OFFSHORE GEOTECHNICAL DRILLING WORK
Performed by
ATLANTIC TEST BORING CO., INC.
at BLACK LEDGE
GROTON, CONNECTICUT
under
Contract No. DACW 33-81-C-0127

Prepared for:

Atlantic Test Boring Co., Inc.
34 King Street
Boston, Massachusetts 02122

Prepared by:

Goldberg, Zoino & Associates, Inc.
255 South Main Street
Providence, R. I. 02903

File No. P-3259
March 1982

GOLDBERG·ZOINO & ASSOCIATES, INC.
GEOTECHNICAL-GEOHYDROLOGICAL CONSULTANTS

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March 5, 1982
File No. P-3257

Atlantic Test Boring Co., Inc.
34 King Street
Boston, Massachusetts 02122

Attention: Mr. P. J. Maloney

Gentlemen:

We are pleased to forward the attached report on the test drilling services performed by your firm at the Black Ledge site in Groton, Connecticut. Both the field services and the preparation of this report are credited to Mr. Michael Sherrill.

It has been a pleasure to assist you on this project. Should you have any questions, or if we can be of any further assistance, please do not hesitate to contact either Mr. Sherrill or me.

Very truly yours,

Michael A. Powers
Associate

MAP:mrb
enclosure

30 TOWER ROAD
NEWTON UPPER FALLS, MA 02164
617/969-0050

NEWTON UPPER FALLS, MA
BUFFALO, NY
CONNECTICUT RIVER VALLEY
PROVIDENCE, RI

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Figure No. 1 Exploration Location Plan

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GZA

1.00 PREFACE AND CONTRACTOR ASSURANCE

This report prepared by Goldberg, Zoino and Associates presents the results of test drilling performed by the Atlantic Test Boring Co., Inc. at Black Ledge, offshore of Groton, Connecticut. The work was performed for the United States Corp. of Engineers under the following provisions:

PROJECT PROGRAM: Long Island Sound Dredge Containment Study

AUTHORIZATION: FY81 Appropriation Public Law 96-367, 1 October 1980

CONTRACT NO.: DACW 33-81-C-0127

CONTRACT DATE: 30 September 1981

CONTRACTING OFFICER: Lt. Col. Arthur Rappaport

This report, together with the previously submitted jar samples and rock cores accurately describe the activities performed in completing the contract.

ATLANTIC TEST BORING CO., INC.

Philip J. Maloney

Philip J. Maloney, President

GZA

2.00 SCOPE OF INVESTIGATION

The Black Ledge site is located approximately 1700 yards offshore and east of the mouth of the Thames River in Groton, Connecticut. Twenty-two (22) machine probings and five (5) drive sample borings were performed in open tidal water of approximately fifteen (15') to thirty four (34') foot depths.

A barge-mounted derrick and winch unit were employed to advance the probes and test borings according to the Standard Penetration Test method (ASTM D 1586) and the requirements of paragraph 4, Sampling Instructions, in Specifications for Offshore Geotechnical Drilling Work at Clinton and Groton, Connecticut.

Field classification of subsurface materials and observation and reporting of drilling procedures were performed by Goldberg, Zoino and Associates, Inc. personnel.

GZA

3.00 QUALITY CONTROL

Work performed under this contract was conducted under the provisions and specifications as outlined in the Specifications for Offshore Geotechnical Drilling Work at Clinton and Groton, Connecticut, Invitation No. DACW 33-81-B-0056. Drilling procedures were observed on a full-time basis by a representative of Goldberg, Zoino and Associates. Variations from the project specifications were as noted in this report.

3.10 Records Kept

3.11 Exploration Locations and Elevations

Contract exploration locations and actual locations, as determined by Loran C coordinates are shown on Figure 1. Recorded Loran C coordinates are shown on the attached exploration logs in Appendices A and B.

The elevations of the top of explorations were calculated by collating water depths to MSL by use of the tide curves shown in Appendix C. These curves were developed by GZA from data presented in Elderidge Tide and Pilot, 1981 and 1982 editions, pages 20 and 85. The elevations at each exploration are shown on the attached logs.

3.12 Machine Probe Logs

Copies of both field probe logs, prepared by GZA, and typed logs prepared by the Atlantic Test Drilling Co. are presented in Appendix A. The typed logs were prepared by transferring the data found on the field logs.

These logs indicate the depth of water, the method and resistance to driving, and the depth at which the exploration was terminated.

3.13 Drive Sample Boring Logs

Copies of both field test boring logs prepared by GZA, and typed logs prepared by the Atlantic Test Drilling Co. are presented as Appendix B. The typed logs were prepared by transferring the data found on the field logs.

These logs indicate the depth of water, the method used to advance the exploration, a record of the resistance encountered, a description of the material recovered, and the depth at which the boring was terminated.

GZA

3.14 Chain of Custody Logs

Chain of custody logs attached as Appendix D document samples taken and handling and transport from the Black Ledge site to the Corps of Engineers, Waltham, Massachusetts.

3.15 Safety Reports

A weekly safety meeting was conducted by the GZA representative with the drilling crew and tug crew in attendance. The safety reports attached as Appendix E document topics discussed at those meetings, accidents occurring during the previous week's operations, and detail exposure hours sustained by personnel during operations of the previous week.

3.20 Equipment Used

3.21 Locational Equipment

A Loran C receiver with digital display was mounted aboard the tug in the cabin. Sensing equipment was mounted on the cabin exterior.

3.22 Drilling Equipment

Steel staging covered with 2" thick planking was cantilivered from the deck of the barge to provide a drilling platform. A railing was mounted along the perimeter of the platform for personnel safety.

Probe and boring penetration was advanced by a gas-powered Briggs and Stratton winch mounted on a 16.0 foot derrick. One inch manila rope hoisted 140 lb. and 300 lb. hammers to provide impact energy to drive A-rods and a 24" long, 1 3/8" I.D. split spoon sampler.

Rock coring was performed by advancing an "Ax" diamond tip core barrel employing rotary drilling techniques. A gas engine Acker skid rig provided rotation.

3.23 Water Depths

Water depths were obtained by dropping a chain graduated in feet and weighted with an 8 pound,6" diameter mushroom anchor immediately adjacent to the drilling platform. Time of sounding and observed depth to the nearest 1/2 foot were recorded on the logs.

Soundings were performed once at the start of probings. Multiple soundings were performed during operations at the boring locations. This was done to attempt to monitor change with tidal fluctuation. Recorded water depths reflect applied corrections based upon tide curve data. In any event, due to existing swell, observational bias, and possible deflection of the chain lead due to currents, recorded water depths should be considered accurate only to approximately one foot.

3.24 Sample Containment

Glass 1 1/2 pint jars were used to contain spoon samples of recovered over-burden materials.

Rock core recoveries were contained in longitudinally partitioned wooden boxes.

3.30 Procedures

3.31 Probe and Boring Locations

A Loran C coordinate fix was taken on a Red Buoy at point A, Frank Ledge, at the start of each day's drilling operations. Desired location coordinates were obtained from intercepts of the 43000 and 26000 signal bands scaled from overlay printed upon NOAA Chart 13205, 1:80000, and transferred to NOAA Chart 13213, New London Harbor and Vicinity, 1:10000. The barge and tug were subsequently put on station coordinates. A visual check was made to obtain ties with existing landmarks or buoy positions. Actual drilling locations were determined by the best observed fit of Loran C coordinates and ranges to landmarks. Coordinates recorded on the drilling logo (Appendices A and B) and as plotted on Figure 1 are those holding at the drilling locations.

Machine probes MP-15 and -16 and boring BH-A were adjusted to the east of specified locations. This action was taken to avoid damaging a subsurface cable when the barge spuds were dropped or upon commencement of drilling. The actual locations are as recorded and depicted in the figure and appendices.

Machine probe MP-4 was located north of its specified position along leg A-B. Shallow water at Black Ledge and the deep draft of the tug necessitated this relocation.

3.32 Probes

Probes were advanced to the specified twenty feet (20') below the indicated bottom surface elevation or to refusal by dropping

a 140 lb. hammer through a 30 in. fall. Refusal was determined as that point beyond which no advance was observed under the impact of 50 blows with the 140 lb. hammer or that point at which the rods were observed to bounce under hammer impact. Generally further penetration was attempted by changing to the 300 lb. hammer until similar rod performance was observed.

Depth of penetration was monitored by marking the rods in 1 ft. increments. Blow counts were recorded per foot of penetration except where indicated on the logs.

3.33 Soil Sampling

At boring locations split spoon samples were obtained at five foot intervals by the standard penetration test method or where strata change was indicated by equipment performance. Blow counts were recorded for 6" incremental advancements of the sampling spoon. Recovered materials were classified under the USCS system in accordance with ASTM D-2487 and D-2488 by the GZA geologist. When recovery allowed, two jar samples were taken for each drive and labelled. Materials indicating a change of strata within one drive recovery were separated in additional jars labelled A or B.

3.34 Rock Coring

Rock coring was attempted at those locations where test boring refusal was encountered at penetration less than 40 feet. Boring locations BH-B and -C were advanced to termination depth with no refusal. Boring BH-A encountered refusal at 13 feet of overburden penetration and was cored an additional 5 feet with no breakthrough. Cores recovered were classified and described by the GZA geologist.

At BH-D penetration of overburden was advanced to a depth of 9.5 feet (elev. 36.5' MSL). Coring operations were started and advanced 0.5 feet to elev. 37' MSL. At this depth the core barrel bound up in the casing and rotation was impossible. Visual observations indicated that the casing was no longer in a vertical alignment. Apparently the barge had moved relative to the embedded casing under the effect of wind and swell. The core barrel was then pulled and a two-inch long rock core recovered. Subsequently, two probes were performed within 25 feet west and east of the boring location. These encountered refusal at 7.75 feet and 10.6' penetration depths respectively. Based upon core recovery, probe performance and the proximity of rock exposed at the water surface, further efforts at this location were terminated, contingent upon approval by Corps of Engineers personnel. The Corps subsequently indicated acceptance of satisfactory completion at this location.

Similar circumstances prevented coring operations at boring location BH-E. Refusal was encountered initially at a 6.2' depth (elev. 36.2' MSL). Barge movement relative to the casing resulted in a redrive and refusal at 5.2 feet (elev. 35.2' MSL). No further attempt was made to core this location. Corps of Engineers personnel subsequently accepted refusal as satisfactory completion of exploration at this location.

3.35 Disposition of Soil and Rock Samples

Core recoveries and jarred overburden samples were boxed and kept in a heated shack aboard the barge while on-site. Custody of samples was accepted by Atlantic Test Boring Co. upon return to the pier at Groton. A chain of custody log was delivered to the driller by the GZA representative at this point.

The driller then transported the samples, cores and custody logs to the offices of Atlantic Test Boring in Boston, Massachusetts. Delivery of these materials to the offices of the Corps of Engineers, New England Division, at Waltham, Massachusetts was performed by the driller.

4.00 SUBSURFACE MATERIALS

The following provides a general description of the subsurface materials encountered. This description is based on a limited number of explorations and therefore conditions may exist on-site which are not described in this report. Refer to the exploration logs in Appendices A and B for a more detailed description of the subsurface conditions encountered.

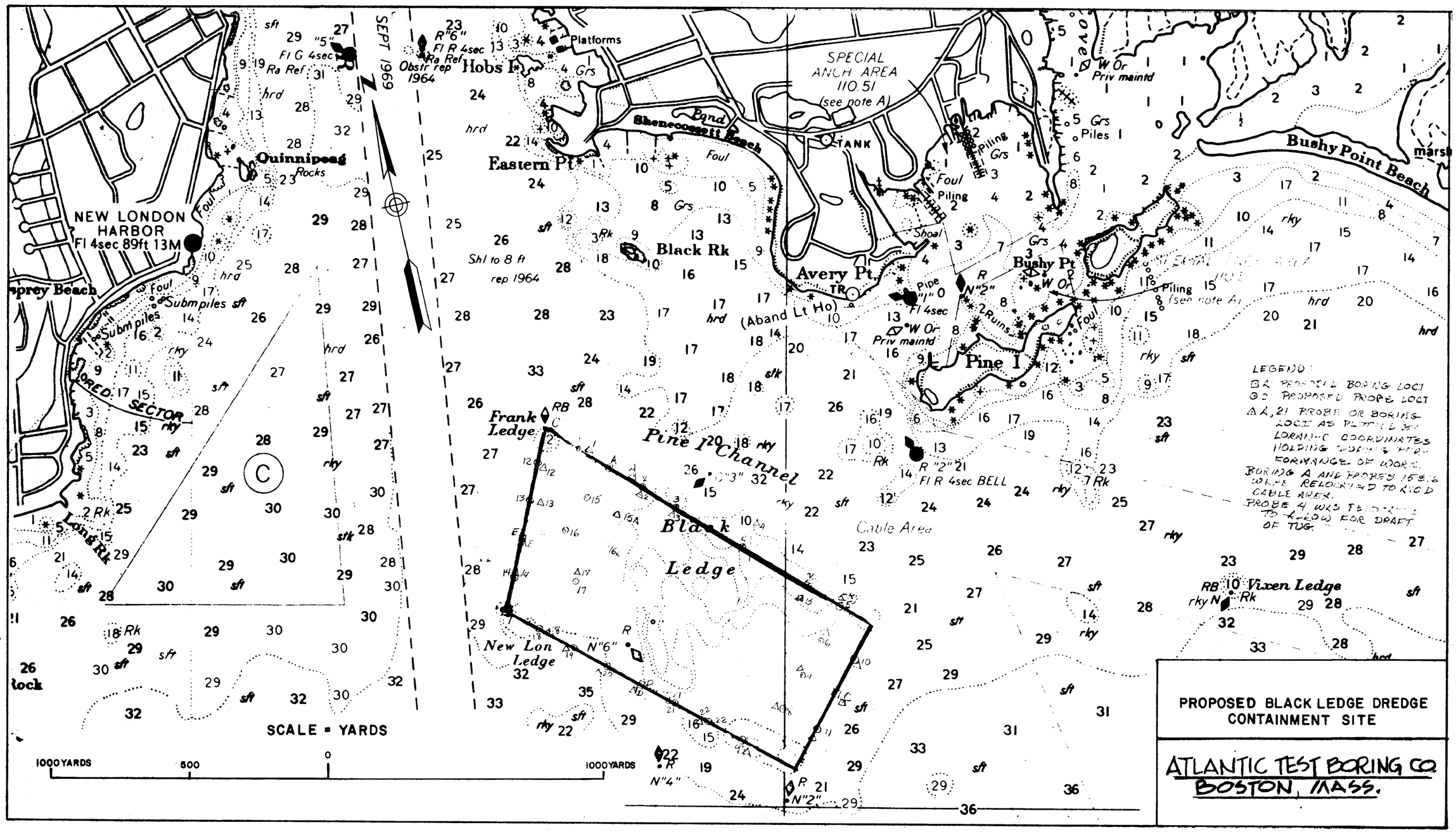
From sea bottom to depths varying from less than 1 foot to more than 10 feet were strata of loose to very loose soils. Based on the limited number of samples recovered, it appears this layer is predominantly a Silty Fine SAND with less than 20% non-plastic Fines, shell fragments, and plant matter (SM). Due to its low strength, as inferred from the probes, it is possible that in places, this material may be predominantly an organic silt. Standard penetration test values in these materials ranged from zero (push) to 7 and average about 3 blows per foot.

