/>	LABORATORY TEST

STRATA & TEST DATA REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL





WORK NO. B-03-104  
SHEET 1 OF 1  
PROJECT NO. 02-10503  
DATE START 11/11/03  
DATE FINISH 11/11/03  
ELEVATION 16.1

PROJECT POINT: PROPOSED BUILDING AT EXISTING MARINA MARINE YACHT CENTER  
LOCATION: 20 KENSINGTON STREET PORTLAND, MAINE  
DRILLING CO: CREAT WORKS TEST BORING      BORE DIA.             FEET

SOIL REP: A. BRUNO

WATER LEVEL INFORMATION

WATER TABLE FROM BORE LOG SURFACE

CASING	TYPE	SIZE I.D.	HAMMER WT	HAMMER FALL
	4IN	4.125	205 LB	30 IN
SAMPLER	SS	1.58 IN	142 LB	30 IN
CORE BARREL				

DEPTH (FEET)	SAMPLE NO.				SAMPLE DEPTH (FEET)				REMARKS
	NO.	DEPTH	DEPTH	DEPTH	NO.	DEPTH	DEPTH	DEPTH	
10	21	21	21	21	0	6	7	7	SPOON SAND AND GRAVEL TEST TO 10 FEET - MEDIUM DENSE -
20	24	24	24	24	1	2	2	2	
30	24	24	24	24	1	2	2	2	FINE GRAINED SAND (SILT) WITH MISCELLANEOUS FL. - LOOSE -
40	24	24	24	24	1	2	2	2	
50	24	24	24	24	1	2	2	2	STRONG PETROL COOL TO 50 FEET DARK GRAY SAND (SILT) AND GRAVEL (FL.) - LOOSE -
60	24	24	24	24	1	2	2	2	
70	24	24	24	24	1	2	2	2	GRAY SAND SILT AND CLAY w=22.4%
80	24	24	24	24	1	2	2	2	
90	24	24	24	24	1	2	2	2	MEDIUM STIFF -
100	24	24	24	24	1	2	2	2	
110	24	24	24	24	1	2	2	2	DARK BROWN SILTY SAND - MEDIUM DENSE -
120	24	24	24	24	1	2	2	2	
130	24	24	24	24	1	2	2	2	- MEDIUM DENSE - w = 22.5%
140	24	24	24	24	1	2	2	2	
150	24	24	24	24	1	2	2	2	GRAY GRAVELLY SILT AND SAND (FL.) - MEDIUM DENSE -
160	24	24	24	24	1	2	2	2	
170	24	24	24	24	1	2	2	2	BOTTOM OF EXPLORATION @ 170 FT. POCKET REF. SALT
180	24	24	24	24	1	2	2	2	

SAMPLES:	SOIL CLASSIFIED BY:	REMARKS:
<input type="checkbox"/> SHALLOW <input type="checkbox"/> SHELLY TUBE <input type="checkbox"/> CAS SHELLY TUBE	<input checked="" type="checkbox"/> OTHER VISUAL <input type="checkbox"/> SOIL TECH. VISUAL <input type="checkbox"/> LABORATORY TEST	STRATIFICATION NOT REPAI SON THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE DRUGAL
		BORE NO. <u>B-03-104</u>



# BORING LOG

BORING NO. B-03-105  
 SHEET 1 OF 1  
 PROJECT NO. 00-10003  
 DATE START 11-12-2003  
 DATE FINISH 11-12-2003  
 ELEVATION: 16.45

PROJECT CLIENT PROPOSED BUILDING AT EXISTING MARINA MAINE YACHT CENTER LLC  
 LOCATION 100 KENYARDEN STREET PORTLAND, MAINE  
 DRILLER PTC

	TYPE	SIZE (D)	HAMMER NO.	HAMMER TOTAL
FASINGS	HW	4.125	100.0	100.0
SAMPLER	ES	1.5875	100.0	100.0
CORE BARREL				

SWS TEST # 4 SIMMONS  
 SWS TEST # INFORMATION  
 FREE WATER % 50 FROM 100.0 TO 100.0000000000

DEPTH BELOW SURFACE FEET	SAMPLE				SAMPLES PER FOOT				REMARKS
	1	2	3	4	1	2	3	4	
10	24	27	20		1	3	0	1	STRATA & TEST DATA BROWN GRAY TO BROWN SAND SOME SILT FILL - MEDIUM DENSE - w-45% CONCRETE
10	24	8	18		12	20			BROWN GRAY TO BROWN SAND FILL CONCRETE FROM 10 TO 12.1 - MEDIUM DENSE -
10	24	11	20		2	2	4	1	BROWN GRAY SAND CLAY SOME FINE SAND - MEDIUM DENSE -
10	24	22	20		4	3	2	0	BROWN GRAY SAND FILL WITH CLAY LENSES - MEDIUM DENSE -
10	24	22	20		2	3	0	1	GRAY BROWN SAND FILL - MEDIUM DENSE - BUT ON TOP EXPLORATION @ 25.7 (SPOON REFUSAL)

SAMPLES 1 - 30" SPT 1 - 10" SPT 1 - 10" SPT	SOIL CLASSIFIED BY: <input type="checkbox"/> SPT <input checked="" type="checkbox"/> VISUAL <input checked="" type="checkbox"/> LABORATORY TEST	REMARKS: DIMENSIONS IN LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THIS TRANSITION MAY BE GRADUAL.	<div style="border: 1px solid black; border-radius: 50%; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center; margin: 0 auto;">7</div>
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# ROCK CORE LOG

DATE: 8-03-10

PROJECT NO: JC-1055.5

SHEET: 1 OF 1

CORE NO: NU2

PROJECT NAME / LOCATION: WAKE WAGH CENTER LLC - BRIMINGTON ST. PORTLAND, ME

LOGGED BY: A. SIMONS

DATE: 11/10/07

CHECKED BY: A. RICHARDSON

DATE: 11/12/07

DEPTH BELOW SURFACE (ft)	CORE RUN	CONC. INTERVAL (ft)	CORE RECOVERY (%)	RQDM	ROCK QUALITY	GRAPHIC LOG	ROCK DESCRIPTION AND IDENTIFICATION
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50	1	0'	85'	90%	F-4M		<p>GRAY PHY. LITE</p> <p>W/</p> <p>INTERMEDIATELY WEA. FINED</p> <p>FRACTURES, 1 TO 1/2 DEGRS</p> <p>FROM THE HORIZONTAL</p>
51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100							

## KEY TO THE NOTES & SYMBOLS

### Test Boring and Test Pit Explorations

All stratification lines represent the approximate boundary between soil types and the transition may be gradual.

#### Key to Symbols Used:

w	-	water content, percent (dry weight basis)
$\sigma_c$	-	unconfined compressive strength, kps/sq. ft. - based on laboratory unconfined compressive test
$\sigma_{cv}$	-	field vane shear strength, kps/sq. ft.
$\tau_v$	-	lab vane shear strength, kps/sq. ft.
$q_u$	-	unconfined compressive strength, kps/sq. ft. based on pocket penetrometer test
O	-	organic content, percent (dry weight basis)
WL	-	liquid limit - Atterberg test
WS	-	shrinkage limit - Atterberg test
WOH	-	advance by weight of hammer
WOM	-	advance by weight of man
WOR	-	advance by weight of rods
HYD	-	advance by force of hydraulic piston on wall
RQC	-	Rock Quality Designator - an index of the quality of a rock mass. RQC is computed from recovered core samples.
$\gamma$	-	total soil weight
$\gamma_b$	-	buoyant soil weight
HSA	-	Hollow Stem Auger
HW	-	4" Casing
NW	-	3" Casing
SS	-	soil spoon sampler

#### Description of Proportions:

0 to 5% TRACE  
5 to 12% SOME  
12 to 35% "Y"  
35% AND

**REFUSAL: Test Boring Explorations** - Refusal depth indicates that depth at which, in the driller's opinion, sufficient resistance to the advance of the casing, auger, probe rod or sampler was encountered to render further advance impossible or impracticable by the procedures and equipment being used.

**REFUSAL: Test Pit Explorations** - Refusal depth indicates that depth at which sufficient resistance to the advance of the backhoe bucket was encountered to render further advance impossible or impracticable by the procedures and equipment being used.

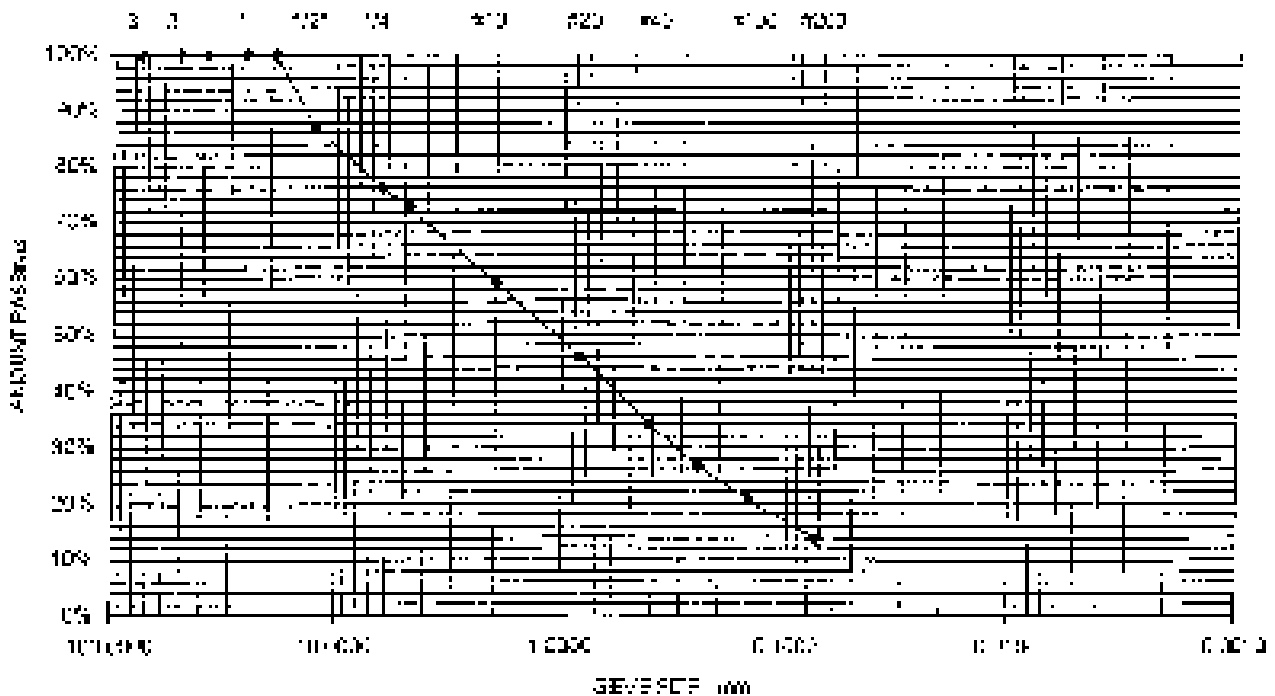
Although refusal may indicate the encountering of the bedrock surface, it may indicate the striking of large boulders, boulders, very dense or cemented soil, or other buried natural or man-made objects or it may indicate the encountering of a harder zone after penetrating a considerable depth through a weathered or disintegrated zone of the bedrock.