In general, this layer was underlain by strata of loose to dense soils. Where encountered these soils varied from less than 4 feet to more than 30 feet in thickness. Typically, this layer varied from poorly graded fine SANDS with less than 5% non-plastic Fine (SP) to well graded Gravelly SANDS with less than 15% non-plastic Fines (SM). Borings BH-B and BH-C indicated that this layer becomes finer with depth grading to Sandy SILTS (ML) interbedded with Silty CLAYS of moderate plasticity (CL). Standard penetration test values in this layer ranged from 5 to more than 100 and averaged about 30 blows per foot.

These strata, and where absent, the loose fine SANDS, were in general underlain by a dense to a very dense layer of Sandy GRAVEL/Gravelly SAND with typically less than 15% non-plastic fines. This unit appears to vary from less than 2 feet to more than 10 feet thick, with standard penetration test values generally in excess of 50 blows per foot.

This dense granular unit is believed to be directly underlain by bedrock. At BH-A five feet of rock was cored with 3 feet recovered in four pieces of 1 inch, 1/2 inch, 6 inches, and 29 inches. This core was identified as a grayish-pink granitic gneiss. A banding of dark minerals, probably a concentration of biotite was present, running at approximately 20° to the horizontal.

FIGURES



PROPOSED BLACK LEDGE DREDGE CONTAINMENT SITE

ATLANTIC TEST BORING CO
BOSTON, MASS.

APPENDIX A

PROBE LOGS

U. S. ARMY
CORPS OF ENGINEERS
NEW ENGLAND DIVISION

FIELD LOG OF TEST PROBE

Site BLACK LEDGE Page 1 of 1 Pages

Probe No. 1 Desig. MP 1 Diam. (Casing) —

Co-ordinates: N 43993.87 E 26140.11 SPODS

Elevation Top of Boring -30.5' M.S.L. Hammer Wt. 140 Boring Started 0800 12/30/81

Total Overburden Drilled 20 Feet Hammer Drop 30 Boring Completed 0830 12/30/81

Elevation Top of Rock — M.S.L. Casing Left —

Total Rock Drilled — Feet Subsurface Water Data — Page —

Elevation Bottom of Boring -50.5' M.S.L. Obs. Well —

Total Depth of Boring 20' Feet Drilled By P.J. MALONEY

Core Recovered — % No. Boxes — Mfg. Des. Drill ACKER

Core Recovered — Ft. — Diam. — In. Inspected By: M. SHERRILL

Soil Samples — In. Diam. — No. Classification By: M. SHERRILL

Soil Samples — In. Diam. — No. Classification By: —

DEPTH 1" = 5'	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER FT / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
				WOR	140 # HAMMER, A-ROD	
				+		VERY LOOSE/SOFT.
				DH		
5				3	140 #, 30" FALL	SILTY FINE SANDS,
				1		
				2		
10				1		
				3		
				2		
				2		
				1		
15				5		(PUSHING COBBLES?)
				9		
				6		
				4		
				4		
20				35		DENSE - SAND & GRAVEL
						TERM @ REQUIRED DEPTH.

GENERAL REMARKS: 30 FT WATER

① 0'-6': WEIGHT OF RODS 0-3' + WT OF DRIVE HEAD 3'-5'.

② LOC. ATT. BY RUNNING ALONG COURSE AZ 135° MAG. ~ 3 BARGE LENGTHS.

③ EL. EE MSL DET BY TIDE CURVE

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Figure 3

NOTE: BARGE POS. JUST NORTH & WEST OF LINE BETWEEN LIGHT HOUSE, PT D, & RIVER PT. NUN "I"

U. S. ARMY
CORPS OF ENGINEERS
NEW ENGLAND DIVISION

FIELD LOG OF TEST PROBE

Site BLACK LEDGE/GROTON Page 1 of ___ Pages

Probe No. 2 Desig. MP 2 Diam. (Casing) _____

Co-ordinates: N LORAN 43993.0 E 26138.7

Elevation Top of Boring -25' M.S.L.
Total Overburden Drilled 8.5' Feet
Elevation Top of Rock -33.5' M.S.L.
Total Rock Drilled 0 Feet
Elevation Bottom of Boring -33.5' M.S.L.
Total Depth of Boring 8.5' Feet
Core Recovered ___ % No. Boxes ___
Core Recovered ___ Ft: ___ Diam. ___ In.
Soil Samples ___ In. Diam. ___ No.
Soil Samples ___ In. Diam. ___ No.

Hammer Wt. 140 lb Boring Started 0855 12/30/81
Hammer Drop 30"
Casing Left ___ Boring Completed 0910 12/30/81
Subsurface Water Data ___ Page ___
Obs. Well ___
Drilled By P.J. MALONEY
Mfg. Des. Drill ACKER SKID
Inspected By: M. SHERRILL
Classification By: M. SHERRILL
Classification By: ___

DEPTH 1" = 5'	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER FT / CORE RECV'Y	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
			0'	1		VERY LOOSE - LOOSE SILTY-SANDS (2)
			\	WOR		
			3'	1		
				6	140#, 30" FALL	
				4		
5				19		MED-DENSE TO DENSE SAND & GRAVEL, COBBLES (?) — 5
				14		
				51.		
				36	BOUNCE 300# BOUNCE	(3)
10						REF @ 8.5' — 10

GENERAL REMARKS: (1) ON AZ 135 MAG. DRILL RIG ON LINE W C"3" & R"2" (PINE ISL.) 25' WATER
(2) Weight of Rods 0'-3'.
(3) Rod bouncing with 140#. Change to 300# hammer - BOUNCING REFUSAL.

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Figure 3

U. S. ARMY
CORPS OF ENGINEERS
NEW ENGLAND DIVISION

FIELD LOG OF TEST PROBE

Site BLACK LEDGE/GROTON/NL Page 1 of ___ Pages

Probe No. 3 Desig. MP3 Diam. (Casing) _____

Co-ordinates: N LORAN 43992.68 E 26138.0

Elevation Top of Boring -16.5' M.S.L.
Total Overburden Drilled ~2.1' Feet
Elevation Top of Rock -18.6' M.S.L.
Total Rock Drilled — Feet
Elevation Bottom of Boring -18.6' M.S.L.
Total Depth of Boring 2.1' Feet
Core Recovered — % No. Boxes _____
Core Recovered — Ft. ___ Diam. ___ In.
Soil Samples — In. Diam. ___ No.
Soil Samples — In. Diam. ___ No.

Hammer Wt. 140# Boring Started 0930 12/30/81
Hammer Drop 30"
Boring Completed 0940 12/30/81
Casing Left _____
Subsurface Water Data _____ Page _____
Obs. Well _____
Drilled By R. J. MALONEY
Mfg. Des. Drill ACKER
Inspected By: M. SHERRILL
Classification By: M. SHERRILL
Classification By: _____

DEPTH	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER FT / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
1" = 5'						
				WDR		V. LOOSE SILTY SAND
				18	140#, 30" FALL	MED DENSE SAND & GRAVEL
				26/1"	300# - BOUNCING REFUSAL	REFUSAL @ 2.1'. TERMINATION. ①
5						

GENERAL REMARKS: POSIT. JUST EAST OF LINE BETWEEN C3" & PT. D - N.L. LIGHTHOUSE. 17 FT. WATER
① NO PENETRATION BEYOND ~1" WITH 140# BOUNCING ROD WITH CHANGE TO 300# HAMMER.

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Figure 3

U. S. ARMY
CORPS OF ENGINEERS
NEW ENGLAND DIVISION

FIELD LOG OF TEST PROBE

Site BLACK LEDGE / GROTON Page 1 of 1 Pages

Probe No. 4 Desig. MP 4 Diam. (Casing) _____

Co-ordinates: N 43992.27 E 26136.38

NOTE: RIG IN LINE WITH LIGHT HOUSE & CAN R "2" OFF PINE ISLAND.

Elevation Top of Boring -18.0' M.S.L.
Total Overburden Drilled 20.0' Feet
Elevation Top of Rock — M.S.L.
Total Rock Drilled — Feet
Elevation Bottom of Boring -38.0' M.S.L.
Total Depth of Boring 20' Feet
Core Recovered — % No. Boxes _____
Core Recovered — Ft. ____ Diam. ____ In.
Soil Samples — In. Diam. ____ No.
Soil Samples _____ In. Diam. ____ No.

Hammer Wt. 140# Boring Started 0840 1/6/82
Hammer Drop _____
Casing Left _____ Boring Completed 0900 1/6/82
Subsurface Water Data _____ Page _____
Obs. Well _____
Drilled By P. D. MALONEY
Mfg. Des. Drill ACKER
Inspected By: M. SHERRILL
Classification By: M. SHERRILL
Classification By: _____

DEPTH (1" = 5')	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER FT / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
			1	1	140# / 30" FALL	①
			1-1	1-1		VERY SOFT MARINE WORKED SILTS
				8		
				15		
5				9		SAND & GRAVELS (?) — LOOSE TO MD
				1		
				1		VERY SOFT. — SILTS OR PEAT LAYER (?) ②
			7'-10'	W O H		
10				5		SOFT - V. SOFT SILTS
				2		
				3		
				3		
				13		CHANGE TO V. DENSE GRANULAR
15				42		
				37		
				30		
				26		
				26		
20					REQ'D DEPTH TERM.	REQ'D DEPTH.

GENERAL REMARKS: @ W.D. 18' — TIDE FALLING DUE TO 9' DRAFT OF TUG, PROBING NORTH OF LOCATION, BUT KEEPING ON N/S LINEATION.

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Figure 3

U S. ARMY
CORPS OF ENGINEERS
NEW ENGLAND DIVISION

FIELD LOG OF TEST PROBE

Site BLACK LEDGE Page 1 of ___ Pages

Probe No. 5 Desig. MP 5 Diam. (Casing) _____

Co-ordinates: N 43990.92 E 26134.01

Elevation Top of Boring -21.5' M.S.L. Hammer Wt. _____ Boring Started 0920 1/6/82

Total Overburden Drilled 20' Feet Hammer Drop _____

Elevation Top of Rock — M.S.L. Casing Left _____ Boring Completed 0950 1/6/82

Total Rock Drilled — Feet Subsurface Water Data _____ Page _____

Elevation Bottom of Boring -41.5' M.S.L. Obs. Well _____

Total Depth of Boring 20' Feet Drilled By P.J. MALONEY

Core Recovered — % No. Boxes _____ Mfg. Des. Drill ACKER

Core Recovered — Ft: ___ Diam. ___ In. Inspected By: M. SHERRILL

Soil Samples — In. Diam. ___ No. Classification By: M. SHERRILL

Soil Samples — In. Diam. ___ No. Classification By: _____

NOTE: BARGE & RIG WEST ~ 50'(?) FROM LINE BETWEEN BUOY N "2" & PT. C & BUOY R "2" OFF BNE ISLAND. CASING APPEARS TO BE JUST SOUTH OF LINE OF PT A BUOY & NEW LONDON HARBOR LIGHT (WHITE TOWER).

DEPTH (1" = 5')	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER FT / CORE RECV'Y	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
			0 2	WOR		
				1	140#, 30"	V. LOOSE TO LOOSE SILTY SANDS, SHELL FRAGS. ① ②
				WOH		
				WOH		
5				3		
				4		
				15		
				32		
				41		DENSE SANDS & GRAVELS
10				42		
				27		
				31		
				31		
				37		
15				52		VERY DENSE (TILL ?)
				45		
				56		
				61		
				55		
20					TERM.	REQ'D DEPTH 20 FT REC'D. 6.50 FT.

GENERAL REMARKS: WATER 21' DEPTH.
① 1 BLOW/1 FT + 1' UNDER WT of HAMMERS
② ADDED 5' ROD + HAMMER & PUSHED 1 FT.