Project Name: PORTLAND - PROPOSED MARINA BUILDING - SUITE 1000A  
 GEOTECH  
 Client: MAINF YACHT CENTER LLC  
 Extension: B 33 401 10  
 Material Design: Q-2

Project Number: 00-1005.1  
 Log ID: 10015  
 Date Received: 12/16/09  
 Date Complete: 12/16/09  
 Tested By: CHRIS WOODWARD

SEIVE OPENING (mm)	SEIVE SIZE	AMOUNT PASSING (%)	
152.4	6"	100	
127	5"	100	
101.6	4"	100	
75	3"	100	
50.8	2"	100	
38.1	1 1/2"	100	
25.7	1"	100	
19	3/4"	100	
15.7	5/8"	87	
12.5	1/2"	76	
9.5	No. 4	73	77.3% Coarse
7	No. 10	59	
4.75	No. 20	48	
3.0	No. 40	34	50.1% Fines
2.0	No. 60	27	
0.85	No. 100	20	
0.425	No. 200	13.5	15.9% Fines

**BROWN GRAVELLY SAND SOME SILT**

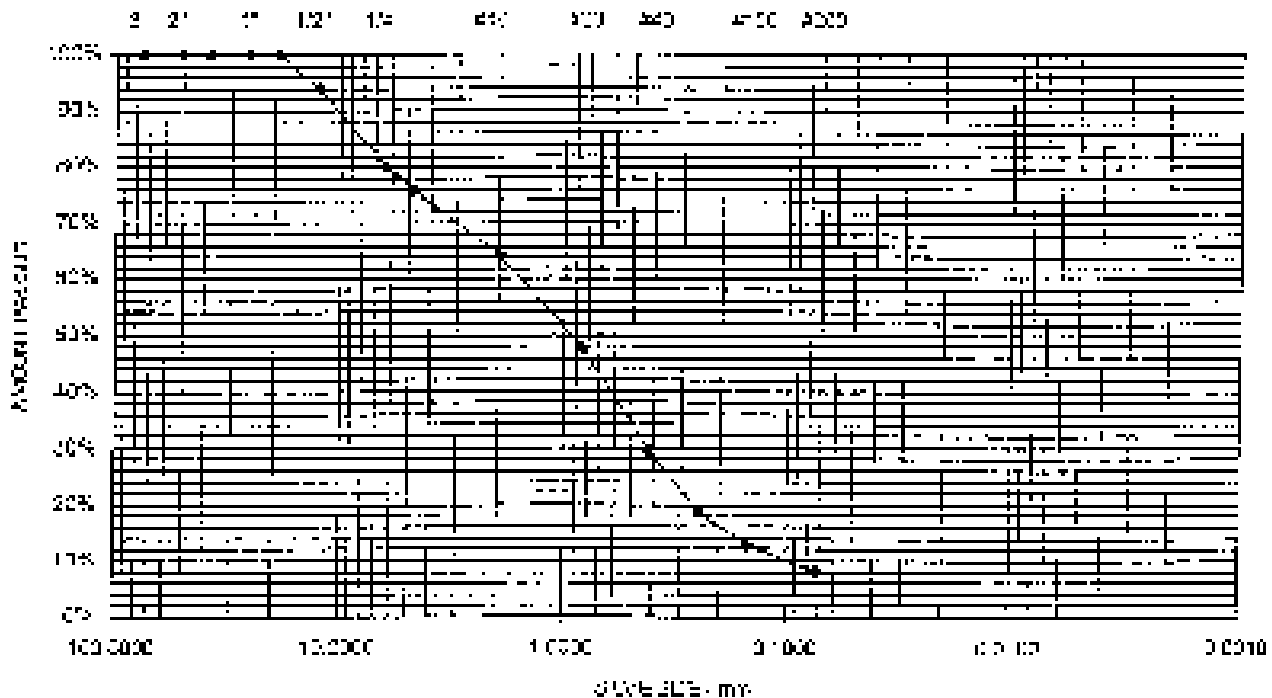


Project Name: PORTLAND PROTECTED MARINA BUILDING SUPPLEMENTAL GEOTECH  
 Client: MAINE YACHT CENTER LLC  
 Exploration: B-03-106 1D  
 Material Source: B-2

Project Number: 00-1055.5  
 Location: 11082  
 Date Received: 12/12/2008  
 Date Complete: 2/12/2009  
 Tested By: C. BROWN/AC/10/08/09

PERCENT PASSING	SIEVE SIZE	AMOUNT (Approximate)	
100%	5"	100	
100%	3"	100	
100%	4"	100	
99.1%	2"	100	
90.3%	2"	100	
38.1%	1.18"	100	
28.7%	1"	100	
19%	3/4"	100	
12.7%	1/2"	34	
6.05%	1/4"	36	
4.76%	No. 4	76	34 - 3% Gravel
2%	No. 10	24	
3.04%	No. 20	15	
1.42%	No. 40	25	8 - 2% Sand
0.25%	No. 60	18	
0.142%	No. 100	13	
0.075%	No. 200	8.1	2 - 1% Fines

BROWN GRAVELLY SAND SOME SILT



## APPENDIX A

# S.W. COLE

ENGINEERING INC  
 COMMERCIAL BUILDINGS

## BORING LOG

BORING NO. **E-1**

SHEET **1 OF 1**

PROJECT NO. **00-108**

DATE START **11/18/2012**

DATE FINISH **11/18/2012**

LOCATION **IG**

SWELL FACTOR **0.90**

PROJECT NO. **00-108** PROJECT NAME **RECONSTRUCTION OF BRIDGE OVER RIVER**  
 LOCATION **WASHINGTON STREET PORTLAND, MAINE**  
 DRAWING NO. **MAINE TEST BORINGS INC** DRILLER'S NO. **00774**

LOG NO.	DEPTH	TYPE	REMARKS
451			
BR	1.50'	1.50'	1.50'

WATER LEVEL INFORMATION  
 (None recorded @ 11)

DEPTH (FEET)	SPT				SPT				REMARKS
	NO.	25'	50'	75'	15'	30'	45'	60'	
0-10	24	18	14	10	4	4	3	3	GRAY CRUSHER MATERIAL (GROB) AT 10' 5' BELOW GROUND BROWN SAND WITH SOME SILT AND GRAVEL (POSSIBLE FILL)
10-20	24	18	14	10	5	4	3	3	
20-30	21	16	12	9	3	3	2	2	- LOOSE - BROWN SILTY SAND WITH SOME GRAVEL AND FILL MATERIAL
30-40	21	16	12	9	4	3	3	3	GRAY SILTY SAND WITH TRACE GRAVEL AND ROTTEN WOOD
40-50	21	16	12	9	3	2	2	1	- LOOSE - 14-20% COARSE SAND WITH SANDSTONE SILT LAYERS ROTTEN WOOD ENCOUNTERED @ 40'
50-60	18	14	10	7	3	3	2	1	
60-70	18	14	10	7	3	3	2	1	
70-80	18	14	10	7	3	3	2	1	- LOOSE - BROWN SILTY SAND WITH SANDSTONE LAYERS
80-90	18	14	10	7	4	3	2	2	AND SILT 14-20% BROWN SILTY SAND WITH SOME COARSE SAND - LOOSE TO MEDIUM DENSE - BOTTOM OF EXPLORATION @ 90'

SAMPLE NO. \_\_\_\_\_ SOIL CLASSIFIED BY \_\_\_\_\_ OPERATOR \_\_\_\_\_  
 INPUT SPEED \_\_\_\_\_  
 CORRECTION FACTOR \_\_\_\_\_  
 LABORATORY TEST \_\_\_\_\_  
 STRATIFICATION LINE REPRESENTS APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND SOIL TRANSITION MAY BE GRADUAL  
 BORING NO. **E-1**



# S.W. COLE

ENGINEERING, INC.  
GEOTECHNICAL CONSULTANTS

## BORING LOG

BORING NO. B-2

PROJECT: PROPOSED BOAT STORAGE AND TRACT HOUSE  
 LOCATION: ADJACENT TO THE PORTLAND MARINE  
 DRILLING FIRM: WAINWRIGHT BORINGS, INC. OPERATOR: WELCH, N.

SOIL NO. 1051

PROJECT NO. 111983

DATE START 11/19/66

DATE FINISH 11/19/66

ELEVATION 17.0

TEST TYPE: SS SIZE (U.S.): 100 HAMMER: A HAMMER FALL: 50  
 SAMPLING: SS 100 100 50  
 CORE BARREL: \_\_\_\_\_

SAND TEST: ONE

WATER LEVEL INFORMATION

Water Observed at Depth (ft): \_\_\_\_\_

Water Observed at Time (Day, Hour): \_\_\_\_\_

DEPTH (FEET)	CORRECTION (FEET)	PENETRATION RESISTANCE (BLows)				SOIL DESCRIPTION
		10'	20'	30'	40'	
0	0	1	1	1	1	GRAY SILTY CLAY (RECENT FL)
1	0	1	1	1	1	BROWN SAND WITH SOME SILT AND GRAVEL (RECENT FL)
2	0	1	1	1	1	GRAY SANDY SILTY CLAY WITH SILT AND GRAVEL (RECENT FL)
3	0	1	1	1	1	GRAY SILTY CLAY WITH SILT AND SAND (AFC)
4	0	1	1	1	1	GRAY SILTY SAND WITH GRAVEL
5	0	1	1	1	1	PROBABLE MEDIUM DENSE GRANULAR SAND (NO SAMPLING)
6	0	1	1	1	1	RED SAND WITH GRAVEL

NOTES: \_\_\_\_\_

SOIL CLASSIFIED BY: \_\_\_\_\_

REMARKS: \_\_\_\_\_

FIELD METHOD  
 SHALLOW TYPE  
 LABORATORY TEST

STRATIFICATION LINES APPROXIMATE  
 APPROXIMATE SOIL BOUNDARIES BETWEEN SOIL TYPES  
 AND THE TRANSITION MAY BE GRADUAL

3

BORING NO. B-2

# S.W. COLE

ENGINEERING, INC.  
GEOLOGICAL CONSULTANTS

## BORING LOG

LOGGING NO. B-3  
SHEET 1 OF 1  
PROJECT NO. 06-053  
DATE START 11/17/00  
DATE FINISH 11/17/00  
ELEVATION 107  
S.W. REF. CWS

PROJECT / CLIENT 1100 CHILDREN'S HOSPITAL, 100 DOWD AVENUE, BOSTON  
LOCATION KENSINGTON STREET PORTLAND, MAINE  
DRILLING FIRM MAINE TEST SPRINGS, INC. DRILLER WELSH, JIM

	TYPE	DEPTH	HAMMER W	HAMMER FAL
CASING	11A	4"	100 LB	30"
SAMPLER	SS	100"	100 LB	30"
COPE FERRULE				

WATER LEVEL INFORMATION  
Water Chemistry (pH)  
After Casing Pulls

DEPTH (FEET)	CORRECTION (FEET)	CORRECTION				TOTAL CORRECTION	DEPTH (FEET)	REMARKS
		1	2	3	4			
0	0	0	0	0	0	0	0	BEAN CRUSHER MATERIAL (SEVENTH FLOOR)
17	0	0	0	0	0	17	17	BROWN SAND WITH SOME SILT AND GRAVEL (FOURTH FLOOR)
32	0	0	0	0	0	32	32	W. SILT
36	0	0	0	0	0	36	36	MEDIUM DENSE
37	0	0	0	0	0	37	37	BROWN GRAY CLAY - SILTY SAND WITH TRACE GRAVEL (SIXTH FLOOR)
43	0	0	0	0	0	43	43	COFFIN
43	0	0	0	0	0	43	43	BROWN-BLACK PEAT WITH GRAY SILTY CLAY LAYERS (SEVENTH FLOOR)
50	0	0	0	0	0	50	50	MEDIUM DENSE
62	0	0	0	0	0	62	62	LAYERED GRAY AND BROWN CLAY SILTY SAND
70	0	0	0	0	0	70	70	MEDIUM DENSE
70	0	0	0	0	0	70	70	GRAY BROWN SILTY SAND WITH TRACE OF GRAVEL
80	0	0	0	0	0	80	80	MEDIUM DENSE BROWN CLAY
80	0	0	0	0	0	80	80	GRAY SILTY SAND WITH TRACE GRAVEL (EIGHTH FLOOR)

SAMPLES:	SOIL CLASSIFICATION:	REMARKS:
<input type="checkbox"/> SPLIT SPOON <input checked="" type="checkbox"/> MONROE TUBE <input checked="" type="checkbox"/> 10" T'S-ELEY TUBE	<input checked="" type="checkbox"/> DRILLER VISUALLY <input checked="" type="checkbox"/> SOIL TECH VISUALLY <input checked="" type="checkbox"/> LABORATORY EST	BATHYMETRIC DATA REPRESENTS THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL

# S.W. COLE

ENGINEERING, INC.  
 CIVIL ENGINEERS

## BORING LOG

BORING NO. 8-3

SHEET 1 OF 1

PROJECT NO. 201082

DATE START 10/7/2002

DATE FINISH 10/7/2002

ELEVATION 102

SAC REP ONE

WATER TABLE INFORMATION

WATER TABLE 5 1

PROJECT / CLIENT: PROPOSED SOLID STORAGE BUILDING / JOHN HAYES

LOCATION: KENSINGTON STREET HOUSING AND NEIGH

BORING NO. / NAME: 8-3 / BURNING INC.      OPER: WELCOFF N

DEPTH	TYPE	SIZE (D)	HAMMER AT	HAMMER FALL
450				
50		2.5"	14.0"	20"

DEPTH	TYPE	SIZE (D)	HAMMER AT	HAMMER FALL
10	2"	17	13.0"	21
20	2"	15	13.0"	20
30	2"	15	13.0"	20
40	2"	15	13.0"	20
50	2"	15	13.0"	20
60	2"	15	13.0"	20
70	2"	15	13.0"	20
80	2"	15	13.0"	20
90	2"	15	13.0"	20
100	2"	15	13.0"	20
110	2"	15	13.0"	20
120	2"	15	13.0"	20
130	2"	15	13.0"	20
140	2"	15	13.0"	20
150	2"	15	13.0"	20
160	2"	15	13.0"	20
170	2"	15	13.0"	20
180	2"	15	13.0"	20
190	2"	15	13.0"	20
200	2"	15	13.0"	20
210	2"	15	13.0"	20
220	2"	15	13.0"	20
230	2"	15	13.0"	20
240	2"	15	13.0"	20
250	2"	15	13.0"	20
260	2"	15	13.0"	20
270	2"	15	13.0"	20
280	2"	15	13.0"	20
290	2"	15	13.0"	20
300	2"	15	13.0"	20
310	2"	15	13.0"	20
320	2"	15	13.0"	20
330	2"	15	13.0"	20
340	2"	15	13.0"	20
350	2"	15	13.0"	20
360	2"	15	13.0"	20
370	2"	15	13.0"	20
380	2"	15	13.0"	20
390	2"	15	13.0"	20
400	2"	15	13.0"	20
410	2"	15	13.0"	20
420	2"	15	13.0"	20
430	2"	15	13.0"	20
440	2"	15	13.0"	20
450	2"	15	13.0"	20
460	2"	15	13.0"	20
470	2"	15	13.0"	20
480	2"	15	13.0"	20
490	2"	15	13.0"	20
500	2"	15	13.0"	20

GENERAL REMARKS:

DRY SILTY SAND WITH SOME GRAVEL (TL)

ROD PROBE REF. 8-3, @ 49.5'

SAMPLES: C-SPIND BY T.6E UAC-15-E BY T.6E	SOIL CLASSIFIED BY:	REMARKS:  STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL.	5
	DR. PER-150W BY G.M. VISUALLY LABORATORY TEST		

# S.W. COLE

ENGINEERING, INC.  
CORPORATE OFFICE

## BORING LOG

BORING NO. B-4  
SHEET 1 of 1  
PROJECT NO. 03-138  
DATE START 11/16/2000  
DATE FINISH 11/16/2000  
ELEVATION 700  
BNC REP. BWB

PROJECT/CLIENT: PROPOSED BENT STOPPAGE ON I-5 NORTH AVENUE  
LOCATION: KENNINGTON STREET PORTLAND, MAINE  
DILLING FIRM: WAINFRIED BURLING INC. DRILLER: WEL CORBIN

LOG NO. HW  
SAMPLER: SS 100' 1/2" 1/2" 10"  
CORE BARREL

WATER LEVEL INFORMATION  
Water Table was at 0' on  
November 17, 2000 (during log)

DEPTH FEET	SAMPLER				SAMPLER				REMARKS
	IN	OUT	IN	DEPTH FEET	IN	OUT	IN	DEPTH FEET	
20									GRAY CRUSHER MATERIAL (MATERIAL FILL)
25	12	24	12	4.2	6	6	10	10	MEDIUM SAND BROWN SAND WITH SOME SILT AND GRAVEL (RECENT FILL)
30	16	24	16	7.2	6	6	7	7	GRAY-BLACK ORGANIC SILT (OLD DREDGE SAND) (RECENT FILL)
35									GRAY SANDY SILT (BY MIDDLE)
40	16	24	16	12.0	4	4	2	3	
45									GRAY CLAYEY SILT WITH GRAVEL AND GRAVEL
50	16	24	16	21.0	1	1	3	3	CLAYEY
55									CLAYEY
60	16	24	16	26.0	2	2	3	7	LAMINATED CLAY AND SILT WITH SILTY SAND
65									
70	16	24	16	29.0	2	2	3	3	
75									
80									
85	16	24	16	31.5	2	2	3	3	-MEDIUM DENSE TO DENSE- BROWN SILTY SAND WITH SOME GRAVEL (CLAYEY)
90									
95									
100									BOTTOM OF EXPLORATION @ 31.5'

SAMPLES:                      SOIL CLASSIFIED BY:                      REMARKS: STRATIFICATION UNUSUAL IN THIS CASE. APPROXIMATE BOUNDARY BETWEEN SOIL TYPES 1 AND 10 TRANSITION MAY BE GRADUAL.

-SPL. (SAND)  
 -SPL. (SILT)  
 -SPL. (CLAY)

OK - BR - VISUALLY  
 OK - SILT - VISUALLY  
 OK - CLAY - VISUALLY

BCR LOG NO.                      E-4

# S.W. COLE

# BORING LOG

BORING NO.	0-3
SHEET	1 OF 1
PROJECT NO.	25-196
DATE START	11/16/59
DATE FINISH	11/22/59
LOCATION	See
SCALE	2:1

ENGINEERING, INC.  
REGISTERED PROFESSIONALS

PROJECT CLIENT: PROPOSED NEW STORAGE BUILDING (SOUTH SIDE) - 100 FT. HAVEN  
 LOCATION: 205 WASHINGTON STREET, PORT AND, MAINE  
 DRILLING FIRM: MINE TEST BORING, INC. DRILLER: W.E. JOHNSON

DATE OF TEST DATA: 11/16/59  
 DATE OBSERVED: 11/16/59  
 DATE OF REPORT: 11/22/59

CASING SAMPLER CORE BARREL	TYPE		SAMPLER		PENETRATION		REMARKS	
	NO.	SIZE	TYPE	NO.	TYPE	TYPE	REMARKS	
	83	1.50	NO. 1	NO. 1	NO. 1	NO. 1		

DEPTH (FEET)	SAMPLE				SAMPLER LOG DATA			
	NO.	DATE	DEPTH (FEET)	DEPTH (FEET)	NO.	TYPE	NO.	TYPE
0								
10	24	12'	10'	5	1	8		
20	26	17'	15'	5	1	8		
30	27	11'	15'	4	1	8		
40	24	15'	15'	3	1	8		
55	24	14'	20'	1	2	8		
70	24	10'	20'	3	1	8		

DEPTH (FEET)	DESCRIPTION	REMARKS
0 - 10	GRAY CRUSHER MATERIAL (SHELLS) - 10' TO 15' (SHELLS)	
10 - 20	GRAY CRUSHER MATERIAL (SHELLS) - 10' TO 15' (SHELLS)	
20 - 30	GRAY CRUSHER MATERIAL (SHELLS) - 10' TO 15' (SHELLS)	
30 - 40	VERY STIFF SANDY GRAY BROWN SILTY CLAY	0.750 CF
40 - 55	BROWN CLAYEY SILT WITH FINE SAND AND SILT - 10% TO 15% SAND CONTENT	0.750 CF
55 - 70	MEDIUM DENSE TO... BROWN SILTY SAND WITH FINE CLAY LAYERS WITHING	0.750 CF
70 - 80	... LOOSE ... GRAY SILTY SAND WITH SOME GRAVEL - LOOSE TO MEDIUM DENSE	0.750 CF
80 - 100	BOTTOM OF EXPLORATION @ 27'	

SAMPLES: - SHAN SHELBY CASE & SHELBY TUBE 10-1/2" SHELBY TUBE	SOIL CLASSIFIED BY: [ ] [X] [X]	CLASSIFIED BY: DRILLER - W.E. JOHNSON SOIL TEST - MANUALLY LABORATORY TEST	REMARKS: STRATIFICATION LINES REPRESENT THE APPROPRIATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRANULAR	BORING NO. 0-3 SHEET 1 OF 1
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# S.W. COLE

ENGINEERING, INC.  
INCORPORATED 1952

## BORING LOG

BORING NO. B-3  
 SHEET: 1 OF 1  
 PROJECT NO. 00-1054  
 DATE START 11/27/57  
 DATE FINISH 11/28/57  
 ELEVATION 302  
 GWT DEP. GWT  
 WATER LEVEL INFORMATION  
 Date Observed 11/27

PROJECT CLIENT: PROPOSED BOSTON JUDGE BUILDING - FACIT HALL  
 LOCATION: MORNINGSTAR STREET BOSTON, MASS  
 DRILLING FIRM: MAINT TEST BORINGS, INC DRILLER: MR. WHELAN

CASING: TYPE H34 SIZE (O.D.) 3.125" HAMMER WT. 140 LB HAMMER FALL 25"  
 SAMPLER: TYPE SB SIZE (O.D.) 1.50" HAMMER WT. 140 LB HAMMER FALL 25"  
 CORE BARREL: TYPE SB SIZE (O.D.) 1.50" HAMMER WT. 140 LB HAMMER FALL 25"

DEPTH (FEET)	SAMPLER RECORD				CORRECTION RECORD				CORRECTION	DESCRIPTION	REMARKS
	START	STOP	RETR.	RETR.	START	STOP	RETR.	RETR.			
0.0									ASPHALT PAVEMENT		
2.5									BLACK COAL ASH (SOIL FILL)		
4.5	10	24	12	40	12	8	5	2	BROWN-FINE SILTY GRAVELLY SAND (CL. FT.) - MEDIUM DENSE		
13	25	24	30	17.9	4	2	5	2	FINE SILTY BROWNISH CLAY	q <sub>u</sub> = 1.5 ksf	
15	30	24	25	12.0	2	2	1	1	CLAY	q <sub>u</sub> = 2.5 ksf	
21.5	42	24	20	7.7					CLAY SILTY SAND WITH SILTY CLAY LAYERS	q <sub>u</sub> = 3.5 ksf	
23.5	32	24	20	7.7					CLAY SILTY SAND		
24.5	30	24	18	7.0	2	3	3	1	MEDIUM SAND		
24.5	30	24	18	7.0	2	3	3	1	BROWN SANDY SILT OR SILTY SAND WITH SOME SILTY CLAY LAYERS		
24.5	30	24	18	7.0	2	3	3	1	MEDIUM SAND		
24.5	30	24	18	7.0	2	3	3	1	TRACE GRAVEL		
24.5	30	24	18	7.0	2	3	3	1	AUGER REFUSAL @ 24.5		