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Figure 3

U. S. ARMY
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NEW ENGLAND DIVISION

FIELD LOG OF TEST PROBE

Site BLACK LEDGE Page 1 of 1 Pages

Probe No. _____ Desig. MP 6 Diam. (Casing) _____

Co-ordinates: N 43990.61 E 26134.28

Elevation Top of Boring -19.2' M.S.L. Hammer Wt. _____ Boring Started 1000 1/6/81

Total Overburden Drilled 20.5' Feet Hammer Drop _____ Boring Completed 1033 1/6/81

Elevation Top of Rock — M.S.L. Casing Left _____

Total Rock Drilled — Feet Subsurface Water Data _____ Page _____

Elevation Bottom of Boring -39.7' M.S.L. Obs. Well _____

Total Depth of Boring 20.5' Feet Drilled By PJ MALONEY

Core Recovered — % No. Boxes _____ Mfg. Des. Drill ACKER

Core Recovered — Ft: _____ Diam. _____ In. Inspected By: M. SHERRILL

Soil Samples _____ In. Diam. _____ No. Classification By: M. SHERRILL

Soil Samples _____ In. Diam. _____ No. Classification By: _____

NOTE: NOT MUCH TO TIE IN LOCATIONS ATTEMPTED TO KEEP LAST POSITION H-5 & BUOY "2" (PINE ISLAND) HEAD ASTERN.

DEPTH	1" = 5'	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER FT / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
				0 \ 4.5	100R & HAM.		V. Soft Silt/Sand & Shell Frags
5					12	140#, 30" FALL	4.5'
					14		
					5		
					8		
					29		8.5' DENSE
10					33		← COBBLES (?)
					60		10.5' VERY DENSE (TILL)?
					72		
					35	300#H	
					25		
15					17		
					22		
					36		
					28		
					20		
20					38		20.5' TERM.
						TERM @ 20.5'	

GENERAL REMARKS: 18.5' WATER

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Figure 3

U. S. ARMY
CORPS OF ENGINEERS
NEW ENGLAND DIVISION

FIELD LOG OF TEST PROBE

Site: BLACK LEDGE — Page 1 of 1 Pages

Probe No. ____ Desig. MP7 Diam. (Casing) ____

Co-ordinates: N 26,134.68 E 43990.18

Elevation Top of Boring: −23.2 M.S.L.
Total Overburden Drilled: 20 Feet
Elevation Top of Rock: —— M.S.L.
Total Rock Drilled: —— Feet
Elevation Bottom of Boring: −43.2' M.S.L.
Total Depth of Boring: 20 Feet
Core Recovered: — % No. Boxes ____
Core Recovered: — Ft. ____ Diam. ____ In.
Soil Samples: — In. Diam. ____ No.
Soil Samples: — In. Diam. ____ No.

Hammer Wt. ____ Boring Started: 1135 1/6/81
Hammer Drop ____ Boring Completed: 1150 1/6/81
Casing Left ____
Subsurface Water Data ____ Page ____
Obs. Well ____
Drilled By: P.J. MALONEY
Mfg. Des. Drill: ACKER
Inspected By: M. SHERRILL
Classification By: M. SHERRILL
Classification By: ____

DEPTH (1" = 6')	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER FT / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
			0	WOR + HAM.		SANDY SILTS, MARINE, SHELLS V. LOOSE/SOFT.
5			4	12	140#, 30" FALL	4.5' MED. DENSE — SILTS, FINE SANDS
				13		
				11		
				6		
				16		
10				21		10.5' DENSE - V. DENSE COBBLES - LOCAL
				48		
				25/6"		
				62		
				29	300# ~ 18" FALL	13' — SAND/GRAVEL
15				24		
				19		16' CHANGE TO ~ DENSE TO MED. DENSE ~ FINE SANDY SILT (?) (300# HAMMER)
				11		
				10		
				7		
20				10		TERM. - REQ'D DEPTH.

GENERAL REMARKS: ① 22 FT. WATER DEPTH @ 1130

NOTE: LOCATION ATTEMPTED TO PLACE BARGE AT INTERSECTION OF LINE BETWEEN PTC BUOY AND ABAND. TOWER AT AVERY PT WITH LINE FROM N. LONDON LIGHT BETWEEN EXPOSED ROCKS AND CAN N "6".

Invitation No. DACW33-81-B-0056

Figure 3

LOCATION NOTE: BARGE ON LINE WITH CAN C"3" & EAST END OF BLACK ROCK AS EXPOSED. ALSO, JUST SOUTH OF LINE WITH R., LIGHT & CAN N"6".

U.S. ARMY
CORPS OF ENGINEERS
NEW ENGLAND DIVISION

FIELD LOG OF TEST PROBE

Site BLACK LEDGE Page 1 of ___ Pages

Probe No. ___ Desig. MP8 Diam. (Casing) ___

Co-ordinates: N 43989.85 E 26135.16

Elevation Top of Boring -27' M.S.L.
Total Overburden Drilled 20 Feet
Elevation Top of Rock ___ M.S.L.
Total Rock Drilled ___ Feet
Elevation Bottom of Boring -47 M.S.L.
Total Depth of Boring 20 Feet
Core Recovered ___ % No. Boxes ___
Core Recovered ___ Ft. ___ Diam. ___ In.
Soil Samples ___ In. Diam. ___ No.
Soil Samples ___ In. Diam. ___ No.

Hammer Wt. ___
Hammer Drop ___
Casing Left ___
Subsurface Water Data ___ Page ___
Obs. Well ___
Drilled By P.J. MALONEY
Mfg. Des. Drill ACKER
Inspected By: M. SHERRILL
Classification By: M. SHERRILL
Classification By: ___

Boring Started 1008 1/7/82
Boring Completed 1030 1/7/82

DEPTH (1" = 5')	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER FT / CORE RECV'Y	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
			0-6	WOR	RODS RELEASED	VERY LOOSE/SOFT SILTS, SHELLS
5						5
				1+ WOH	+5' 140#, 30" FALL	① 7.5
				2		
				11		
10				8		10' 10
				18		
				36	+5'	DENSE TO VERY DENSE GRANULAR
				31		
				28		
15				43		
				43		
				38	+5'	GRANULAR WITH MORE FINES (?) TILL (?)
				46		
				50		
20				61	TERMINATE.	20' REQ'D. PENETRATION

GENERAL REMARKS: WATER DEPTH 27 FT.
① 1 BLOW/3", RODS DROP 15", UNDER WEIGHT OF RODS & HAMMER.

Invitation No. DACW33-81-B-0056

Figure 3

U. S. ARMY
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NEW ENGLAND DIVISION

FIELD LOG OF TEST PROBE

Site BLACK LEDGE Page 1 of 1 Pages

Probe No. _____ Desig. MP9 Diam. (Casing) _____

Co-ordinates: N 43989.33 E 26135.54

LOCATION NOE: ATTEMPTED TO GET BARGE ON LINE WITH CAN N"4" AND VIXEN LEDGE.

Elevation Top of Boring ~18.6' M.S.L. Hammer Wt. _____ Boring Started 0920 1/7/82

Total Overburden Drilled 20 Feet Hammer Drop _____ Boring Completed 0941 1/7/82

Elevation Top of Rock — M.S.L. Casing Left _____

Total Rock Drilled — Feet Subsurface Water Data _____ Page _____

Elevation Bottom of Boring -38.6' M.S.L. Obs. Well _____

Total Depth of Boring 20' Feet Drilled By P.J. MALONEY

Core Recovered — % No. Boxes _____ Mfg. Des. Drill ACKER

Core Recovered — Ft: ____ Diam. ____ In. Inspected By: M. SHERRILL

Soil Samples — In. Diam. ____ No. Classification By: M. SHERRILL

Soil Samples — In. Diam. ____ No. Classification By: _____

DEPTH	1" = 5'	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER FT / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
				0-2	DH + WOR	140# HAMMER.	VERY SOFT, PROB ORG. SILT MARINE
					6	140#, 30" FALL	3' MED. DENSE or STIFF SANDS, GRAVELLY SANDS
					18		
5					19		
					13		
					9		
					3		VERY LOOSE / SOFT (PEAT?)
					2		
10					1		ORGANIC LAYER → BARRIER BEACH (?)
					3		
					6		LOOSE; SANDY SILT
					3		
					5		
15					6		
					10		MED DENSE TO DENSE, GRANULAR
					14		
					12		
					26		
20					55		V. DENSE — TILL (?)
						TERMINATE.	REQ'D PENETRATION.
							* STRATIFIED — WASHOVER DEP'S DUNES OVER PEAT?

GENERAL REMARKS: WATER DEPTH 19 FT. 0915
TRACE ROOT MATERIALS FROM ROD WITH SILTY FINE SANDS/

Invitation No. DACW33-81-B-0056

Figure 3

LOC. NOTE: SPUDS DOWN ORIG AT 8989.7 ANTED N.L. LIGHT & ROCKS IN LINE WITH BARGE/RIG. MOVED NORTH

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NEW ENGLAND DIVISION

FIELD LOG OF TEST PROBE

Site BLACK LEDGE Page 1 of 1 Pages

Probe No. ____ Desig. MP10 Diam. (Casing) ____

Co-ordinates: N 43990.10 E 26133.50

Elevation Top of Boring -23.8' M.S.L.
Total Overburden Drilled 20 Feet
Elevation Top of Rock — M.S.L.
Total Rock Drilled — Feet
Elevation Bottom of Boring -43.8' M.S.L.
Total Depth of Boring 20 Feet
Core Recovered / % No. Boxes ____
Core Recovered / Ft: ____ Diam. ____ In.
Soil Samples / In. Diam. ____ No.
Soil Samples / In. Diam. ____ No.

Hammer Wt. ____ Boring Started 1122 1/7/82
Hammer Drop ____ Boring Completed 1150 1/7/82
Casing Left ____
Subsurface Water Data ____ Page ____
Obs. Well ____
Drilled By P. J. MALONEY
Mfg. Des. Drill ACKER
Inspected By: M. SHERRILL
Classification By: M. SHERRILL
Classification By: ____

DEPTH	1" = 5'	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER FT / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
				0-2.5	WOR + DN	RODS & HAMMER	V. LOOSE/SOFT TO LOOSE SILTY SANDS, SOME GRAVEL
					2	140# / 30" FALL	
					5		
5				4.5-7	3		
					7	+5'	
					3		
10					1		
					24		M. DENSE TO DENSE GRANULAR, GRAV. SANDS -
					33	+5'	
					22		
					18		
					19		M. DENSE — FINE SANDS TO SILTY SAND
15					16		
					12		
					22	+4'	
					39		DENSE - V. DENSE TILL
					54		
					60		
20						END OF PROBE	REQ'D PENETRATION TERMINATE

GENERAL REMARKS: 23' WATER DEPTH
① 3 BLOWS / 30 INCHES
② 22 BLOWS/6" ③ 22 BLOWS/6"

Invitation No. DACW33-81-B-0056

Figure 3

PC. NOTE: BARGE ON LINE WITH CHANNEL BODY 0"2" & AN W"4" OFF C O LEG

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FIELD LOG OF TEST PROBE

Site BLACK LEDGE Page 1 of ___ Pages

Probe No. ___ Desig. MP11 Diam. (Casing) ___

Co-ordinates: N 43989.21 E 26134.18

Elevation Top of Boring -28.6' M.S.L.
Total Overburden Drilled 20 Feet
Elevation Top of Rock — M.S.L.
Total Rock Drilled — Feet
Elevation Bottom of Boring -48.6' M.S.L.
Total Depth of Boring 20 Feet
Core Recovered — % No. Boxes ___
Core Recovered — Ft: ___ Diam. ___ In.
Soil Samples — In. Diam. ___ No.
Soil Samples ___ In. Diam. ___ No.

Hammer Wt. ___
Hammer Drop ___
Casing Left ___
Subsurface Water Data ___ Page ___
Obs. Well ___
Drilled By P. J. MALONEY
Mfg. Des. Drill ACKER
Inspected By: W. SHERRILL
Classification By: W. SHERRILL
Classification By: ___

Boring Started 1055 1/7/82
Boring Completed 1110 1/7/82

DEPTH		CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER FT / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
	1"=6'						
				0	WOR		V. LOOSE/SOFT ORG. SILTS —
				1			
				6			
5						WEIGHT OF RODS & DRIVE HEAD	
					3	+5' 140#, 30" FALL	
					6		
					16		
					12		DENSE TO V. DENSE GRAN. (COBBLES/GRAVEL)? TILL (?) OR "
10					22	+5'	
					41		
					61		
					24	300 # HAMMER	
					16		
15					17	+5'	
					27		
					23		
					36		
					81		
20						TERMINATE	REQ'D. PENETRATION

GENERAL REMARKS: 28 FT WATER → 1050
6 FT PEN. W/ RODS & DRIVE HEAD ONLY

Invitation No. DACW33-81-B-0056

Figure 3

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FIELD LOG OF TEST ~~BORING~~ PROBE

Site: BLACK LEDGE Page 1

Boring No. _____ Desig. MP 12 Diam. (Casing) _____

Co-ordinates: N 26140.91 E 43993.80

Elevation Top of Boring: -29.8' M.S.L.
Total Overburden Drilled: 12 Feet
Elevation Top of Rock: -41.8' M.S.L.
Total Rock Drilled: _____ Feet
Elevation Bottom of Boring: -41.8' M.S.L.
Total Depth of Boring: 12 Feet
Core Recovered: ___ % No. Boxes _____
Core Recovered: ___ Ft. ___ Diam. ___ In.
Soil Samples: ___ In. Diam. ___ No.
Soil Samples: ___ In. Diam. ___ No.