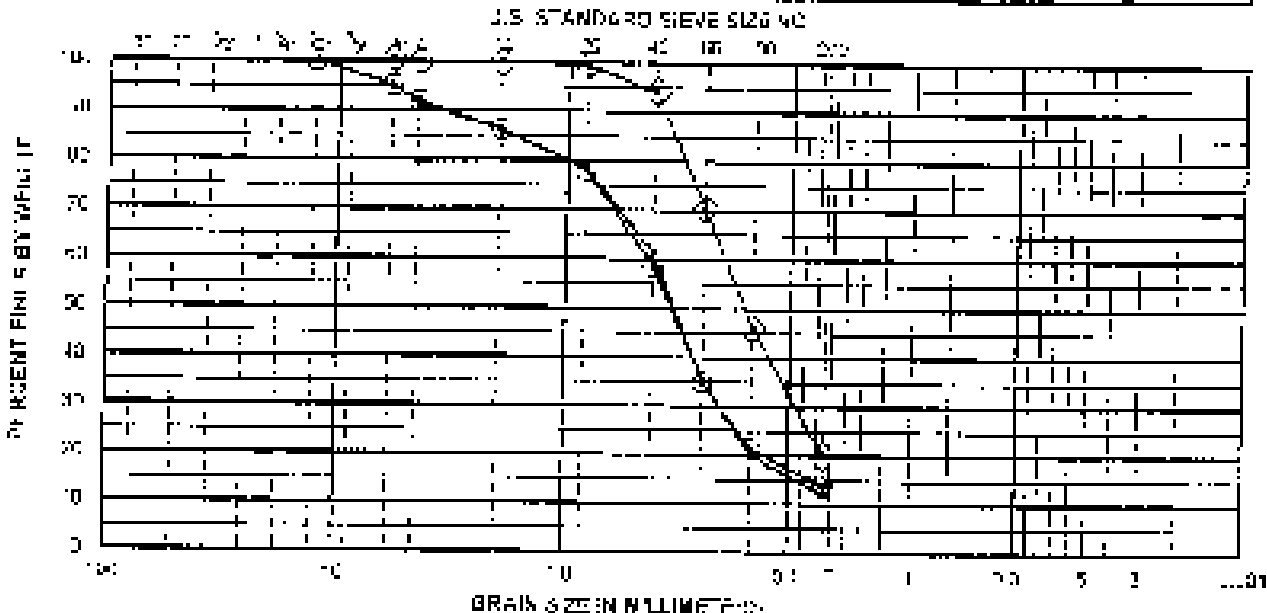
SAMPLES: SB CLASSIFIED BY: SB  
 W/PT SPOON  
 W/PT SHELBY CORE  
 W/PT SHELBY CORE  
 TRAILER VISUALLY  
 SOLIDIFIED - SUPLY  
 LABORATORY TEST

REMARKS: SIGNIFICANT LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION FROM SAND TO SILT.  
 BORE NO. B-3



# GRAIN SIZE ANALYSIS

COBBLE	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COAR.	MEDIUM	FINE	



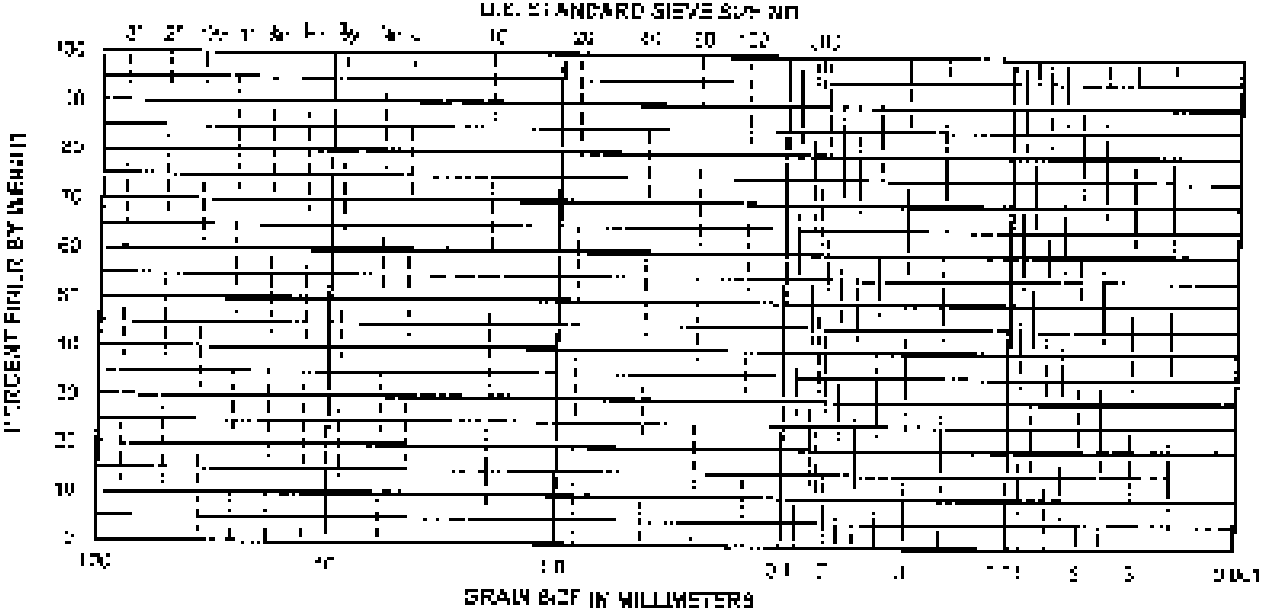
PLOT	SOURCE	SAMP.	DEPTH	CLASSIFICATION	W%
1	A-1	5-1		SAND WITH SOME SILT AND GRAVEL	90%
2	B-3	5-1		SAND WITH SOME SILT AND GRAVEL	70%
3	5-1	5-1		SILTY SAND	21.5%

M. DICK, S. W. COLE ENG. ENGINEERING, INC., 141



# GRAIN SIZE ANALYSIS

COBBLE	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COAR.	MEDIUM	FINE	



PLOT	SOURCE	SAMP.	DEPTH	CLASSIFICATION	W%

1065-1065-1065 GS DWG, FULL SHEET, UTM 2503 04 0

## APPENDIX B





# BORING LOG

BORING NO. B-02-3  
 SHEET 1 OF 1  
 PROJECT NO. 01-008-1  
 DATE START 11/26/02  
 DATE FINISH 11/26/02  
 ELEVATION MC SURVEY DATA  
 SWISSER RBC

STATION YACHT HAVEN BOAT RAMP FULL ED ENGINEERING  
 LOCATION PORTLAND, MAINE  
 DRILLING NO. SOUTH-BEN TEST BORINGS COLLAR WIRE WOUND

DATE 11/26/02 TIME 8:30 AM HAMMER WT 140 LB HAMMER FALL 30"  
 SAMPLE NO. 10 20 30 40 50  
 WIRE BARREL 1.5" DIA

WATER LEVEL INFORMATION  
 TIDE GAUGE

DEPTH (FEET)	SAMPLER				SAMPLER LOCATION				REMARKS
	IN	OUT	IN	OUT	IN	OUT	IN	OUT	
10	14"	15"	15"	15"	1	2	3	4	SHOWS TO BE BLACK SILT UNTO CORRESPONDING TRACE SILT BLACK SILT SANDY SILT MIXTURES WITH WT OF HEAVY MINOR ASH AND PETROLEUM OILS FLOOSE
20	31"	17"	17"	17"	1	6	14	15	
30	21"	8"	8"	8"	2	10	4	1	GRAY FINE SAND WITH SOME SILT AND ORGANICS FLOOSE
40	21"	16"	16"	16"	2	4	7	7	
50	14"	17"	16"	16"	1	2	2	2	LOOSE LOAMY SILT FINE SAND WITH SILT AND ASH INDICATORS

POSSIBLE METHODS  
 FOR CORRELATION AT 10'±  
 PLEASE REFER TO


3 ES SOIL CLASSIFIED BY  
 11 - 3/4" DIAMETER  
 0 - 1/2" DIAMETER  
 U - 1.5" SHELBY TUBE  
 DRILLER (INITIALS)  
 SOIL TEST (INITIALS)  
 LABORATORY TEST

REMARKS  
 STRATIFICATION LINES REPRESENT THE  
 APPROXIMATE BOUNDARY BETWEEN SOIL TYPES  
 AND THE TRANSITION MAY BE GRADUAL  
 BURNING NO. B-02-3



# BORING LOG

BORING NO. B-02-4  
 SHEET: 1 OF 2  
 PROJECT NO. 10-1000-2  
 DATE START: 12/02  
 DATE FINISH: 12/02  
 ELEVATION: 22.4'  
 SWD REF.: KEG

CLIENT: WEST HARRIS COUNTY SEWER TREATMENT PLANT UPGRADE BUILDING, ALLIED ENGINEERING  
 LOCATION: INDIAN LAND, MOBILE  
 DRILLING CO.: GREAT WORKS TEST BORING INC. OPERATOR: PETER WICKHAUL

CASING TYPE: 4"  
 SAMPLER: SS 1.58" ID 40 D 30"  
 CORRECTION: N 0"

WATER LEVEL INFORMATION  
 SOIL SATURATED UNIT WEIGHT: 118

DEPTH FEET	CORRECTIONS				SAMPLES				REMARKS
	NO.	REV.	SEC.	DEPTH FEET	NO.	REV.	DEPTH FEET	NO.	
0									<p>BRKEN UP SAND (HARDENED)</p> <p>30% GRAVELLY SAND SOME SILT (FL)</p> <p>-MEDIUM DENSE-</p> <p>TRANSITION TO MEDIUM TO DENSE SAND SOME GRAVEL (FL)</p> <p>-LOOSE-</p> <p>(BORING LOCATED IN VICINITY OF PREVIOUS SOIL EXCAVATION AND REPLACEMENT OF CONTAMINATED SOILS ACCORDING TO DISTRICT LOCAL ORDINANCE)</p> <p>GRAY SILTY CLAY</p> <p>10% GRM</p> <p>SPHAGNUM</p> <p>10% S.I.</p> <p>1% HUMUS</p> <p>WITH SOME BLACK STAINING AND SMALL GRAVEL</p>
10									
20									
30									
40									
50									
60									
70									
80									
90									
100									

SOIL CLASSIFIED BY: \_\_\_\_\_

REMARKS: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND DISTINCTIONS MAY OCCUR.

LEGEND:  
 = SPLIT SALON  
 - 3" S-BLBY H.T.P.  
 || 1.5" S-BLBY T.L.S.E.

TESTING:  
 TRIUMPH VISUALLY  
 SOIL TECH VISUALLY  
 LABORATORY TEST

BORING NO. B-02-4



# BORING LOG

BORING NO. B-02-A  
 SHEET 1 OF 2  
 PROJECT NO. 20-10854  
 DATE START 12/9/02  
 DATE FINISH 12/9/02  
 ELEVATION 22.4'  
 TYP. HELL RSC

BY CLIENT: WAGNER HAVEN 4000 RZ ROAD STORAGE BUILDING VALUE ENGINEERING  
 LOCATION: PORTLAND, MAINE  
 BILLING CO.: GEAR WORKS TESTING INC. ORDER: PETER MICHALC

TASING: HV SIZE: 10 HAMMER WT. 140 LB HAMMER FALL 30"  
 LAST PEN 20 13.8' 140 LB 30"  
 CORE BARREL 10 30"

WATER LEVEL INFORMATION  
 GWT IS SATURATED BELOW 22.4'

DEPTH (FEET)	DEPTH (METERS)	LOG	TEST DATA
0	0.0		GRAVEL AND SAND -AGGREGATE-
43.0	12.8		GRAY SILTY SAND -MEDIUM DENSE-
44.7	12.7		MEDIUM DENSE - BROWN MEDIUM SAND GRADE SILT
45.2	12.9		GRAY SILTY SAND SOME GRAVEL TRACES PLAIN SILT -MEDIUM DENSE-
54.4	15.7		WAS HEARD ROCK
55.0	15.8		BED ROCK CORE
51.0	14.6		BOTTOM OF LITHIFICATION AT 51.0

BY: \_\_\_\_\_ SOIL CLASSIFIED BY: \_\_\_\_\_ REMARKS: \_\_\_\_\_  
 ✓ 3" SHELBY TUBE  ORDER VISUALLY  
 ✓ 3" SHELBY TUBE  SOIL TECH. VISUALLY  
 ✓ 3" SHELBY TUBE  LABORATORY TEST  
 REMARKS: (CONTINUED FROM PREVIOUS SHEET) THE APPROXIMATE, PRELIMINARY DEPTH OF SOIL TYPES AND THE TRANSITION MAY BE GRADUAL.  
 TYPING NO. 10 B-02-A