Hammer Wt. _____
Hammer Drop _____
Casing Left _____
Subsurface Water Data _____ Page _____
Obs. Well _____
Drilled By: P.J. MALONEY
Mfg. Des. Drill: ACKER
Inspected By: M. SHERRILL
Classification By: M. SHERRILL
Classification By: _____

Boring Started: 0805 1/8/82
Boring Completed: 0930 1/8/82

NOTE: ON LINE WITH PTA & PT D.

DEPTH 1" = 5'	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER FT. CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
0			0' - 7.5'	WOR	RODS RELEASED & HAMMER PLACED.	VERY SOFT - SILTS - DEPOSITION OF FINES FROM RIVER LOAD & REWORKING BY MARINE CURRENTS
			7.5 - 9.0	1	140#	
10				31		
				52		V. DENSE
				50		
				55 - 75	140# ROD WALKING 300# O-REV.	12' REFUSAL
15						

GENERAL REMARKS: 31' WATER 0750. CHART INDICATES ~ 21-25' !
① 18" PEN. UNDER 1 BLOW.

Boring No. MP 12 ~~PROBE~~

Figure 1

Invitation No. DACW33-81-B-0056

U. S. ARMY
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NEW ENGLAND DIVISION

FIELD LOG OF TEST ~~BORING~~ PROBE

Site BLACK LEDGE Page 1 of 1

Boring No. _____ Desig. MP13 Diam. (Casing) _____

Co-ordinates: N 43993.33 E 26140.80

Elevation Top of Boring -28' M.S.L.
Total Overburden Drilled 8.5' Feet
Elevation Top of Rock -36.5' M.S.L.
Total Rock Drilled — Feet
Elevation Bottom of Boring -36.5' M.S.L.
Total Depth of Boring 8.5' Feet
Core Recovered — % No. Boxes _____
Core Recovered — Ft: ____ Diam. ____ In.
Soil Samples — In. Diam. ____ No.
Soil Samples — In. Diam. ____ No.

Hammer Wt. 140
Hammer Drop 30"
Casing Left —
Subsurface Water Data _____ Page _____
Obs. Well _____
Drilled By P. J. MALONEY
Mfg. Des. Drill ACKER
Inspected By: M. SHERRILL
Classification By: M. SHERRILL
Classification By: _____

Boring Started 0900 1/8/81
Boring Completed 0915 1/8/81

LOC NOTE: PT A & L. HOUSE IN LINE W. RIG ON BARGE BARGE ON LINE W PTC BUOY AND ROCKS, JUST EXPOSED BARGE JUST SOUTH OF LINE WITH C"3" & R"2" OFF PINE IS.

DEPTH	1" = 5	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER FT. CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
					WOR + H.	RODS RELEASED & HAMMER PLACED	VERY SOFT DEP. OF RIVER SILT LOAD, REWORKED BY CURRENTS
5					5	140#, 30"	
					7		DENSE GRANULAR
					25		
					28	→ 8.5' BOUNC. REF & 300# → SAME.	TERM. REF
10							

5

8.5 ①

GENERAL REMARKS: 29' WATER @0858
① 28 BLOWS/6", THEN SOLID REF TO 140# & 300# HAMMERS

Boring No. _____

Figure 1

Invitation No. DACW33-81-B-0056

N LINE WITH PT A & PT D, LINE WAS EXTENDED FROM RAILWAY ON LT. HOUSE 420' BACK TO PT A, BUOY DROPPED AND BARGE MOVED TO LOCATION.

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FIELD LOG OF TEST ~~BORING~~ PROBE

Site BACK LEDGE

Boring No. _____ Desig. HP14 Dim. (Casing) _____

Co-ordinates: N 26141.14 / 420' OFF PT D. E _____

Elevation Top of Boring	-33.1' M.S.L.	Hammer Wt.	140/300
Total Overburden Drilled	4.5' Feet	Hammer Drop	30
Elevation Top of Rock	-37.6' M.S.L.	Casing Left	—
Total Rock Drilled	— Feet	Subsurface Water Data	_____ Page _____
Elevation Bottom of Boring	-37.6' M.S.L.	Obs. Well	—
Total Depth of Boring	4.5 Feet	Drilled By	P.J. MALONEY
Core Recovered	— % No. Boxes _____	Mfg. Des. Drill	ACKER
Core Recovered	— Ft. _____ Diam. _____ In.	Inspected By:	M. SHERRILL
Soil Samples	— In. Diam. _____ No.	Classification By:	M. SHERRILL
Soil Samples	— In. Diam. _____ No.	Classification By:	_____

Boring Started 12/21/81 1315

Boring Completed 12/21/81 1350

DEPTH (1" = 5')	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER FT. / CORE RECV'Y	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
			0	WOR	RODS RELEASED	V. SOFT RIVER LOAD FINES ①
			3			DENSE — V. DENSE GRANULAR WITH FINES? — TILL? ②
				36		
5				48/60	4.5' — 48 B/6" then 60/OPEN.	REF @ 4.5' WEATHERED ROCK — THIN SURFICIAL COVER OF TILL?

GENERAL REMARKS: 32 FT WATER (1300)
① WT of RODS 0-3'
② OPEN ROD RETURN: GRANITIC GRAVEL WITH OXID. STAINING, ALSO FINE SAND & SILT -

Boring No. _____

Figure 1

Invitation No. DACW33-81-B-0056

MP 15 IS DC. IN CABLE AREA, MOVING FAST.

ST NORTH OF LINE BETWEEN ROCKS & PT. A.

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FIELD LOG OF TEST ~~BORING~~ PROBE

Site BLACK LEDGE Page 1

Boring No. _____ Desig. MP15 Diam. (Casing) _____

Co-ordinates: N 43992.88 E 26139.25

Elevation Top of Boring -21.5' M.S.L.
Total Overburden Drilled 8.5' Feet
Elevation Top of Rock (*) -30.0' M.S.L.
Total Rock Drilled SEE NOTE (1) — Feet
Elevation Bottom of Boring -30' M.S.L.
Total Depth of Boring 8.5' Feet
Core Recovered — % No. Boxes _____
Core Recovered — Ft. _____ Diam. _____ In.
Soil Samples — In. Diam. _____ No.
Soil Samples — In. Diam. _____ No.

Hammer Wt. 140 Boring Started 1023 1/8/82
Hammer Drop 30" Boring Completed 1045 1/8/82
Casing Left _____
Subsurface Water Data _____ Page _____
Obs. Well _____
Drilled By P.J. MALONEY
Mfg. Des. Drill ACKER
Inspected By: M. SHERRILL
Classification By: M. SHERRILL
Classification By: _____

DEPTH	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER FT. / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
1" = 5'						
			0		RODS RELEASED	SOFT SILTS, SHELLS, PROB.
			3	WOR		
				11	140#, 30"	
				52		V. DENSE – TILL PROB.
5				40		
				53		
				31		
				18+	18 BLOWS – 0 PEN 5/10 CH TO 300# 55 BLOWS/6" PEN. THEN 35/6	8.5' REF. (1)
10						
15						

GENERAL REMARKS: 22 FT WATER DEPTH.
1010 HRS
(1) Refusal 140#, change to 300# – DOT BOUNCING CEF – COULD BE ON BOULDER.

Boring No. _____

Figure 1

Invitation No. DACW33-81-B-0056

NEW ENGLAND DIVISION

FIELD LOG OF TEST ~~BORING~~ PROBE

Co-ordinates: N 43992.58 E 26139.45

P #16 LOCATED IN CABLE AREA. MOVING EAST. BARGE IN LINE WITH BUOYS N"6" AT ROCKS AND N"4" ALSO WITH LT. HOUSE & C.N. C "3"

Elevation Top of Boring	-24.3' M.S.L.	Hammer Wt. 140	Boring Started 0948 1/8/82
Total Overburden Drilled	3.5' Feet	Hammer Drop 30"	Boring Completed 0953 1/8/82
Elevation Top of Rock	-27.8' M.S.L.	Casing Left	
Total Rock Drilled	— Feet	Subsurface Water Data	Page
Elevation Bottom of Boring	-27.8' M.S.L.	Obs. Well	
Total Depth of Boring	3.5' Feet	Drilled By	P. J. MALONEY
Core Recovered	% No. Boxes	Mfg. Des. Drill	ACKER
Core Recovered	Ft: Diam. In.	Inspected By:	M. SHERRILL
Soil Samples	In. Diam. No.	Classification By:	M. SHERRILL
Soil Samples	In. Diam. No.	Classification By:	

DEPTH	1"=5'	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER FT. / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
				0 3.5	WOR	RODS RELEASED	V. SOFT / LOOSE SILTS/SANDS
5					45	0 PEN. UNDER 45 BLOWS change to 300# — No pen. RODS BOUNCING.	3.5' 0 PENET. BEDROCK OR BOULDER — FEELS & SOUNDS VERY SOLID.
10							

GENERAL REMARKS: 25' WATER AT 0945 HRS.

~~Boring~~ No. M#16 PROBE

Figure 1

Invitation No. DACW33-81-B-0056

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NEW ENGLAND DIVISION

FIELD LOG OF TEST PROBE

Site BLACK LEDGE Page 1 of ___ Pages

Probe No. 17 Desig. MP 17 Diam. (Casing) ___

Co-ordinates: N 43992.29 E 26139.9

RGE ON
LINE WITH
CAN C "3"
CAN R "2"

Elevation Top of Boring -29.7' M.S.L.
Total Overburden Drilled 20 Feet
Elevation Top of Rock ___ M.S.L.
Total Rock Drilled ___ Feet
Elevation Bottom of Boring -49.7' M.S.L.
Total Depth of Boring 20' Feet
Core Recovered ___ % No. Boxes ___
Core Recovered ___ Ft: ___ Diam. ___ In.
Soil Samples ___ In. Diam. ___ No.
Soil Samples ___ In. Diam. ___ No.

Hammer Wt. ___ Boring Started 1512 1/7/82
Hammer Drop ___ Boring Completed 1531 1/7/82
Casing Left ___
Subsurface Water Data ___ Page ___
Obs. Well ___
Drilled By P. J. MALONEY
Mfg. Des. Drill ACKER
Inspected By: M. SHERRILL
Classification By: M. SHERRILL
Classification By: ___

DEPTH	1" = 5'	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER FT / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
				0-9	WOR	WEIGHT OF RODS AS RELEASED.	V. SOFT/LOOSE SILTS - SANDY SILTS
5							
	0.6				1	* SEATED HAMMER	
10					16	+5'	M. DENSE GRAV SILTY SAND/GR.
					18		
					58		V. DENSE - GRAV?
					33	* 6" PEN. (?) + 300 #	
					16		DENSE TO V. DENSE GRANULAR.
					19		
15					12	+5	
					15		
					40		
					22		
					25		
20					26	* 6" TERM.	- POSS. TILL OR IMMINENT REF. REQ'D. PENETR.

GENERAL REMARKS: WATER DEPTH 29'
① 9.5' PEN. UNDER RODS & DRIVE HEAD
1' when HAMMER WENT ON, 1 BLOW/6" 9'-9.5'

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Figure 3

U. S. ARMY
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NEW ENGLAND DIVISION

FIELD LOG OF TEST PROBE

Site BLACK LEDGE Page 1 of 1 Pages

Probe No. ____ Desig. MP18 Diam. (Casing) ____

Co-ordinates: N 43991.61 E 26140.3

NVERY PT.
BUOY "I"
C "3"
& BARGE
N LINE.

Elevation Top of Boring	-32' M.S.L.	Hammer Wt. ____	Boring Started 1420 1/7/82
Total Overburden Drilled	20 Feet	Hammer Drop ____	Boring Completed 1445 1/7/82
Elevation Top of Rock	— M.S.L.	Casing Left ____	
Total Rock Drilled	____ Feet	Subsurface Water Data	____ Page ____
Elevation Bottom of Boring	-52' M.S.L.	Obs. Well ____	
Total Depth of Boring	20 Feet	Drilled By	PJ MALONEY A.T.B
Core Recovered	— % No. Boxes ____	Mfg. Des. Drill	ACKER
Core Recovered	— Ft: ____ Diam. ____ In.	Inspected By:	MIKE SHERRILL
Soil Samples	— In. Diam. ____ No.	Classification By:	MIKE SHERRILL GZA
Soil Samples	— In. Diam. ____ No.	Classification By:	____

DEPTH 1" = 5'	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER FT / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
			0		WEIGHT OF RODS	V. SOFT / LOOSE
			1	WOR		ADJACENT CHANNEL & LT. HOUSE —
			125		+ DRIVE HEAD.	①
5				+DH +H.	+ HAMMER.	RIVER LOAD OF FINES, DEPOSITION AT OUTLET TO GRADIENT BASE — SEA LEVEL — NEARSHORE MARINE REWORKING.
					DRILLER/HELPER PUSHED RODS ADDITIONAL 2 FT.	
10						
						12.5'
				2	140 # H.	LOOSE - M. DENSE SILTY SANDS / SOME GRAVEL?
				5		
15				5		
				12		
				47		DENSE - V. DENSE GRANULAR
				75		18.5
				34	300 # H.	
20				21/6		REQ'D PENET.

GENERAL REMARKS: WATER DEPTH 31 FT.
① RODS PEN. ~ 9 FT, ADDITIONAL 3.5' UNDER D. HEAD & HAMMER (1 BLOW WHEN SEATED)

Invitation No. DACW33-81-B-0056

Figure 3

U. S. ARMY
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FIELD LOG OF TEST PROBE

Site BLACK LEDGE Page 1 of 1 Pages

Probe No. ____ Desig MP 19 Diam. (Casing) ____

Co-ordinates: N 43991.36 E 26139.79

Elevation Top of Boring -31' M.S.L.
Total Overburden Drilled 21' Feet
Elevation Top of Rock ____ M.S.L.
Total Rock Drilled ____ Feet
Elevation Bottom of Boring -52' M.S.L.
Total Depth of Boring 21' Feet
Core Recovered ✓ % No. Boxes ____
Core Recovered ✓ Ft: ____ Diam. ____ In.
Soil Samples ✓ In. Diam. ____ No.
Soil Samples ✓ In. Diam. ____ No.

Hammer Wt. 140/300# Boring Started 1350 1/7/82
Hammer Drop 30/24 Boring Completed 1405 1/7/82
Casing Left ____
Subsurface Water Data ____ Page ____
Obs. Well ____
Drilled By ATL. T.B. PJ MALONEY
Mfg. Des. Drill ACKER
Inspected By: MIKE SHERRILL
Classification By: MIKE SHERRILL GEA
Classification By: ____

DEPTH 1"=5'	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER FT / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
			0		RODS RELEASED	
			1	WOR	~5'	V. LOOSE/SOFT
			7.5	+	DRIVE HEAD & HAMMER	~5.5 PEN UNDER
				DH	SEATED, ADD.	WT. OF RODS
5				+	2.5' DROP.	+ 2" UNDER
				H.		DRIVE HEAD + HAMMER
						7.5
				15	140#, 30"	M. DENSE GRANULAR
				16	+5'	
10				12		10.5
				6		
				2		LOOSE - V. LOOSE
		12.5-14.5		WOH		(PEAT LAYER ?) ①
				*	+5'	14.5
15				6		
				12		V. DENSE -
				53		INTO COBBLES (?)
				55		* OLD STREAM BED
				41	300# HAMMER.	MATERIALS (?)
20				37		
				19/6"		REQ'D PENETRATION

GENERAL REMARKS: 30 FT. WATER DEPTH
① 12.5 - 14.5 2' PEN. UNDER WT OF TOOLS - POSIT. RE RIVER MOUTH - STRAT. SEDS - OLD FLOOD TERRACE ?

Invitation No. DACW33-81-B-0056

Figure 3

U. S. ARMY
CORPS OF ENGINEERS
NEW ENGLAND DIVISION

FIELD LOG OF TEST PROBE

Site BLACK LEDGE Page 1 of 1 Pages

Probe No. 20 Desig. MP 20 Diam. (Casing) NO CASING

Co-ordinates: N 43990.83 E 26139.09

Elevation Top of Boring -34.3' M.S.L.
Total Overburden Drilled 11.3' Feet
Elevation Top of Rock -45.6' M.S.L.
Total Rock Drilled — Feet
Elevation Bottom of Boring -45.6' M.S.L.
Total Depth of Boring 11.3' Feet
Core Recovered — % No. Boxes —
Core Recovered — Ft. — Diam. — In.
Soil Samples — In. Diam. — No.
Soil Samples — In. Diam. — No.

Hammer Wt. 140#/300 Boring Started 1300 1/7/82
Hammer Drop 30/24"
Boring Completed 1330 1/7/82
Casing Left —
Subsurface Water Data — Page —
Obs. Well —
Drilled By ATL. TEST BOR. PT MALDONADO
Mfg. Des. Drill ACKER
Inspected By: MIKE SHERRILL
Classification By: MIKE SHERRILL GZA
Classification By: —

DEPTH 1"=5'	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER FT / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
			0-4	WOR	RODS RELEASED	V. LOOSE/SOFT
5				11	140#, 30"	
				23		DENSE GRANULAR
				27	+5'	
				24		
				32		
				52		V. DENSE GRAN.
10				71		
				20/27	300#	REFUSAL @ 11.3'

GENERAL REMARKS: 33' WATER DEPTH.
(1) RIG ON LINE W/ N"6" (RX) & R"2" (PINE ISL)
(2) APPRX 3" PENET. WITH 20 BLOWS W/ 300#, THEN 0" PEN. WITH 27 BLOWS.

Invitation No. DACW33-81-B-0056

Figure 3

U. S. ARMY
CORPS OF ENGINEERS
NEW ENGLAND DIVISION

FIELD LOG OF TEST PROBE

Site BACK BEACH Page 1 of 1 Pages

Probe No. 21 Desig. MP 21 Diam. (Casing) _____

Co-ordinates: N 48990.31 E 26137.38

Elevation Top of Boring -20' M.S.L.
Total Overburden Drilled 6.5' Feet
Elevation Top of Rock -26.5' M.S.L.
Total Rock Drilled _____ Feet
Elevation Bottom of Boring -26.5' M.S.L.
Total Depth of Boring 6.5' Feet
Core Recovered ____ % No. Boxes _____
Core Recovered ____ Ft: ____ Diam. ____ In.
Soil Samples ____ In. Diam. ____ No.
Soil Samples ____ In. Diam. ____ No.

Hammer Wt. _____
Hammer Drop _____
Casing Left _____
Subsurface Water Data _____ Page _____
Obs. Well _____
Drilled By ATLANTIC TEST BORING
Mfg. Des. Drill ACKER POST
Inspected By: MIKE SHERRILL
Classification By: MIKE SHERRILL GZA
Classification By: _____

Boring Started 0800 1/7/82
Boring Completed 0820 1/7/82

BARGE JUST WEST OF LINE F N "4" & C "3".

DEPTH (Ft)	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER FT / CORE RECV'Y	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
			0-2	WOR	RODS RELEASED	VERY LOOSE/SOFT
				33		
				31	300# HAMMER	GRANULAR SANDS/GRAVELS
5				13		
				36		
				47		①
				20	BOUNCING RODS OPEN.	REF. @ 6.5'.

GENERAL REMARKS: WATER DEPTH 21 FT.
① ROD BOUNCING UNDER 300# HAMMER - NO PENETRATION WITH 20 BLOWS -

Invitation No. DACW33-81-B-0056

Figure 3

RIG & BARGE ON LINE WITH PT A & ROCKS.

U S. ARMY
CORPS OF ENGINEERS
NEW ENGLAND DIVISION

FIELD LOG OF TEST PROBE

Site BLACK LEDGE Page 1 of 1 Pages

Probe No. 22 Desig. NP22 Diam. (Casing) _____

Co-ordinates: N 43989.92 E 26136.67

Elevation Top of Boring -23.3' M.S.L.
Total Overburden Drilled 20 Feet
Elevation Top of Rock — M.S.L.
Total Rock Drilled — Feet
Elevation Bottom of Boring -43.3 M.S.L.
Total Depth of Boring 20 Feet
Core Recovered — % No. Boxes _____
Core Recovered — Ft. ____ Diam. ____ In.
Soil Samples — In. Diam. ____ No.
Soil Samples — In. Diam. ____ No.

Hammer Wt. 140#/300# Boring Started 0835 1/7/82
Hammer Drop 30/24 in
Boring Completed 0900 1/7/82
Casing Left _____
Subsurface Water Data _____ Page _____
Obs. Well _____
Drilled By P.T. MALONEY ATL. TB
Mfg. Des. Drill ACKER
Inspected By: M. SHERRILL GZA
Classification By: M. SHERRILL GZA
Classification By: _____

DEPTH (ft)	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER FT / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
			0 - 6.5	WOR + DH	RODS RELEASED	V. LOOSE SILTS/
5						
				5	140# HAMMER, 30" DROP.	
				10		
				23		MED. DENSE GRANULAR
10				27		
				32		
				39		
				63		12.5' ~ DENSE GRANULAR -
				24	300# HAMMER	
15				15		
				19		
				30		
				28		
				22		
20				21		
						TERMIN. AT 20 FT REQ'D DEPTH.

GENERAL REMARKS: WATER DEPTH 24'. 0830

Invitation No. DACW33-81-B-0056

Figure 3

ATLANTIC TEST BORING CO., INC.
Complete Soil Investigation Service
34 King St., Boston, Mass. 02122
Phone 436-8428, 436-8429

FIELD LOG OF TEST PROBE

Site BLACK LEDGE GROTON, CONNECTICUT

Probe No. 1 Desig. MP1 Diam. (Casing) _____
Loran 43993.87 26140.11
Co-ordinates: N _____ E _____

Elevation Top of Boring -30.5' M.S.L.
Total Overburden Drilled 20.0' Feet
Elevation Top of Rock _____ M.S.L.
Total Rock Drilled _____ Feet
Elevation Bottom of Boring -50.5' M.S.L.
Total Depth of Boring 20.0' Feet
Core Recovered _____ % No. Boxes _____
Core Recovered _____ Ft: _____ Diam. _____ In.
Soil Samples _____ In. Diam. _____ No.
Soil Samples _____ In. Diam. _____ No.

Hammer Wt. 140lb Boring Started 8:00 12/30/81
Hammer Drop 30" Boring Completed 8:30 12/30/81
Casing Left _____
Subsurface Water Data _____ Page _____
Obs. Well _____
Drilled By ATLANTIC TEST BORING CO.,INC
Mfg. Des. Drill BRIGGS AND STRATTON SKID RIG
Inspected By: M. SHERRILL
Classification By: P.J. MALONEY, JR
Classification By: _____

DEPTH	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER FT / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
1" = 5				pushed		Very Loose Soil
5				3 1 2 1 3 2 2 1 5 9 6 4 4		Very Loose Soil
10						
15						
19						
20				35		Compact SOIL
					BOTTOM OF PROBE AT 20.0'	

GENERAL REMARKS 30.0' WATER
Used 140lb. Hammer

Invitation No. DACW33-81-B-0056

Figure 3

ATLANTIC TEST BORING CO., INC.
34 King Street
Dorchester, Mass. 02122

FIELD LOG OF TEST PROBE

Site BLACK LEDGE GROTON, CONNECTICUT Page 2 of 22 Pages

Probe No. 2 Desig. MP2 Diam (Casing) _____
LORAN
Co-ordinates: N 43993.0 E 26138.7

Elevation Top of Boring -25.0' M.S.L.
Total Overburden Drilled 8.5' Feet
Elevation Top of Rock _____ M.S.L.
Total Rock Drilled _____ Feet
Elevation Bottom of Boring -33.5' M.S.L.
Total Depth of Boring 8.5' Feet
Core Recovered _____ % No. Boxes _____
Core Recovered _____ Ft _____ Diam. _____ In.
Soil Samples _____ In. Diam. _____ No.
Soil Samples _____ In. Diam. _____ No.

Hammer Wt. 140lb. Boring Started 8:55 12/30/81
Hammer Drop 30"
Casing Left _____ Boring Completed 9:10 12/30/81
Subsurface Water Data _____ Page _____
Obs. Well _____
Drilled By ATLANTIC TEST BORING CO INC.
Mfg. Des. Drill BRIGGS & STRATTON SKID RIG
Inspected By: M. SHERRILL
Classification By: P.J. MALONEY, JR.
Classification By: _____

DEPTH (Ft)	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER FT / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
5					PUSHED	Very loose SOIL
5				6 4 19 14 51 36		Medium compact to compact SOIL
10					REFUSAL AT 8.5'	

GENERAL REMARKS. 25.0' WATER
From 0.0' to 8.0' used 140lb. hammer
From 8.0' to 8.5' used 300lb. hammer
Refusal at 8.5'

Invitation No. DACW33-81-B-0056

Figure 3

ATLANTIC TEST BORING CO., INC.
Complete Soil Investigation Service
34 King St. Boston, Mass. 02122
Phone 436-8428, 436-8429

FIELD LOG OF TEST PROBE

Site BLACK LEDGE GROTON, CONNECTICUT Page 3 of 22 Pages

Probe No. 3 Desig. MP3 Diam. (Casing) 26138.0
Loran 43992.68
Co-ordinates: N. _____ E _____

Elevation Top of Boring -16.5' M.S.L.
Total Overburden Drilled 2.1' Feet
Elevation Top of Rock _____ M.S.L.
Total Rock Drilled _____ Feet
Elevation Bottom of Boring -18.6' M.S.L.
Total Depth of Boring 2.1' Feet
Core Recovered _____ % No. Boxes _____
Core Recovered _____ Ft. _____ Diam. _____ In.
Soil Samples _____ In. Diam. _____ No.
Soil Samples _____ In. Diam. _____ No.

Hammer Wt. 140lb. Boring Started 9:30 12/30/81
Hammer Drop 30" Boring Completed 9:40 12/30/81
Casing Left _____
Subsurface Water Data _____ Page _____
Obs. Well _____
Drilled By ATLANTIC TEST BORING CO. INC.
Mfg. Des. Drill BRIGGS & STRATTON SKID RIG
Inspected By: M. SHERRILL
Classification By: P.J. MALONEY, JR.
Classification By: _____

DEPTH	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER FT / CORE RECVY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
					PUSHED	Very loose Soil
				18 / 26/1"		Med compact SOIL
					REFUSAL AT 2.1'	
5						
10						
15						
20						

GENERAL REMARKS: 17.0' WATER
No penetration beyond 1" with 140lb. hammer changed to 300lb. hammer Refusal at 2.1'

BLACK LEDGE

ATLANTIC TEST BORING CO., INC.
Complete Soil Investigation Service
34 King St. Boston, Mass. 02122
Phone 436-[illegible]

FIELD LOG OF TEST PROBE

Site GROTON, CONNECTICUT Page 4 of 22 Pages

Probe No. 4 Desig. MP4 Diam. (Casing) _____
Loran Co-ordinates: N 43992.27 E 26136.38

Elevation Top of Boring -18.0' M.S.L.
Total Overburden Drilled 20.0' Feet
Elevation Top of Rock _____ M.S.L.
Total Rock Drilled _____ Feet
Elevation Bottom of Boring -38.0' M.S.L.
Total Depth of Boring 20.0' Feet
Core Recovered _____ % No. Boxes _____
Core Recovered _____ Ft. _____ Diam. _____ In.
Soil Samples _____ In. Diam. _____ No.
Soil Samples _____ In. Diam. _____ No.