**S.W. COLE**  
ENGINEERING

**BORING LOG**

BORING NO.:	B-02-5
DATE:	10/1
PROJECT NO.:	04-10054
DATE START:	10/01
DATE FINISH:	10/02
ELEVATION:	22.00
SND REP.:	485

CLIENT: WACHMAN SERVICE & STORAGE BUILDING VALUE ENGINEERING  
 LOCATION: PORTLAND MAIN  
 DRILLING CO.: ARREST WORKS TEST BORING INC. DRILLER: PATRICK WICKARD

CASING:	HW	4"
SAMPLER:	SC	100'
LOGS SAMPLES:		

WATER LEVEL INFORMATION  
 NO FREE WATER OBSERVED  
 WELS APPEARED SATURATED AT 17'

DEPTH (FEET)	SAMPLER BLOW COUNT				SPT	CORRECTION	SPT	CORRECTION	REMARKS
	NO	NO	NO	NO					
0									ASPHALT PAVEMENT
1.5									MEDIUM DENSE - BROWN GRAY SILTY SAND WITH SOME SILT
4.0									MEDIUM DENSE - BLACK SILTY SAND SOME CLAY (FILL) FEED COLUMNS (FILL)
10									MEDIUM DENSE - FINE GRAY SAND BEAMS TRANSITIONING TO... SPT = 10 CORRECTION = 0.00
19.3									MEDIUM DENSE - BROWN SILTY SAND SPT = 10 CORRECTION = 0.00
25.0									MEDIUM DENSE - BROWN SILTY SAND WITH OCCASIONAL SAND BEAMS SPT = 10 CORRECTION = 0.00
35.0									MEDIUM DENSE - GRAY SILTY SAND SPT = 10 CORRECTION = 0.00
47.0									MEDIUM DENSE - BROWN SILTY SAND LAYERED WITH BROWN MEDIUM SAND SOME SILT SPT = 10 CORRECTION = 0.00
67.0									MEDIUM DENSE - BROWN SILTY SAND SPT = 10 CORRECTION = 0.00
70.0									MEDIUM DENSE - GRAY SILTY SAND SPT = 10 CORRECTION = 0.00

SOIL CLASSIFIED BY: [Signature]  
 - SALT STAIN  
 - SULFIDE TYPE  
 - ORGANIC TYPE

REMARKS:  
 APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE SMOOGL  
 (R)  
 DRAWING: B-02-5



# BORING LOG

BORING NO. B-02-6  
 SHEET 2 OF 2  
 PROJECT NO. 70-0054  
 DATE START 12/02  
 DATE FINI 12/02  
 ELEVATION 22.4  
 SMO REP. KBT

CLIENT YACHT HARBOR BOAT YACHT STORAGE SALES (INCORPORATED) COMPANY  
 LOCATION PORTLAND, MAINE  
 BOLLING NO. GREAT WORKS TEST BORING NO. DRILLER PETER MICH-POD

WATER LEVEL INFORMATION  
 NO FREE WATER OBSERVED  
 MOISTURE APPEARED SATURATED AT 12' H.

TYPE        SIZE        HAMMER WT        HAMMER FALL  
 RATE        FEET         
 WALS        FEET        140 LB        30"

SOIL SAMPLES

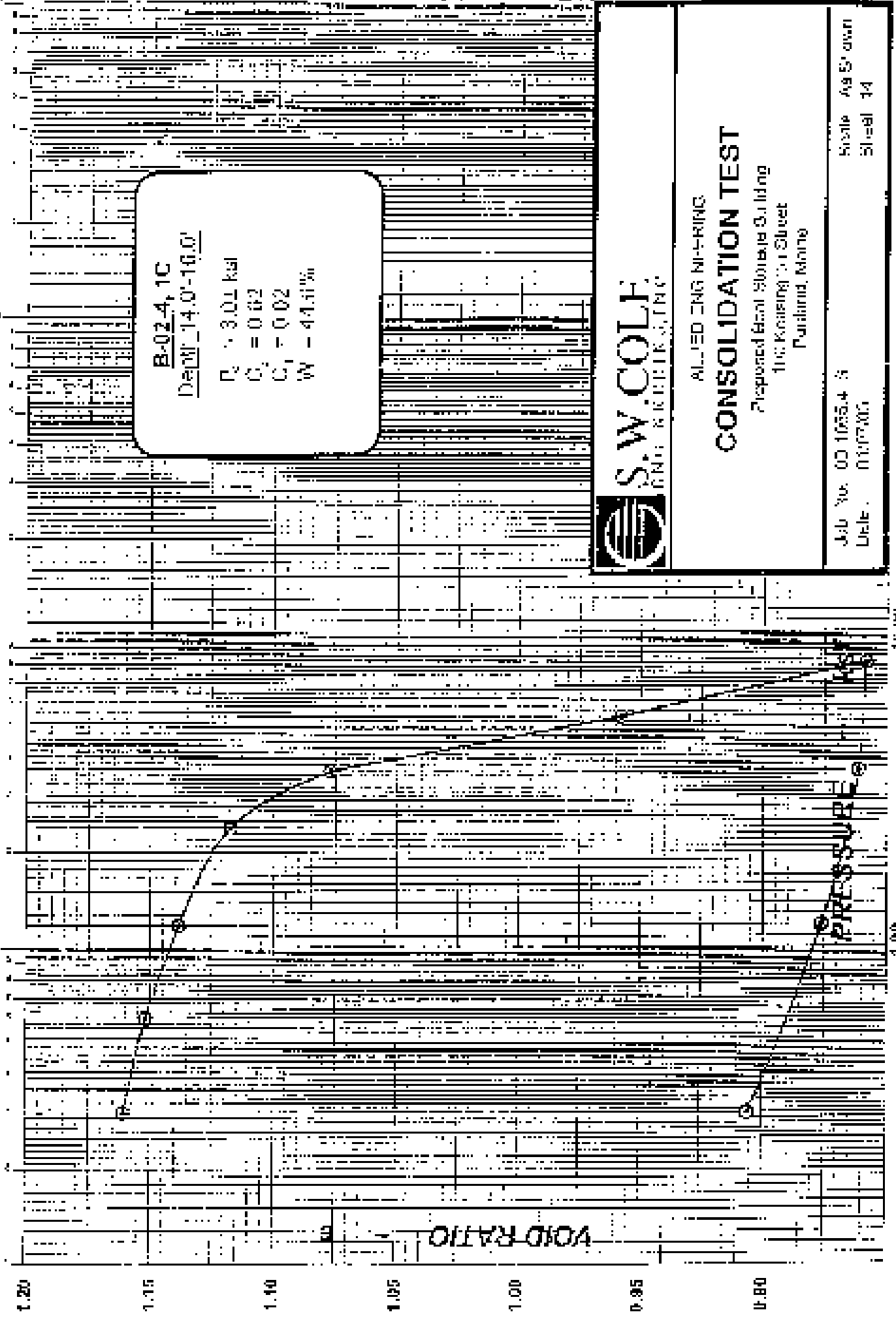
SNG NO.	SAMPLE				SNG NO.				REMARKS
	NO.	DEPTH	REMARKS	WATER	NO.	DEPTH	REMARKS	WATER	
30	24"	17'	41.0	15	9'	8'	7'	DENSE MEDIUM SAND BRITTLE SANDS LAYERS OF THE FINE MEDIUM SAND - MEDIUM GRAIN MEDIUM GRAIN SAND SOME GRAVEL TRACKS AT 11' MEDIUM GRAIN	
100	24"	17'	41.0	14	14'	13'	23'	WEATHERED ROCK WITH FINE GRAIN SAND PROBABLE REMAINS BOTTOM OF EXPLORATION AT 23'	

SOIL CLASSIFIED BY:  COLLIER - USUALLY SOIL TEST - USUALLY LABORATORY TEST

REMARKS: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL

12

BORING NO.: B-02-6



ALLIED ENG. MILLING

### CONSOLIDATION TEST

Proposed East Shore Building  
 The Kenning Dr. Street  
 Portland, Maine

Job No. 00 1055.4 3  
 Date: 01/07/05

Scale: As Shown  
 Sheet: 14

## Test Pit: TP-104

Depth (ft.)	Description
0-0.3	Asphalt pavement.
0.3-1.6	Yellow-brown SAND with coarse gravel, trace concrete and red clay pipe fragments (III).
1.6-4.4	Medium gray silty CLAY-SILT with nodding, mixed with concrete and dark brown gravelly sand (see table III).
4.4-5.4	Dark brown sandy CLAY-SILT with petroleum stain resembling fuel oil (III).

- Bottom of Excavation at 5.4 ft.
- No leakage noted.
- Collected samples for PDI hydrocarbon and free-product shake tests from 4.4-5.4 ft.
  - PDI Hydrocarbon (fuel oil equivalent) = 28.4 ppm
  - Free-product shake test = no show of product vapor observed

## Test Pit: TP-105

Depth (ft.)	Description
0-2.6	Dark brown silty SAND, some rounded nodules and gravel (III). Concrete structure visible in fuel oil streaks. <ul style="list-style-type: none"> <li>• Bottom of excavation at 2.6 ft.</li> <li>• See report 03-01.</li> <li>• Collected samples for PDI hydrocarbon and free-product shake tests at 1.0 ft.               <ul style="list-style-type: none"> <li>➢ PDI hydrocarbon (fuel oil equivalent) = 2.1 ppm</li> <li>➢ Free-product shake test = no show of product vapor observed</li> </ul> </li> </ul>



Test Pit: TP-108

Depth (ft.)	Description
0-4.3	Dark brown gravelly SAND with trace cobbles, brick fragments, angular cobbles (2-3 ft. in long dimension), and asphalt pebbles (fill). Petroleum odor resembling fuel oil. Seepage at 4.3 ft. with minimum height of water surface.
4.3-4.4	Reddish brown angular gravel (fill); petroleum odor resembling fuel oil
4.6-5.4	Medium gray silty CLAY (SILT) (fill) <ul style="list-style-type: none"> <li>• Bottom of Exploration at 5.4 ft.</li> <li>• Seepage 0 ft.</li> <li>• Collected samples for F/D headspace and free-product shake tests at 4.6-4.6 ft.               <ul style="list-style-type: none"> <li>➢ F/D headspace (fuel oil equivalent) = 4.0 ppm</li> <li>➢ Free-product shake test = steam present, but no product layer observed</li> </ul> </li> </ul>

Test Pit: TP-109

Depth (ft.)	Description
0-0.4	Dark brown silty SAND (under glass cover) (fill)
0.4-0.9	Asphalt pavement
0.9-1.4	Yellow-brown gravelly SAND (fill)
1.4-1.6	Asphalt pavement
1.6-1.8	Angular bed stone (1-3/4" dia)
1.8-2.0	Yellow-brown gravelly SAND mixed with medium gray SAND (fill)
2.0-4.0	Medium gray CLAY (SILT) with nodules of it
4.0-5.6	Medium gray CLAY (SILT) on trench sidewall adjacent to medium SAND pipe bedding (fill). Bedding made surrounding 4-3" diameter PVC pipe oriented horizontally and trending at sharp angle to shoreline. Top of pipe at 5.6 ft. Petroleum odor resembling fuel oil present in clay; thin smoky color visible in bedding sand. <ul style="list-style-type: none"> <li>• Bottom of Exploration at 5.6 ft.</li> <li>• Seepage 0 ft.</li> <li>• Collected samples for F/D headspace and free-product shake tests at 5.4 ft. in clay (fill)               <ul style="list-style-type: none"> <li>➢ F/D headspace (fuel oil equivalent) = 0.0 ppm</li> <li>➢ Free-product shake test = steam present, but no product layer observed</li> </ul> </li> </ul>