Hammer Wt. 140lb. Boring Started 8:40 1/6/82
Hammer Drop 30"
Boring Completed 9:00 1/6/82
Casing Left _____
Subsurface Water Data _____ Page _____
Obs. Well _____
Drilled By ATLANTIC TEST BORING CO. INC.
Mfg. Des. Drill BRIGGS & STRATTON SKID RIG
Inspected By: M. SHERRILL
Classification By: F.J. MALONEY, JR.
Classification By: _____

DEPTH (Ft. 5)	CORE/SAMPLE NO	SIZE	DEPTH RANGE	BLOWS PER FT / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
				1 1-1 8 15 9 1 1 push 5 2 3 3 13		Very soft Soil
15				43 37 30 26 26		Very compact Soil
20					BOTTOM OF PROBE AT 20.0'	

GENERAL REMARKS: 18.0' WATER

Invitation No. DACW33-81-B-0056

Figure 3

ATLANTIC TEST BORING CO., INC.
34 King Street
Dorchester, Mass. 02122

FIELD LOG OF TEST PROBE

Site BLACK LEDGE GROTON, CONNECTICUT

Probe No. 5 Desig MP5 Diam (Casing) _____

LORAN Co-ordinates N 43990.92 E 26134.01

Elevation Top of Boring -21.5' M.S.L.
Total Overburden Drilled 20.0' Feet
Elevation Top of Rock _____ M.S.L.
Total Rock Drilled _____ Feet
Elevation Bottom of Boring 41.5' M.S.L.
Total Depth of Boring 20.0' Feet
Core Recovered _____ % No. Boxes _____
Core Recovered _____ Ft: _____ Diam. _____ In.
Soil Samples _____ In. Diam. _____ No.
Soil Samples _____ In. Diam. _____ No.

Hammer Wt. 140lb. Boring Started 9:20 1/6/82
Hammer Drop 30"
Casing Left _____ Boring Completed 9:50 1/6/82
Subsurface Water Data _____ Page _____
Obs. Well _____
Drilled By ATLANTIC TEST BORING CO. INC.
Mfg. Des. Drill BRIGGS & STRATTON SKID RIG
Inspected By: M. SHERRILL
Classification By: F.J. MALONEY, JR.
Classification By: _____

DEPTH 1" = 5	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER FT / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
5				pushed		Very loose to loose soil
				3 4 15		Very loose to loose Soil
10 15				32 41 42 27 31 31 37		Compact SOIL
20				52 45 56 61 55		Very Compact SOIL (TILL?)
					BOTTOM OF PROBE AT 20.0'	

GENERAL REMARKS. 21.0' WATER

ATLANTIC TEST BORING CO., INC.
34 King Street
Dorchester, Mass. 02122

FIELD LOG OF TEST PROBE

Site BLACK LEDGE GROTON, CONNECTICUT Page 16 of 22 Pages

Probe No. 6 Desig. MP6 Diam (Casing) _____

LORAN Co-ordinates: N 43990.61 E 26134.28

Elevation Top of Boring -19.2' M.S.L.
Total Overburden Drilled 20.5' Feet
Elevation Top of Rock _____ M.S.L.
Total Rock Drilled _____ Feet
Elevation Bottom of Boring -39.7' M.S.L.
Total Depth of Boring 20.5' Feet
Core Recovered _____ % No. Boxes _____
Core Recovered _____ Ft. _____ Diam. _____ In.
Soil Samples _____ In. Diam. _____ No.
Soil Samples _____ In. Diam. _____ No.

Hammer Wt. 140lb. Boring Started 10:00 1/6/82
Hammer Drop _____
Casing Left _____ Boring Completed 10:33 1/6/82
Subsurface Water Data _____ Page _____
Obs. Well _____
Drilled By ATLANTIC TEST BORING CO INC.
Mfg. Des. Drill BRIGGS & STRATTON SKID RIG
Inspected By: M. SHERRILL
Classification By: P.J. MALONEY, JR.
Classification By: _____

DEPTH (ft)	CORE/SAMPLE NO	SIZE	DEPTH RANGE	BLOWS PER FT / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
5				pushed		Very Soft Soil
5				12 19 5 8 29		Very Soft Soil
10				33 80 23		Compact Soil
15 20				35 25 17 22 36 28 20 38		Very Compact Soil
					BOTTOM OF PROBE AT 20.5'	

GENERAL REMARKS. 18.5' WATER

Invitation No. DACW33-81-B-0056

Figure 3

ATLANTIC TEST BORING CO., INC.
34 King Street
Dorchester, Mass. 02122

FIELD LOG OF TEST PROBE

Site BLACK LEDGE GROTON, CONNECTICUT Page 7 of 22 Pages

Probe No. 7 Desig. MP7 Diam (Casing) _____
LORAN Co-ordinates: N 26134.68 E 43490.18

Elevation Top of Boring -23.2' M.S.L.
Total Overburden Drilled 20.0' Feet
Elevation Top of Rock _____ M.S.L.
Total Rock Drilled _____ Feet
Elevation Bottom of Boring -43.2' M.S.L.
Total Depth of Boring 20.0' Feet
Core Recovered _____ % No. Boxes _____
Core Recovered _____ Ft. _____ Diam. _____ In.
Soil Samples _____ In. Diam. _____ No.
Soil Samples _____ In. Diam. _____ No.

Hammer Wt. 140lb. Boring Started 11:35 1/6/82
Hammer Drop 30"
Casing Left _____ Boring Completed 11:50 1/6/82
Subsurface Water Data _____ Page _____
Obs. Well _____
Drilled By ATLANTIC TEST BORING CO INC.
Mfg. Des. Drill BRIGGS & STRATTON SKID RIG
Inspected By: M. SHERRILL
Classification By: P.J. MALONEY, JR.
Classification By: _____

DEPTH (1" = 5)	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER FT / CORE RECOVY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
				pushed		Very loose SOIL
5				12 13 11 6 15 21 48 25/6 62 29 24 19 11 10 7 10		Medium compact to compact SOIL
10						
15						
20					BOTTOM OF PROBE AT 20.0'	

GENERAL REMARKS. 22.0' WATER
Used 140lb. hammer from 0.0' to 12.5'
Used 300lb. hammer from 12.5' to 20.0'

BLACK LEDGE

ATLANTIC TEST BORING CO., INC.
Complete Soil Investigation Service
434 King St. Boston, Mass. 02122
Phone 438-8428, 438-8429

FIELD LOG OF TEST PROBE

Site GROTON, CONNECTICUT Page 18 of 22 Pages

Probe No. 8 Desig. MP8 Diam. (Casing) _____
Loran 43989.85 26135.16
Co-ordinates: N _____ E _____

Elevation Top of Boring -27.0' M.S.L.
Total Overburden Drilled 20.0' Feet
Elevation Top of Rock _____ M.S.L.
Total Rock Drilled _____ Feet
Elevation Bottom of Boring -47.0' M.S.L.
Total Depth of Boring 20.0' Feet
Core Recovered _____ % No. Boxes _____
Core Recovered _____ Ft: _____ Diam. _____ In.
Soil Samples _____ In. Diam. _____ No.
Soil Samples _____ In. Diam. _____ No.

Hammer Wt. 140lb. Boring Started 10:08 1/7/82
Hammer Drop 30" Boring Completed 10:30 1/7/82
Casing Left _____
Subsurface Water Data _____ Page _____
Obs. Well _____
Drilled By ATLANTIC TEST BORING CO.INC.
Mfg. Des. Drill BRIGGS & STRATTON SKID RIG
Inspected By: M. SHERRILL
Classification By: P.J. MALONEY, JR.
Classification By: _____

DEPTH 1" = 5	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER FT CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
5				pushed		Very loose Soil
10, 15, 20				3, 11, 8, 18, 36, 31, 28, 43, 43, 38, 46, 50, 61		Compact to very compact Soil
					BOTTOM OF PROBE AT 20.0'	

GENERAL REMARKS: 27.0' WATER

Invitation No. DACW33-81-B-0056

Figure 3

ATLANTIC TEST BORING CO., INC.
34 King Street
Dorchester, Mass. 02122

FIELD LOG OF TEST PROBE

Site BLACK LEDGE GROTON, CONNECTICUT Page 9 of 22 Pages

Probe No. 9 Desig. MP9 Diam (Casing) _____
LORAN Co-ordinates N 43989.33 E 26135.54

Elevation Top of Boring -18.6' M.S.L.
Total Overburden Drilled 20.0' Feet
Elevation Top of Rock _____ M.S.L.
Total Rock Drilled _____ Feet
Elevation Bottom of Boring -38.6' M.S.L.
Total Depth of Boring 20.0' Feet
Core Recovered _____ % No. Boxes _____
Core Recovered _____ Ft. _____ Diam. _____ In.
Soil Samples _____ In. Diam. _____ No.
Soil Samples _____ In. Diam. _____ No.

Hammer Wt. 140lb. Boring Started 9:20 1/7/82
Hammer Drop 30" Boring Completed 9:41 1/7/82
Casing Left _____
Subsurface Water Data _____ Page _____
Obs. Well _____
Drilled By ATLANTIC TEST BORING CO INC.
Mfg. Des. Drill BRIGGS & STRATTON SKID RIG
Inspected By: M. SHERRILL
Classification By: P.J. MALONEY, JR.
Classification By: _____

DEPTH (Ft.)	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER FT / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
					PUSHED	Very soft SOIL
5				6 18 19 13 19 9 3 2 1 3 6 3 5 6 10 14 12 26 55		Medium Compact SOIL
10						
15						
20					BOTTOM OF PROBE AT 20.0'	

GENERAL REMARKS. 19.0' WATER

Invitation No. DACW33-81-B-0056

Figure 3

ATLANTIC TEST BORING CO., INC.
34 King Street
Dorchester, Mass. 02122

FIELD LOG OF TEST PROBE

Site BLACK LEDGE GROTON, CONNECTIUCUT Page 10 of 22 Pages

Probe No. 10 Desig. MP10 Diam (Casing) _____

LORAN Co-ordinates N 43990.10 E 26133.50

Elevation Top of Boring -23.8' M.S.L.
Total Overburden Drilled 20.0' Feet
Elevation Top of Rock _____ M.S.L.
Total Rock Drilled _____ Feet
Elevation Bottom of Boring -43.8' M.S.L.
Total Depth of Boring 20.0' Feet
Core Recovered _____ % No. Boxes _____
Core Recovered _____ Ft : _____ Diam. _____ in.
Soil Samples _____ in. Diam. _____ No.
Soil Samples _____ in. Diam. _____ No.

Hammer Wt. 140lb. Hammer Drop 30"
Casing Left _____
Subsurface Water Data _____ Page _____
Obs. Well _____
Drilled By ATLANTIC TEST BORING CO INC.
Mfg. Des. Drill BRIGGS & STRATTON SKID RIG
Inspected By: M. SHERRILL
Classification By: P.J. MALONEY, JR.
Classification By: _____

Boring Started 11:22 1/7/82
Boring Completed 11:50 1/7/82

DEPTH (1" = 5)	CORE/SAMPLE NO	SIZE	DEPTH RANGE	BLOWS PER FT / CORE RECV'Y	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
					PUSHED	Very loose Soil
5				2 5 3 7 3 1		Very Loose to Loose Soil
10				24 33 22 18 19 16 12 22 39 54 60		Medium compact Soil Compact to very compact Soil
15 20					BOTTOM OF PROBE AT 20.0'	

GENERAL REMARKS. 23.0' WATER

Invitation No. DACW33-81-B-0056

Figure 3

ATLANTIC TEST BORING CO., INC.
34 King Street
Dorchester, Mass. 02122

FIELD LOG OF TEST PROBE

BLACK LEDGE
Site GROTON, CONNECTICUT Page 11 of 22 Pages

Probe No. 11 Desig. MP11 Diam (Casing) _____

Co-ordinates LORAN N 43484.21 E 26134.18

Elevation Top of Boring -28.6' M.S.L.
Total Overburden Drilled 20.0' Feet
Elevation Top of Rock _____ M.S.L.
Total Rock Drilled _____ Feet
Elevation Bottom of Boring -48.6' M.S.L.
Total Depth of Boring 20.0' Feet
Core Recovered _____ % No. Boxes _____
Core Recovered _____ Ft. _____ Diam. _____ In.
Soil Samples _____ In. Diam. _____ No.
Soil Samples _____ In. Diam. _____ No.

Hammer Wt. 140lb. Boring Started 10:55 1/7/82
Hammer Drop 30"
Casing Left _____ Boring Completed 11:10 1/7/82
Subsurface Water Data _____ Page _____
Obs. Well _____
Drilled By ATLANTIC TEST BORING CO INC.
Mfg. Des. Drill BRIGGS & STRATTON SKID RIG
Inspected By: M. SHERRILL
Classification By: P.J. MALONEY, JR.
Classification By: _____

DEPTH (Ft.)	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER FT / CORE RECV'Y	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
5				Pushed		Very loose SOIL
5				3 6		Loose SOIL
10, 15, 20				16 22 22 41 61 24 16 17 27 23 36 31		Compact to Very Compact SOIL
					BOTTOM OF PROBE AT 20.0'	

GENERAL REMARKS. 28.0' WATER

From 13.0' to 20.0' Used 300lb. hammer

ATLANTIC TEST BORING CO., INC.
34 King Street
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FIELD LOG OF TEST PROBE

BLACK LEDGE
Site GROTON, CONNECTICUT Page 12 of 22 Pages

Probe No. 12 Desig. MP12 Diam (Casing) _____
LORAN
Co-ordinates: N 26140.41 E 43993.80

Elevation Top of Boring -29.8' M.S.L.
Total Overburden Drilled 12.0' Feet
Elevation Top of Rock _____ M.S.L.
Total Rock Drilled _____ Feet
Elevation Bottom of Boring -41.8' M.S.L.
Total Depth of Boring 12.0' Feet
Core Recovered _____ % No. Boxes _____
Core Recovered _____ Ft. _____ Diam. _____ In.
Soil Samples _____ In. Diam. _____ No.
Soil Samples _____ In. Diam. _____ No.

Hammer Wt. 140lb. Boring Started 8:05 1/8/82
Hammer Drop 30"
Casing Left _____ Boring Completed 8:30 1/8/82
Subsurface Water Data _____ Page _____
Obs. Well _____
Drilled By ATLANTIC TEST BORING CO. INC
Mfg. Des. Drill BRIGGS & STRATTON SKID RIG
Inspected By: M. SHERRILL
Classification By: P.J. MALONEY, JR.
Classification By: _____

DEPTH (1"=5')	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER FT / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
5				pushed		Very soft SOIL
10				31 52 50 55		Very compact SOIL
12					REFUSAL AT 12.0'	

GENERAL REMARKS. 31.0' WATER
Used 300lb. hammer at 12.0' REFUSAL

Invitation No. DACW33-81-B-0056

Figure 3

ATLANTIC TEST BORING CO., INC.
34 King Street
Dorchester, Mass. 02122

FIELD LOG OF TEST PROBE

Site: BLACK LEDGE GROTON, CONNECTICUT

Probe No. 13 Desig. MP13 Diam (Casing) _____
LORAN
Co-ordinates: N 43993.33 E 26140.80

Elevation Top of Boring -28.0' M.S.L.
Total Overburden Drilled 8.5' Feet
Elevation Top of Rock _____ M.S.L.
Total Rock Drilled _____ Feet
Elevation Bottom of Boring -36.5' M.S.L.
Total Depth of Boring 8.5' Feet
Core Recovered _____ % No. Boxes _____
Core Recovered _____ Ft _____ Diam. _____ In.
Soil Samples _____ In. Diam. _____ No.
Soil Samples _____ In. Diam. _____ No.

Hammer Wt. 140lb. Boring Started 9:00 1/8/82
Hammer Drop 30"
Casing Left _____ Boring Completed 9:15 1/8/82
Subsurface Water Data _____ Page _____
Obs. Well _____
Drilled By ATLANTIC TEST BORING CO INC.
Mfg. Des. Drill BRIGGS & STRATTON SKID RIG
Inspected By: M. SHERRILL
Classification By: P.J. MALONEY, JR.
Classification By: _____

DEPTH (ft)	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER FT / CORE RECV'Y	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
5				pushed		Very soft SOIL
5				5 2 25 28		Compact SOIL
8.5						
10					REFUSAL AT 8.5'	

GENERAL REMARKS. 29.0'
From 8.5' used 300lb. hammer, Refusal at 8.5'

Invitation No. DACW33-81-B-0056

Figure 3

ATLANTIC TEST BORING CO., INC.
34 King Street
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FIELD LOG OF TEST PROBE

Site BLACK LEDGE GROTON, CONNECTICUT Page 14 of 22 Pages

Probe No. 14 Desig. MP14 Diam (Casing) _____

LORAN Co-ordinates N 26141.14 E _____

Elevation Top of Boring -33.1' M.S.L.
Total Overburden Drilled 4.5' Feet
Elevation Top of Rock _____ M.S.L.
Total Rock Drilled _____ Feet
Elevation Bottom of Boring -37.6' M.S.L.
Total Depth of Boring 4.5' Feet
Core Recovered _____ % No. Boxes _____
Core Recovered _____ Ft. _____ Diam. _____ In.
Soil Samples _____ In. Diam. _____ No.
Soil Samples _____ In. Diam. _____ No.

Hammer Wt. 140lb. Boring Started 3:15 12/21/81
Hammer Drop 30" Boring Completed 3:30 12/21/81
Casing Left _____
Subsurface Water Data _____ Page _____
Obs. Well _____
Drilled By ATLANTIC TEST BORING CO INC.
Mfg. Des. Drill BRIGGS & STRATTON SKID RIG
Inspected By: M. SHERRILL
Classification By: P.J. MALONEY, JR.
Classification By: _____

DEPTH	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER FT / CORE RECV'Y	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
5					PUSHED	Very soft SOIL
3				36 45 60		Compact to very compact SOIL
5					REFUSAL AT 4.5'	

GENERAL REMARKS. 32.0' WATER
Weight of rod 0'-3', open rod return, gravel and fine sand

ATLANTIC TEST BORING CO., INC.
34 King Street
Dorchester, Mass. 02122

FIELD LOG OF TEST PROBE

Site: BLACK LEDGE GROTON, CONNECTICUT

Probe No. 15 Desig. MP15 Diam (Casing) _____
LORAN Co-ordinates: N 43992.88 E 26139.25

Elevation Top of Boring -21.5' M.S.L.
Total Overburden Drilled 8.5' Feet
Elevation Top of Rock _____ M.S.L.
Total Rock Drilled _____ Feet
Elevation Bottom of Boring -30.0' M.S.L.
Total Depth of Boring 8.5' Feet
Core Recovered _____ % No. Boxes _____
Core Recovered _____ Ft. _____ Diam. _____ In.
Soil Samples _____ In. Diam. _____ No.
Soil Samples _____ In. Diam. _____ No.

Hammer Wt. 140lb. Hammer Drop 30"
Casing Left _____
Subsurface Water Data _____ Page _____
Obs. Well _____
Drilled By ATLANTIC TEST BORING CO INC.
Mfg. Des. Drill BRIGGS & STRATTON SKID RIG
Inspected By: M. SHERRILL
Classification By: P.J. MALONEY, JR.
Classification By: _____

Boring Started 10:23 1/8/82
Boring Completed 10:45 1/8/82

DEPTH (Ft.)	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER FT / CORE RECV'Y	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
5				pushed		SOFT SOIL
5				11 52 40 53 31		Very compact SOIL
10					REFUSAL AT 8.5'	

GENERAL REMARKS: 22.0' WATER
From 8.5' used 300lb. hammer, Refusal at 8.5'

Figure 3

ATLANTIC TEST BORING CO., INC.
34 King Street
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FIELD LOG OF TEST PROBE

BLACK LEDGE
Site GROTON, CONNECTICUT Page 16 of 22 Pages

Probe No. 16 Desig. MP16 Diam (Casing) _____
LORAN
Co-ordinates N 43992.58 E 26139.45

Elevation Top of Boring -24.3' M.S.L.
Total Overburden Drilled 3.5' Feet
Elevation Top of Rock _____ M.S.L.
Total Rock Drilled _____ Feet
Elevation Bottom of Boring -27.8' M.S.L.
Total Depth of Boring 3.5' Feet
Core Recovered _____ % No. Boxes _____
Core Recovered _____ Ft. _____ Diam. _____ In.
Soil Samples _____ In. Diam. _____ No.
Soil Samples _____ In. Diam. _____ No.

Hammer Wt. 140lb. Boring Started 9:48 1/8/82
Hammer Drop 30"
Casing Left _____ Boring Completed 9:53 1/8/82
Subsurface Water Data _____ Page _____
Obs. Well _____
Drilled By ATLANTIC TEST BORING CO. INC.
Mfg. Des. Drill BRIGGS & STRATTON SKID RIG
Inspected By: M. SHERRILL
Classification By: P.J. MALONEY, JR.
Classification By: _____

DEPTH	CORE/SAMPLE				BLOWS PER FT / CORE RECVY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
	1" 5	NO	SIZE	DEPTH RANGE			
						PUSHED	Very soft SOIL
5					45	"0" PENETRATION REFUSAL AT 3.5'	

GENERAL REMARKS. 25.0' WATER
REFUSAL AT 3.5', Bedrock or boulder

ATLANTIC TEST BORING CO., INC.
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FIELD LOG OF TEST PROBE

Site BLACK LEDGE GROTON, CONNECTICUT Page 17 of 22 Pages

Probe No. 17 Desig. MP17 Diam (Casing) _____

LORAN Co-ordinates N 43992.29 E 26139.9

Elevation Top of Boring -29.7' M.S.L. Hammer Wt. 140lb. Boring Started 5:12 1/7/82

Total Overburden Drilled 20.0' Feet Hammer Drop 30" Boring Completed 5:31 1/7/82

Elevation Top of Rock _____ M.S.L. Casing Left _____

Total Rock Drilled _____ Feet Subsurface Water Data _____ Page _____

Elevation Bottom of Boring -49.7' M.S.L. Obs. Well _____

Total Depth of Boring 20.0' Feet Drilled By ATLANTIC TEST BORING CO INC.

Core Recovered _____ % No. Boxes _____ Mfg. Des. Drill BRIGGS & STRATTON SKID RIG

Core Recovered _____ Ft _____ Diam. _____ In. Inspected By: M. SHERRILL

Soil Samples _____ In. Diam. _____ No. Classification By: P.J. MALONEY, JR.

Soil Samples _____ In. Diam. _____ No. Classification By: _____

DEPTH 1" = 5	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER FT / CORE RECV'Y	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
5				pushed		Very soft SOIL
10				1 16 18 58 33 16 19 12 15 40 22 25 26		Medium compact to very compact SOIL
15 20					BOTTOM OF PROBE AT 20.0'	

GENERAL REMARKS. 29.0' WATER

Invitation No. DACW33-81-B-0056

Figure 3

ATLANTIC TEST BORING CO., INC.
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FIELD LOG OF TEST PROBE

BLACK LEDGE
Site GROTON, CONNECTICUT Page 18 of 22 Pages

Probe No. 18 Desig. MP18 Diam (Casing) _____
LOPAN
Co-ordinates N 43991.61 E 26140.3

Elevation Top of Boring -32.0' M.S.L.
Total Overburden Drilled 20.0' Feet
Elevation Top of Rock _____ M.S.L.
Total Rock Drilled _____ Feet
Elevation Bottom of Boring -52.0' M.S.L.
Total Depth of Boring 20.0' Feet
Core Recovered _____ % No. Boxes _____
Core Recovered _____ Ft. _____ Diam. _____ In.
Soil Samples _____ In. Diam. _____ No.
Soil Samples _____ In. Diam. _____ No.

Hammer Wt. 140lb. Boring Started 4:20 1/7/82
Hammer Drop 30"
Casing Left _____ Boring Completed 4:45 1/7/82
Subsurface Water Data _____ Page _____
Obs. Well _____
Drilled By ATLANTIC TEST BORING CO INC.
Mfg. Des. Drill BRIGGS & STRATTON SKID RIG
Inspected By: M. SHERRILL
Classification By: P.J. MALONEY, JR.
Classification By: _____

DEPTH (Ft. 5)	CORE/SAMPLE NO	SIZE	DEPTH RANGE	BLOWS PER FT / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
5, 10				pushed		Very soft SOIL
15, 20				2 5 5 12 47 75 34 21/6		Loose SOIL Very compact SOIL
					BOTTOM OF PROBE AT 20.0'	

GENERAL REMARKS 31.0' WATER
Used 300lb hammer from 18.5' to 20.0'

ATLANTIC TEST BORING CO., INC.
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FIELD LOG OF TEST PROBE

Site BLACK LEDGE GROTON, CONNECTICUT Page 19 of 22 Pages

Probe No. 19 Desig. MP19 Diam (Casing) _____
LORAN Co-ordinates: N 43991.36 E 26139.79

Elevation Top of Boring -31.0' M.S.L.
Total Overburden Drilled 21.0' Feet
Elevation Top of Rock _____ M.S.L.
Total Rock Drilled _____ Feet
Elevation Bottom of Boring -52.0' M.S.L.
Total Depth of Boring 21.0' Feet
Core Recovered _____ % No. Boxes _____
Core Recovered _____ Ft. _____ Diam. _____ In.
Soil Samples _____ In. Diam. _____ No.
Soil Samples _____ In. Diam. _____ No.