**Test Pit: TP-110A**

Depth (ft.)	Description
0-1.5	Southern side of test pit consists of gravel, sand, silt, and concrete mixture (fill); Northern portion of test pit consists of regular sand (fill).
1.5-2.0	Concrete slab.
	<ul style="list-style-type: none"> <li>Bottom of exploration at 2.0 ft. covered by another location.</li> </ul>

**Test Pit: TP-110B**

Depth (ft.)	Description
0-5.5	Yellow-brown medium-coarse SAND (some yellow grease particles and trace gray clay) fill masses (fill) produced from disposal final line at 5.5 ft.
	<ul style="list-style-type: none"> <li>Bottom of Exploration at 5.5 ft.</li> <li>Seepage at 4.3 ft.</li> <li>Collected samples for PID headspace and free product shake tests from:               <ul style="list-style-type: none"> <li>B-110B headspace (fuel oil equivalent) = 3.0 ppm</li> <li>Free product shake test and sheen present (gray color) observed.</li> </ul> </li> </ul>

**Test Pit: TP-111A**

Depth (ft.)	Description
0-1.2	Dark gray CLAYE L <sup>+</sup> with purple/black color resembling fuel oil (fill).
1.2-5.2	Yellow-brown medium SAND (fill) encountered from 3" wooden beam at 2 ft depth overlying steel reinforced beam. Red-brown color resembling fuel oil at 4.0 ft. Sand has light gray color below this depth.
	<ul style="list-style-type: none"> <li>Bottom of Exploration at 5.2 ft.</li> <li>Seepage at 4.0 ft.</li> <li>Collected samples for PID headspace and free product shake tests from:               <ul style="list-style-type: none"> <li>TP-111A clay at 0-1.2 ft. and underlying sand (B-111A) 3.0 ppm                   <ul style="list-style-type: none"> <li>B-111A headspace (fuel oil equivalent)                       <ul style="list-style-type: none"> <li>B-111A = 21.1 ppm</li> <li>B-111B = 33.1 ppm</li> </ul> </li> <li>Free product shake test                       <ul style="list-style-type: none"> <li>B-111A = sheen present (no measurable product layer observed)</li> <li>B-111B = sheen present (no measurable product layer observed)</li> </ul> </li> </ul> </li> </ul> </li> </ul>



Test Pit: TP-112

Depth (ft.)	Description
0 - 2	Dark brown to black gravelly sand (a), trace of shells (a). Encountered 1/2" and 3/4" metal pipes at depth of 1.0 ft oriented horizontally at which any also encountered
2 - 3.6	Angular heavy grained (a) with trace of shell fragments (a). Encountered another metal pipe at this interval. Seepage and petroleum vapor resembling fuel oil at depth of 1.8 ft.
3.6 - 4.0	Dark gray CLAY SILT with some gravel, wood debris, brick, and concrete fragments (a). Strong petroleum odor resembling diesel.

- Bottom of Exploration at 4.0 ft
- Seepage at 1.8 ft.
- Collected samples for PII headspace and free-product shake tests at 4.0 ft
  - PII headspace (fuel oil equivalent) = 1150 ppm
  - Free product shake test = diesel present, but no product layer observed.

Test Pit: TP-113

Depth (ft.)	Description
0 - 0.3	Medium brown clay SAND with glass cover.
0.3 - 1.8	Light brown gravelly SAND, some shells (a)
1.8 - 2.7	Brown coarse SAND with trace wood fragments (a)
2.7 - 6.0	Medium gray CLAY SILT with strong petroleum odor resembling fuel oil, some metal BB's at depth of 4.0 ft. Seepage at 2.7 ft of black fluid seeping from fractures in clay at 3.2 ft.

- Bottom of Exploration at 6.0 ft
- Seepage at 1.0 ft.
- Collected samples for PII headspace and free-product shake tests at 3.2 ft (S-112A) and 6.0 ft (D-1125):
  - PII headspace (fuel oil equivalent)
    - S-112A = 909 ppm
    - D-1125 = 629 ppm
  - Free product shake test
    - S-112A = diesel present, no measurable product layer observed.
    - D-1125 = heavy diesel present, no measurable product layer observed.

## Attachment A Limitations

This test of investigation report has been prepared for the exclusive use of Maine Yacht Center LLC for specific application to the evaluation of potentially contaminated soils on a portion of their property. We have endeavored to prepare this report in accordance with generally accepted practices. No other warranty, expressed or implied, is made.

The scope of our assessment has been limited to the items specifically discussed in the text of this report. Recommendations contained in this report are based substantially upon our findings during the subsurface investigation. Should any additional data or information become available, it should be reviewed by S. W. COLE ENGINEERING, INC. and the conclusions and recommendations presented in this report should be modified as appropriate.

This report cannot reflect unexpected variations that will occur, nor can it reflect variations of subsurface conditions (groundwater quality or elevation) over time. S. W. COLE ENGINEERING, INC. has made no attempt to verify the compliance of the past or present owners and/or occupants of the adjacent properties with local, state, or federal laws and regulations.

It must be noted that our findings do not represent scientific certainties and are based on professional judgment. S. W. COLE ENGINEERING, INC. does not represent that the subject site contains no hazardous substances or other latent conditions beyond that detected or unobserved by S. W. COLE ENGINEERING, INC. during this environmental investigation.

**SUMMARY OF TEST PIT INVESTIGATION  
FORMER FUEL-TRANSFER AREA  
MAINE YACHT CENTER  
PORTLAND, MAINE**

**00-1065.5**

**DECEMBER 3, 2003**



01-1085.E

December 3, 2008

Maine Yacht Center L.L.C.  
Attention: Mason Seal  
100 Kensington Street  
Portland, ME 04102

Subject: Summary of Test Pit investigation in Former Fuel-Transfer Area

Dear Mason:

In accordance with our Proposal, dated October 20, 2008, we coordinated a limited test pit investigation on the Maine Yacht Center property to assess the presence of petroleum hydrocarbons beneath the former fuel-transfer area. We understand that the northern portion of the proposed Maine Yacht Center boat storage and maintenance building will overlie this area and some soil excavation will be required to construct the building slab and footings. The purpose of this investigation was to assess the distribution of petroleum-contaminated soil that may require excavation in this area. The area explored was determined by you and was on the order of 125 ft. by 125 ft. in plan area (see Sheet 1). The remainder of this report presents a brief summary of the investigation and findings. This report is subject to the limitations in Attachment A.

S. W. COLE ENGINEERING, INC. supervised excavation of 13 test pits on November 21, 2008. Shaw Brothers Construction of Gorham, Maine excavated the test pits with a back-mounted excavator. The test pits were designated TP-101 through TP-113. The approximate test pit locations are shown on Sheet 1A at the end of this report. The test pit logs are shown on Sheets 2 through 8.

Generally, the test pits were excavated to depths of at least 3-4 ft., or to the groundwater table, unless refusal was encountered on concrete slab or foundation remnants present at several locations. Test pit excavation depths ranged from 1.4 ft. (refusal on concrete in Test Pit TP-107E) to 6.0 ft. (TP-113). The soils encountered in all test pits are interpreted as E.C. fill soil textures.

ranged from variably textured sand and gravelly sand to claysilt. Several metal pipes related to the former fuel depot were encountered in the test pits. Clay drainage pipes and a PVC drainage pipe were encountered in TP-109 located near the western side of the proposed building. Groundwater was encountered in eight test pits at depths between 1.5± ft. (TP-105 and TP-112) to 4.5± ft. (TP-108). The elevation of the local groundwater table is likely influenced by the distribution of the claysilt fill and proximity to sand-filled pipe trenches in this area. Seven test pits had asphalt pavement at the surface. Three test pits (TP-102, TP-110, and TP-109) encountered a second asphalt pavement layer at depths ranging between 1.2± and 1.5± ft.

We monitored the soil for evidence of potential petroleum contamination using a photoionization detector (PID) and using visual and olfactory observations. Soil with discoloration (dark brown or black color), petroleum odor, or soil adjacent to the groundwater table was tested with a PID for concentration of soil gas volatile organic compounds. We used a MSA Passport PID-1 photoionization detector with a 10.6 electron Volt ultraviolet lamp to measure the ionizable organic gas and vapor concentrations in each soil sample. These measurements provide a relative indication of contamination from volatile organic compounds (VOCs) such as petroleum compounds and organic solvents. We performed the PID screening according to MDEP protocol presented in Chapter 65' Rules for Underground Oil Storage Facilities - Appendix Q (dated 08/13/02). We calibrated the PID to the MDEP fuel oil set point for the MSA Passport PID-1 prior to testing the samples.

Each soil sample tested with the PID was subjected to a free-product shake test to observe evidence of a petroleum sheen or a discernible free-product layer floating on the water surface. A representative from Acadia Environmental was present to observe the test pit explorations and to observe the free-product shake tests on behalf of Webber Energy, the previous property owner. The PID soil gas headspace testing was performed in our Gray, Maine laboratory after the soil samples had equilibrated to room temperature.

Nine test pits (TP-102, TP-104, TP-105, TP-106, TP-108, TP-109, TP-111, TP-112, TP-113) had visual, olfactory, or PID evidence of petroleum contamination. Generally, a petroleum odor resembling fuel oil was present at depth in these

locations. The depths of petroleum-impacted soil ranged from near ground surface in TP-111A to 5.5 ft. in TP-109. The approximate depths of petroleum-impacted soil in these test pits are listed below:

TP-102 - 5.5 ft.	TP-108 - 5.5 ft.
TP-104 - 4.5 ft.	TP-111 - 0 ft.
TP-105 - 2 to 3 ft.	TP-112 - 3 ft.
TP-106 - 3 ft.	TP-113 - 3 ft.
TP-109 - 4.5 ft.	

Soil samples from the following seven test pits displayed a petroleum sheen when subjected to a hot-product shake test:

TP-102	TP-111
TP-104	TP-112
TP-108	TP-113
TP-109	

Detectable soil gas headspace VOC concentrations were measured in eight test pits at concentrations (in fuel oil equivalence) ranging from 2.1 ppm (TP-105) to 1,150.0 ppm (TP-112). Test pits TP-111A, TP-112, and TP-113 had soil gas VOC concentrations exceeding 100 ppm.

In summary, evidence of petroleum-impacted soil was present in 9 of the 13 test pit excavations. Because of the variable depth of impacted soils, great variability in the fill materials (e.g., clean sand fill adjacent to impacted clay/silt), and the presence of concrete structures at depth in several locations, it is not possible to accurately determine the volume of petroleum-impacted soils that will require excavation for building construction. We recommend screening the soils in this area with a PID as the soil is being excavated. Soil with evidence of petroleum impact (i.e. visual and olfactory evidence of contamination, or elevated PID measurements) could be segregated in a secure stockpile and tested for offsite disposal or treatment if it cannot be reused onsite. It is likely that petroleum-impacted soil will have to be tested by an environmental laboratory for a suite of parameters (according to the receiving facility regulatory requirements) prior to

offsite treatment or disposal. S. W. COLE ENGINEERING, INC. is available to provide these services, as necessary.

If you have any questions or if we may provide additional assistance, please do not hesitate to call.

Very truly yours

S. W. COLE ENGINEERING, INC.



Steven R. Pinette, C.G.  
Senior Geologist







Test Pit: TP-106

Depth (ft.)	Description
0-0.1	Asphalt pavement.
0.1-1.0	Yellow-brown gravelly SAND. trace cobbles (fill).
1.0-1.8	Asphalt pavement.
1.8-2.4	Yellow-brown SAND with angular grav. (fill).
2.4-3.1	Dark brown SAND with wood debris; strong calcareous odor resembling fine fill (fill).
3.1-5.6	Blue-gray CLAY/SILT interbedded with sandy wood fragment layers ~0.5-4 ft. thick (fill). Woody layers have calcareous odor resembling fine fill.

- Bottom of Exploration at 5.6 ft.
- No seepage observed.
- Collected samples for HUI headspace and free-product shake tests at 3.4 ft. and 5.4 ft.
  - HUI headspace (free oil equivalence):
    - @ 3.4 ft. = 83.4 ppm
    - @ 5.4 ft. = 58.1 ppm
  - Free-product shake test:
    - @ 3.4 ft. = no sheen or product layer observed
    - @ 5.4 ft. = no sheen or product layer observed

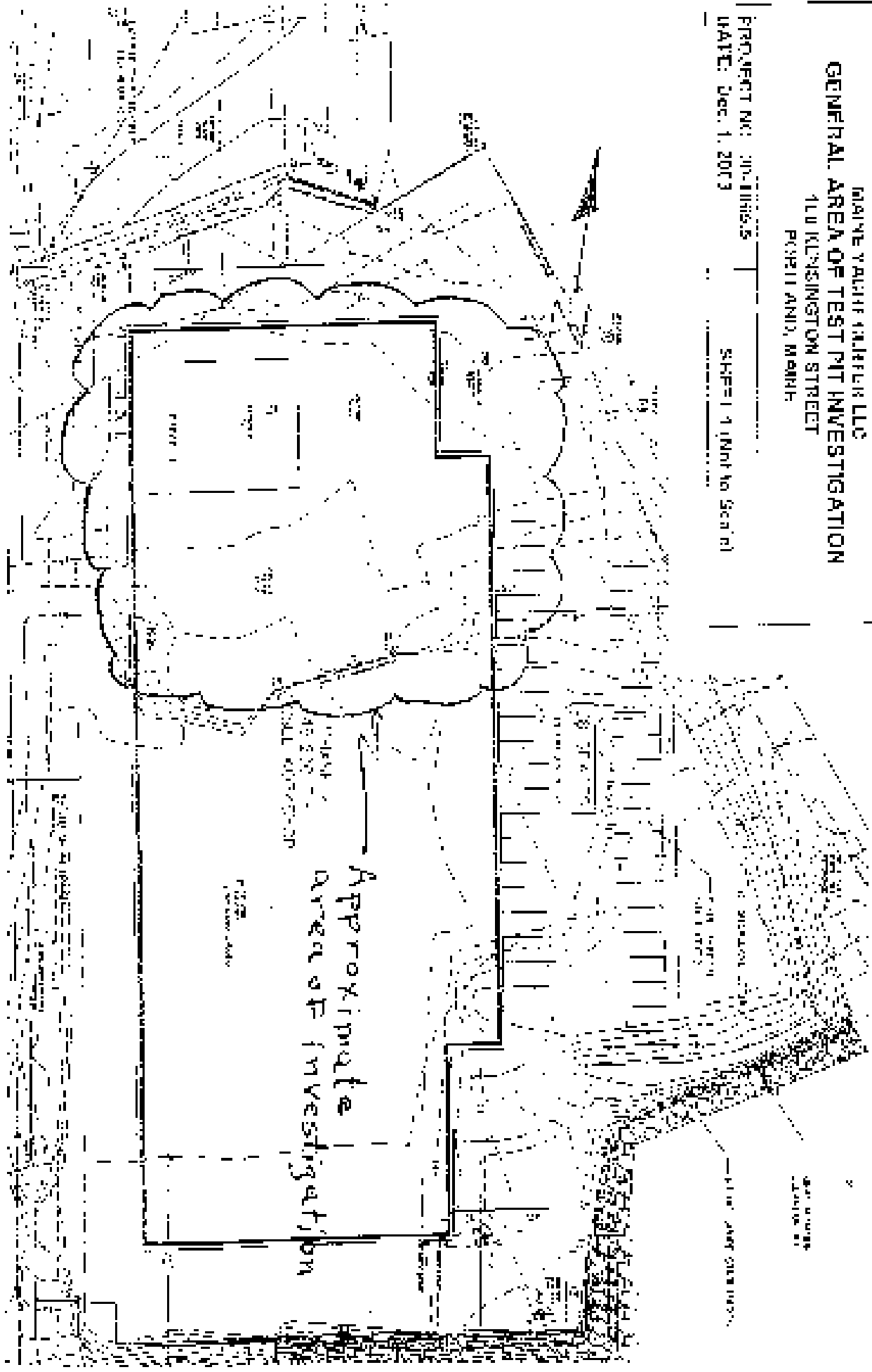
Test Pit: TP-107B : H-107A encountered and sealed (matrix)

Depth (ft.)	Description
0-0.2	Asphalt pavement.
0.2-1.1	Yellow-brown gravelly SAND (fill).
1.1-	Concrete slab. Ascoron last pt. ascoron

- Bottom of Exploration at 1.4 ft.

MAIWE YACHT CLUB LLC  
GENERAL AREA OF TEST PIT INVESTIGATION  
411 KENSINGTON STREET  
POWELL AND, MAOH

PROJECT NO: 30-2110-5  
DATE: Dec. 1, 2003  
SHEET 1 (North to South)



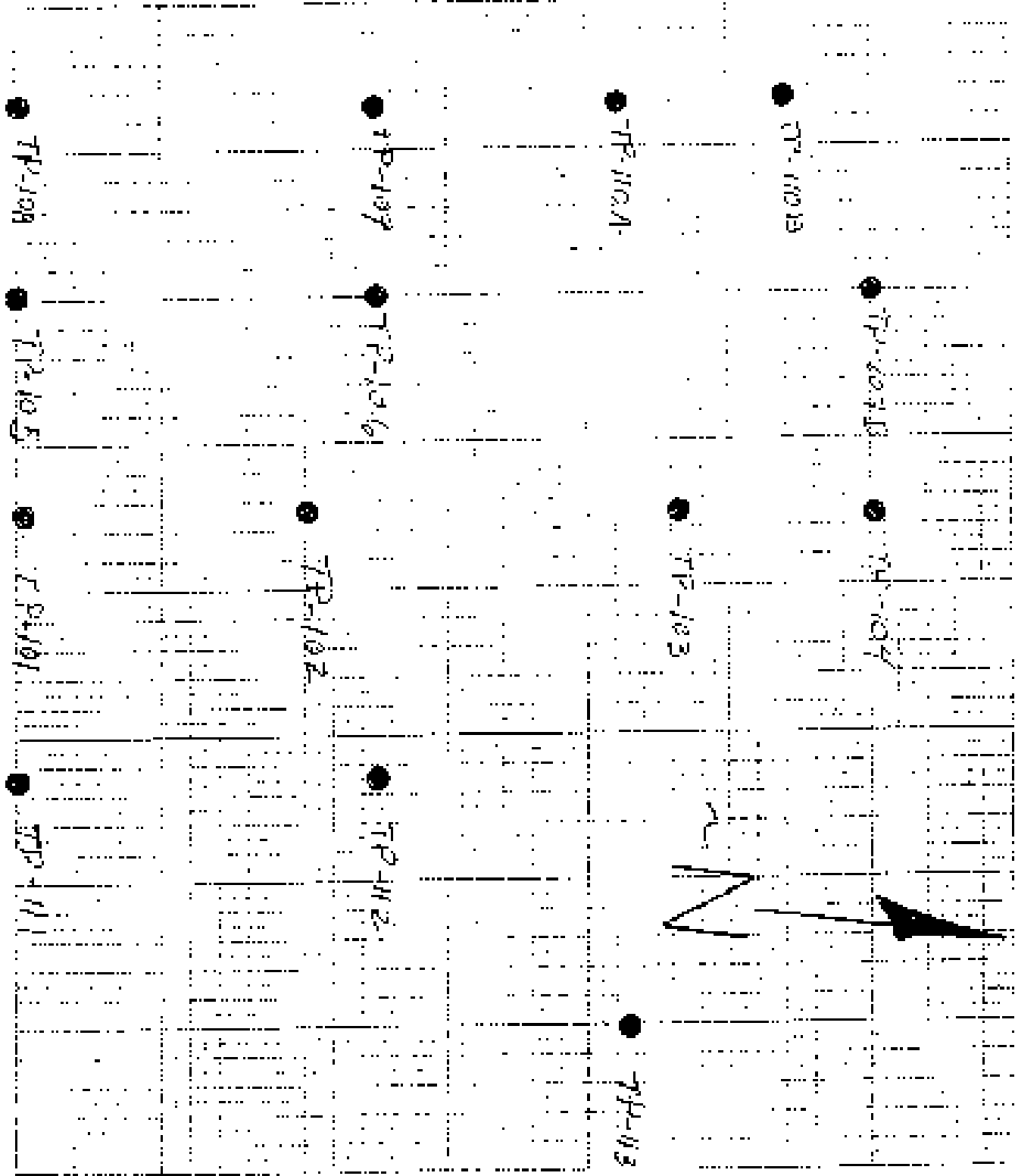
PROJECT Maine Yacht Center  
 Approximate Test Pit Locations

COMP BY  
 SLP  
 CHK BY

JOB NO  
 00-1045.3  
 DATE  
 12/1/03

SHEET 1A

Scale: 1" = 20'



▲ utility pole

TEST PIT LOGS

Project/Client: Maine Yacht Center  
 Project No.: 00-1055.5  
 Location: 130 Kensington Street, Portland, Maine  
 Date of Exploration: November 21, 2003  
 Geologist: Steve Proulx

## Test Pit: TP-101

Depth (ft.)	Description
0-1.0	Dark brown silty-sand, trace grass roots (1 ft)
1.0-3.1	Medium brown, fine-medium SAND and loamier (fill) pit material resembling loess.

+ Bottom of Exploration at 3.1 ft.  
 + Stoppage at 3.1 ft.  
 + Collected samples for PID, hexachloro and non-hexachloro spike tests at -3.0 ft.

- PID reads close to 100 (equivalent to ~2.0 ppm)
- Free product spike test - no change in readings.

Notes

1. Test Pit Locations are shown on GH-66.
2. We used a MSA Passport PID - photoionization detector with a 10.0 electron Volt ultraviolet lamp to measure ppm for volatile organic gas and vapor concentrations in spot soil samples. These measurements provide a relative indication of contamination from volatile organic compounds (VOCs), such as petroleum compounds and organic solvents. We performed the PID sensing according to MDEH protocol presented in Chapter 89 - Rules for Underground Oil Storage Facilities - Appendix C (dated 05/12/02). We calibrated the PID to the MDEH test oil set point for the MSA Passport PID, prior to testing the samples.

**Test Pit: TP-102**

Depth (ft.)	Description
0-0.3	Asphalt pavement
0.3-1.2	Yellow-brown gravelly SAND (fill)
1.2-1.4	Asphalt pavement
1.4-3.0	Sandy GRAVEL (fill) seepage at 1.8 ft.
3.0-3.5	Dark brown to black SAND with wood fragments (fill), petroleum odor resembling fuel oil.
3.5-3.5	Medium gray CLAY-SILT with some gravel and wood fragments, petroleum odor resembling fuel oil.

- Bottom of Exploration at 3.5 ft.
- Seepage at 1.8 ft.
- Collected samples for FID tests and free product layer tests at 1.8 ft. and 3.0 ft. respectively.
  - FID reads zero fuel oil equivalence = 0.0 ppm.
  - Free-product shake test = sheen present, no product layer observed.

**Test Pit: TP-103**

Depth (ft.)	Description
0-0.3	Asphalt pavement
0.3-1.0	Yellow-brown SAND some angular gravel (fill)
1.0-1.4	Concrete slab with wire mesh reinforcement. 4-in. holes drilled to test for possible stain. Relocate to another location.

- Bottom of Exploration at 1.4 ft.
- No seepage observed.

**LEGEND**

☉ Approximate Test Boring Location

**NOTE:**

BASE MAP provided by  
Gmrc, Inc - Palmer Consulting Engineers, Inc

**W. COLE  
ENGINEERING, INC.**

MAINE YACHT CENTER, L.L.C.

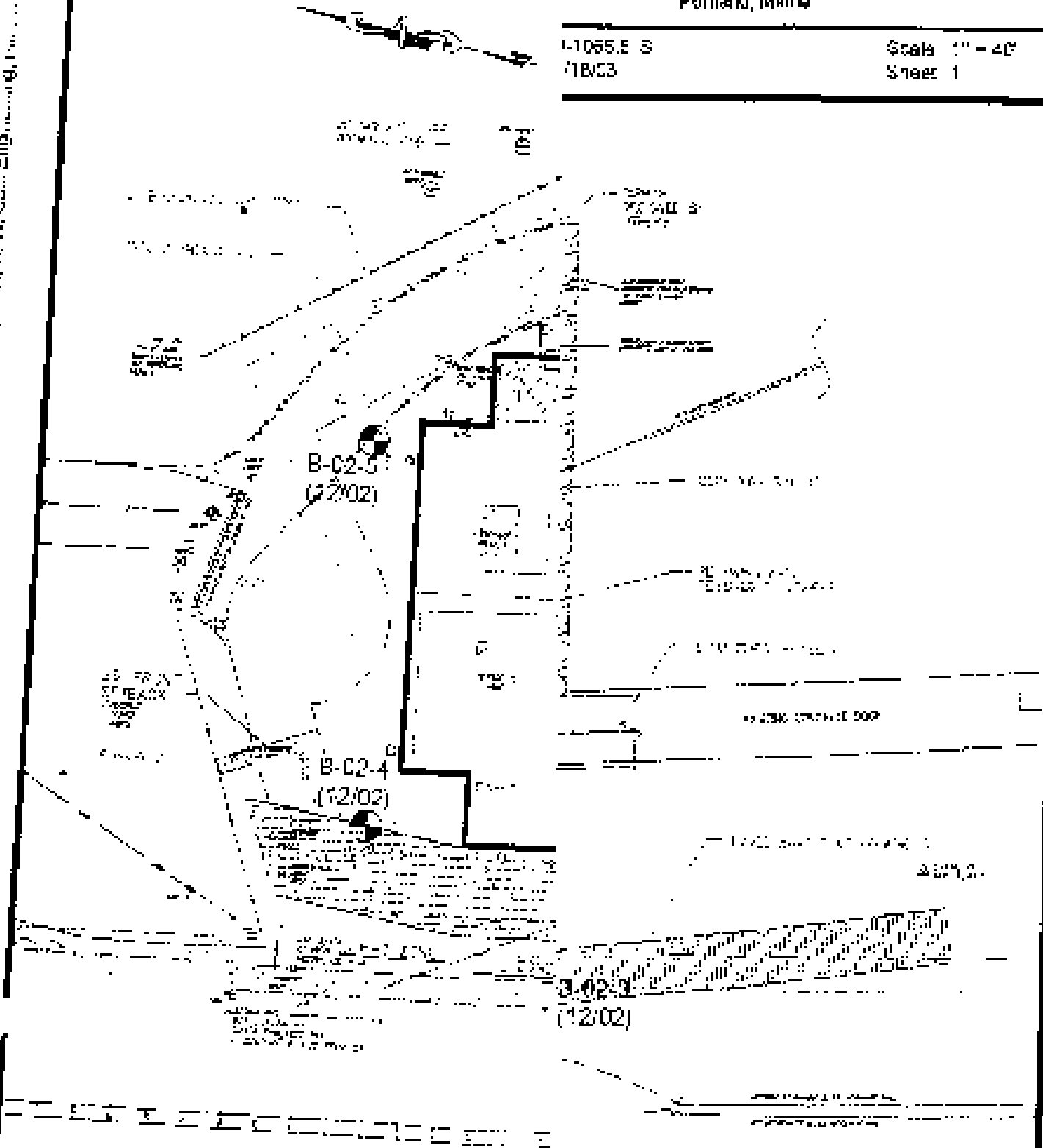
**LOCATION LOCATION PLAN**

Proposed Boat Storage Building  
100 Kamsington Street  
Portland, Maine

1-1055.E 3  
11803

Scale 1" = 40'  
Sheet 1

2025/11/10 09:44:00 AM C:\Users\WJC\Documents\1055.E 3\11803.dwg



GLAYEY LOAM &  
IN AREAS NOT TO BE  
OCCUPIED BY ENT



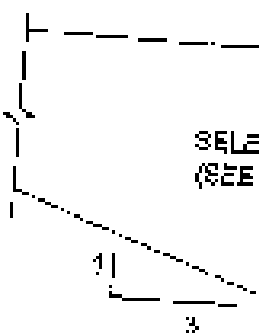
3" MIN  
SPACE A

PERFORATED UNDERDRAIN  
BEDDED IN 9" OF 3/4" CRUSHED  
WRAPPED IN GEOTEXTILE FILTER

NOTES:

1. UNDERDRAIN INSTALLATION AND MATERIAL GRADATION  
REQUIREMENTS ARE CONTAINED WITHIN THIS REPORT.

EXTERIOR



**S. W. COLE**  
ENGINEERING, INC.

MAINE YACHT CENTER, LLC

**UNDERDRAIN DETAILS**

Proposed Boat Storage Building  
100 Kensington Street  
Portland, Maine

PERFORATED UNDERDRAIN PIPE  
BEDDED IN 9" OF 3/4" CRUSHED STONE  
WRAPPED IN GEOTEXTILE FILTER FABRIC

to CD-1055.5 \$  
12/15/02

Scale: N/A to Scale  
Sheet 12

PLANNING/1317/0040-1065.5/00-1055.5-119-ENG. Layout1, 12/19/2003 02:27 PM  
W.M. S.W. Cole Engineering, Inc. 11

Code  
Cert



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

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

FROM: Mr. Steve Dairy, c/o The Sheridan Corporation

RE: Certificate of Design

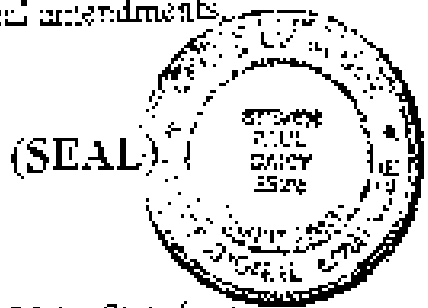
DATE: June 3, 2004

These plans and / or specifications covering construction work on:

Maine Yacht Center

100 Kensington Street, Portland, Me. 04103

Have been designed and drawn up by the undersigned, a Maine registered Architect / Engineer according to the BOCA National Building Code / 1999 (Fourteenth Edition) and local amendments.



Signature: Steven P. Dairy  
6-3-04

Title: Chief Engineer

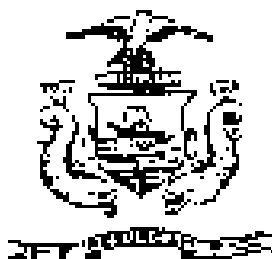
Firm: The Sheridan Corporation

Address: P.O. Box 359  
Fairfield, Me. 04937

As per Maine State Law:

\$50,000 (or more) in new construction, repair, expansion, addition, or modification for Building or Structures, shall be prepared by a registered design Professional





CITY OF PORTLAND  
BUILDING CODE CERTIFICATE  
379 Congress St. Room 215  
Portland, Maine 04101

ACCESSIBILITY CERTIFICATE

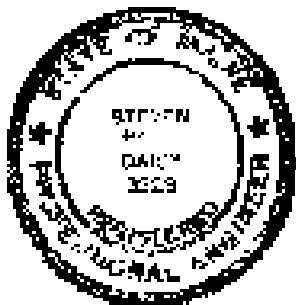
Designer: Mr. Steve Daley

Address of Project Maine Yacht Center, 100 Kensington Street, Portland, Me.

Name of Project to construct a new boat storage building  
with adjoining sales & offices

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

(SEAL)



Signature: Stephen B. Daley  
6.3.04

Title: Chief Engineer

Firm: The Sheridan Corporation

Address: P.O. Box 359

Fairfield, Me. 04917

Phone: (207) 453-9311



SEAL OF THE CITY OF PORTLAND

CITY OF PORTLAND  
BUILDING CODE CERTIFICATE  
285 Congress St., Room 513  
Portland, Maine 04101

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

FROM DESIGNER: Mr. Steve Inley  
c/o The Skanska Corporation

DATE: June 7, 2004

Job Name: Maine Yacht Center

Address of Construction: 100 Kennebec Loop, Scarborough, Maine 04108

THE BOCA NATIONAL BUILDING CODE, 1999 (FOURTEENTH EDITION)

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

Building Code and Year: BOCA 1999 Use Group Classification(s): 2, 3, 4, B

Type of Construction: 2B

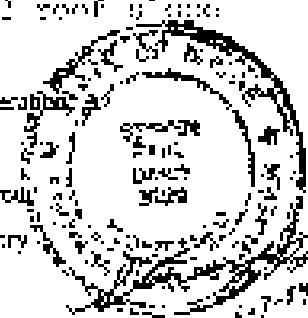
Structural Systems: Dist. F2 - 2112 roof system

Roof Snow Load

70 Ground Snow Load,  $S_g$   
50 Flat Roof Snow Load,  $S_f$   
0  $S_f > 10$  psf, flat roof snow load,  $P_f$   
0  $S_f > 10$  psf, snow exposure factor,  $E$   
0  $S_f > 10$  psf, roof thermal factor  
0  $S_f > 10$  psf, snow load importance factor,  $I$   
40 Sloped Roof Snowload,  $P_s$

Seismic Loads

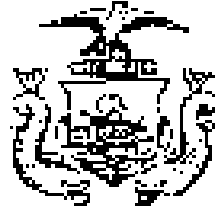
2.1 Peak velocity-related acceleration,  $A_v$   
2.2 Peak acceleration,  $A_p$   
1 Seismic hazard exposure group  
0 Seismic performance category  
34 Soil profile type  
3 Basic structural system (seismic-resisting system)  
4.1/3.4 Response modification factor,  $R$ , and deflection amplification factor,  $C_d$



YES The documents must account for drift snow load, unbalanced snow load and sliding snow loads as required.

Wind Loads

91 Basic Wind Speed  
0.7 Internal Pressure Coefficient  
3 Wind Exposure Category  
20 Wind Design Pressure  
1 Wind Importance Factor



INCORPORATED 1820

CITY OF PORTLAND  
BUILDING CODE CERTIFICATE  
189 Congress St., Room 515  
Portland, Maine 04101

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

FROM DESIGNER: Mr. Bruce Dalry  
aka The American Corporation

DATE: June 1, 2004

Job Name: Maine Youth Center

Address of Construction: 100 Kensington Street, Portland, Maine 04103

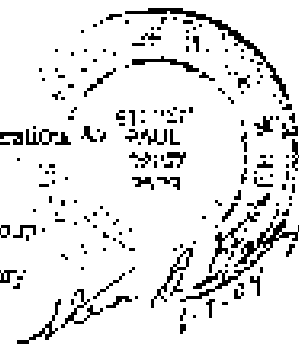
**THE BOCA NATIONAL BUILDING CODE 1999 (FOURTEENTH EDITION)**  
Construction project was designed according to the building code criteria listed below

Building Code and Year: BOKB 1999 Use Group Classification: S-1 M & H  
Type of Construction: 2S Division: 1 & 2

Structural Systems

Snow Loads  
70 Ground Snow Load (Pg)  
0.15 If Pg > 10 psf, Flat Roof snow load, Ps  
0.17 If Pg > 10 psf, snow exposure factor, Ce  
0.1 If Pg > 10 psf, roof thermal factor  
0.1 If Pg > 10 psf, snow load importance factor, I  
40-5 Sloped Roof Snowload Ps

Earthquake Loads  
0.1 Peak velocity-related acceleration, Av  
0.15 Peak acceleration, Aa  
1 Seismic hazard exposure group  
1 Seismic performance category  
S2 Soil profile type  
1 Basic structural system/seismic resisting system  
1.25 Response modification factor, R, and deflection amplification factor, Cd



BOC The documents must account for drift snow load, unbalanced snow load and sliding snow loads as required.

Wind Loads  
90 Basic Wind Speed +/- 0.75 Internal Pressure Coefficient  
P Wind Exposure Category 20.74 Wind Design Pressure 1.1 Wind Importance Factor