Hammer Wt. 140lb. Hammer Drop 30"
Casing Left _____
Subsurface Water Data _____ Page _____
Obs. Well _____
Drilled By ATLANTIC TEST BORING CO INC.
Mfg. Des. Drill BRIGGS & STRATTON SKID RIG
Inspected By: M. SHERRILL
Classification By: P.J. MALONEY, JR.
Classification By: _____

Boring Started 3:50 1/7/82
Boring Completed 4:05 1/7/82

DEPTH (1" = 5)	CORE/SAMPLE NO	SIZE	DEPTH RANGE	BLOWS PER FT / CORE RECV'Y	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
5				pushed		Very loose SOIL
10				15 16 12 6 2		Medium compact SOIL
	(from 12.5' to 14.5' Pushed)					Loose to very loose SOIL
15 20				6 12 53 55 41 37 19/6		Very compact SOIL
					BOTTOM OF PROBE AT 21.0'	

GENERAL REMARKS. 30.0' WATER
From 18.5' to 20.0' used 300lb. hammer

Invitation No. DACW33-81-B-0056

Figure 3

ATLANTIC TEST BORING CO., INC.
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FIELD LOG OF TEST PROBE

BLACK LEDGE
Site GROTON, CONNECTICUT Page 20 of 22 Pages

Probe No. 20 Desig. MP20 Diam (Casing) _____
LORAN
Co-ordinates: N 43990.83 E 26134.09

Elevation Top of Boring -34.3' M.S.L. Hammer Wt. 140lb. Boring Started 3:00 1/7/82
Total Overburden Drilled 11.3' Feet Hammer Drop _____
Elevation Top of Rock _____ M.S.L. Casing Left _____ Boring Completed 3:30 1/7/82
Total Rock Drilled _____ Feet Subsurface Water Data _____ Page _____
Elevation Bottom of Boring -45.6' M.S.L. Obs. Well _____
Total Depth of Boring 11.3' Feet Drilled By ATLANTIC TEST BORING CO INC.
Core Recovered _____ % No. Boxes _____ Mfg. Des. Drill BRIGGS & STRATTON SKID RIG
Core Recovered _____ Ft. _____ Diam. _____ In. Inspected By: M. SHERRILL
Soil Samples _____ In. Diam. _____ No. Classification By: P.J. MALONEY, JR.
Soil Samples _____ In. Diam. _____ No. Classification By: _____

DEPTH (Ft.)	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER FT / CORE RECV'Y	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
5				push		Very loose SOIL
5				11 23 27 24 32 52 71 29 27		Compact to very compact SOIL
10					REFUSAL AT 11.3'	

GENERAL REMARKS. 33.0' WATER
From 11.0' to 11.3' Used 300lb. hammer
Refusal at 11.3'

Invitation No. DACW33-81-B-0056

Figure 3

ATLANTIC TEST BORING CO., INC.
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FIELD LOG OF TEST PROBE

BLACK LEDGE
Site GROTON, CONNECTICUT Page 21 of 22 Pages

Probe No. 21 Desig. MP21 Diam (Casing) _____
LORAN
Co-ordinates: N 43990.31 E 26137.38

Elevation Top of Boring -20.0' M.S.L.
Total Overburden Drilled 6.5' Feet
Elevation Top of Rock _____ M.S.L.
Total Rock Drilled _____ Feet
Elevation Bottom of Boring -26.5' M.S.L.
Total Depth of Boring 6.5' Feet
Core Recovered _____ % No. Boxes _____
Core Recovered _____ Ft. _____ Diam. _____ In.
Soil Samples _____ In. Diam. _____ No.
Soil Samples _____ In. Diam. _____ No.

Hammer Wt. 140lb. Boring Started 8:00 1/7/82
Hammer Drop 30"
Casing Left _____ Boring Completed 8:20 1/7/82
Subsurface Water Data _____ Page _____
Obs. Well _____
Drilled By ATLANTIC TEST BORING CO INC.
Mfg. Des. Drill BRIGGS & STRATTON SKID RIG
Inspected By: M. SHERRILL
Classification By: P.J. MALONEY, JR.
Classification By: _____

DEPTH	CORE/SAMPLE NO	SIZE	DEPTH RANGE	BLOWS PER FT / CORE RECV'Y	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
					PUSHED	Very loose SOIL
5				33 31 13 36 47 20		Very compact SOIL
					REFUSAL AT 6.5'	

GENERAL REMARKS. 21.0' WATER

Rod bouncing under 300lb. hammer, no penetration with 20 blows.

Invitation No. DACW33-81-B-0096

Figure 3

ATLANTIC TEST BORING CO., INC.
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Dorchester, Mass. 02122

FIELD LOG OF TEST PROBE

BLACK LEDGE
Site GROTON, CONNECTICUT Page 22 of 22 Pages

Probe No. 22 Desig MP22 Diam (Casing) _____
LORAN
Co-ordinates: N 43984.92 E 26136.67

Elevation Top of Boring -23.3' M.S.L.
Total Overburden Drilled -20.0' Feet
Elevation Top of Rock _____ M.S.L.
Total Rock Drilled _____ Feet
Elevation Bottom of Boring -43.3' M.S.L.
Total Depth of Boring 20.0' Feet
Core Recovered _____ % No. Boxes _____
Core Recovered _____ Ft. _____ Diam. _____ In.
Soil Samples _____ In. Diam. _____ No.
Soil Samples _____ In. Diam. _____ No.

Hammer Wt. 140lb. Boring Started 8:35 1/7/82
Hammer Drop 30"
Casing Left _____ Boring Completed 9:00 1/7/82
Subsurface Water Data _____ Page _____
Obs. Well _____
Drilled By ATLANTIC TEST BORING CO INC.
Mfg. Des. Drill BRIGGS & STRATTON SKID RIG
Inspected By: M. SHERRILL
Classification By: P.J. MALONEY, JR.
Classification By: _____

DEPTH (Ft.)	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER FT / CORE RECVY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
5				p u s h e d		Very loose SOIL
10				5 10 23 27 32 34 53 24 15 19 30 28 22 21		Medium compact to compact SOIL
15						
20					BOTTOM OF PROBE AT 20.0'	

GENERAL REMARKS. 24.0' WATER
From 13.5' to 20.0' Used 300lb. hammer

Invitation No. DACW33-81-B-0056

Figure 3

CORPS OF ENGINEERS
NEW ENGLAND DIVISION

FIELD LOG OF TEST BORING

Boring No. A Desig. BH A Diam. (Casing) 2½"
Co-ordinates: N 43998.34 E 26139.02

Elevation Top of Boring -25.5' M.S.L.
Total Overburden Drilled 13' Feet
Elevation Top of Rock -38.5' M.S.L.
Total Rock Drilled 60" — 5' Feet
Elevation Bottom of Boring -43.5' M.S.L.
Total Depth of Boring 18' Feet
Core Recovered 67 % No. Boxes
Core Recovered 3 Ft. Diam. In.
Soil Samples In. Diam. No.
Soil Samples In. Diam. No.

Hammer Wt. 140
Hammer Drop 30"
Casing Left
Subsurface Water Data Page
Obs. Well
Drilled By P.J. MALONEY ATL. T.B.
Mfg. Des. Drill ACKER
Inspected By: M. SHERRILL
Classification By: M. SHERRILL
Classification By:

Boring Started 0950 1/20/82
Boring Completed 1600 1/20/82

DEPTH (1" = 5')	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER FT. / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
	—		0-1.5	WOR	SAMPLE SHEET IN USE.	
	S-1	6" R	1.5 / 3.5	4-1 / 5-9	140# 1008	S-1 Gravelly SAND, sprx. 25% rounded gravel particles; rounded sand grains, fine to medium; <10% non-plastic fines. ALLUVIAL. (SP-SM) LOOSE.
					1010 CASING TO 5' ~ MED DENSE. 3.5' CAV.	
5	S-2	15" R	5.5 / 7.5	10-12 / 10-14	1045	S-2: SAND, well graded, coarse to fine; <5% fine gravel, 1/4 in. max. size; <1% non-plastic fines. ALLUVIAL. (SW) MED. DENSE IN PLACE.
					1100 Start, Washing 5-5.5 INTL IN CASING.	
10	S-3	8" R	10 / 13	22-18 / 18-16	40' CASING: 43.00 3' SH. 1119	S-3 SAND, gravelly, sprx 30% gravel particles, ½" max., angular to subround; rounded sand particles; well graded coarse to fine; <5% non-plastic fines. Glacial drift, fluvially sorted. (SW)
1455	A-1	3.5 REC	13 / 18	3.5 / 6.0 / 61%	1150 - REF. CASING @ 13.0' BOUNCE W 300# COCKING. NO WATER RETURN @ 17' STOP - CHECK PUMPS - OK BUMPING ROD.	13-17' Greyish pink granite GNEISS. BANDING AT ~20° W HORIZONTAL. ROCK IS COMPETENT SAVE ALONG FOLIATION WITHIN BIOTITE BANDS. REC'D 4 PCS: 1", ½", 6", 29".
1530					TERMINATE AT 18' REQ'D PENETRATION, 1ST REFUSAL.	NOTE: BOTTOM SURFACE OF CORE RETURN (16.5) IS FRESH BREAK, & DOES NOT SHOW OXIDATION STAINS OF TOP AT 13.0'. ~1.0' OF CORE REMAINS IN HOLE. RQD = 35/36.5 = 96%
20						
25						

GENERAL REMARKS: ① 0950 WD = 25'
② Some indic. of grading layers within sample → reflects flow vel. & quantity change
③ 1145 WD 24.5' ④ 1200 BREAK FOR WINCH & SET UP TO CORE.
⑤ 1415 WD 25.0'
⑥ STOPPED CORE AT 17' THEN RESTARTED. REMOVE RODS BUMPING. PUSHED ON TO 18'

Boring No. BH-A

Figure 1

Invitation No. DACW33-81-B-0056

* LOC AWAY FROM CABLE AREA.

THAMES RIV. N. LOND. HI 0555
0 1142 2.5 RISE
HI 1735
6
5-53
2-30
2
2-56
45
-2.5
-5
-24.5
3.0
CORE BLR: 5'6"
-45.5
3.0
42.0
-5
-24.5
12.0

CORPS OF ENGINEERS
NEW ENGLAND DIVISION

FIELD LOG OF TEST BORING

Boring No. B Desig. BH-B Diam. (Casing) 2.5 in

Co-ordinates: N 43991.06 E 26134.90

Elevation Top of Boring -18.5' M.S.L.
Total Overburden Drilled 40.5' Feet
Elevation Top of Rock ____ M.S.L.
Total Rock Drilled ____ Feet
Elevation Bottom of Boring -59.0' M.S.L.
Total Depth of Boring 40.5' Feet
Core Recovered ____ % No. Boxes ____
Core Recovered ____ Ft. ____ Diam. ____ In.
Soil Samples ____ In. Diam. ____ No.
Soil Samples ____ In. Diam. ____ No.

Hammer Wt. 140/ Hammer Drop 30"
Casing Left ____
Subsurface Water Data ____ Page ____
Obs. Well ____
Drilled By ATL TEST BORING - T. HUNT
Mfg. Des. Drill ACKER
Inspected By: MIKE SHERRILL
Classification By: MIKE SHERRILL GZA
Classification By: ____

Boring Started 0840 1/22/82
Boring Completed ____

DEPTH	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER FT. / CORE REC'VY	SAMPLING AND CORING OPERATIONS	TIME	CLASSIFICATION OF MATERIALS
1" = 5'							
			0	HAND PUSH	OL WD. 19.5'	0825	S-1: Silty SAND, 75% fine sand particles; 20% non-plastic fines; <5% fine gravel; <5% shell fragments; <1% plant fibers; organic odor. Marine nearshore reworking of alluvium, (SP-OL). Very loose.
	S-1		2.5				
	S-1	10" R	2.5 4.5	3-1 2-4	0900	0852	
5					WD - 18.5'	1055	CHANGE TO: SAND, poorly graded fine to very fine, <5% non-plastic fines, loose, nearshore marine (SP)
	S-2	24" R	6.5 8.5	4-3 2-2	CAVING AT 6.5' 1120	1100	S-2: SAND, well graded, coarse to fine particles; <5% fine gravel, 1/2 in max; loose, cream, alluvial. (SW).
10							
	S-3 B/A	24" R	11.5 19.5	10-14 39-40	1150 1155	1150 1155	S-3B: SAND, dense, mod to fine sand particle; <5% non-plastic fines; alluvial, (SP): Change to
					17.5 WD	1300	S-3A: SAND, well-graded, coarse to fine particles; approx 5% fine gravel rounded, <5% non-plastic fines. Alluvial, lower sea-level. (SW)
15							
	S-4	11" R	17 19	16-40 41-30	1303 1307		S-4: Silty SAND, approx. 20% non-plastic fines; sand size particles appear to decrease in size from fine to very fine this sample; very dense; lacustrine or still water deposition (SP-SM)
20					1330 CAV @ 22'		
	S-5	18" R	22.5 24.5	7-10 10-15	1346 WD. 17.2' 1348	1348	S-5: SILT, sandy, approximately 20% very fine sand particles, slight plasticity; no discernible stratification or gradation; still water deposition. (ML)
25							

GENERAL REMARKS: ① RIG DISMANTLED — EFFECTING REPAIRS. 1030 → NEW RIG BEING POSITIONED. DRIVING CASING 1055
③ Hit ½" blowing inside casing, need casing moving ~3", pulled back to 6.5'
④ S3A to 12.5'-13.5', 3B: 11.5'-12.5' → NOTICED GRAD. CHANGES AFTER TAKING S3B OVER TOTAL SPOON.

Boring No. BH-B

Figure 1

Invitation No. DACW33-81-B-0056

Site BLACK LEDGE / LEG AB GROTON — NEW LONDON | Boring No. BH-B | Page 2 of 2

DEPTH	1" = 5'	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER FT / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
						WD. 17' 1408	S6A, upper 10": STRATIFIED Sandy SILT, 30 to 35% very fine sand particles; med-dense/stiff and slightly plastic. Still water; alluvial to lacustrine. (ML)
		S-6	17" R	28 30	6-9 7-12	1412 EASILY DRIVEN NO ∅ thru Sample. 1413	S6B lower 6": Silty CLAY, med. stiff, moderate plasticity; no sand noted. No organic odor. Lacustrine or alluvial deposition at base gradient (CL)
30						1438 1435 17' W.D.	
		S-7	18" R	33 35	3-6 7-10	1439	S-7 Silty CLAY, med stiff, med plasticity; no organics; stratified brown and gray layers; lacustrine or alluvial fines deposited at base gradient (CL).
35						1458 17.2' WD	
		S-8	24" R	38 40.5	5-10 15-16 17	1501	S-8 Stratified Sample: Sandy SILT, approx 40% very fine sand particles; slightly plastic, occurring in gray layers of 1/4" to 1/8" thickness. Some indications of very thin lamina of very fine sands. (ML). Alternates with layers of Silty CLAY, red-brown, greasy; layers about 1/20" thickness. (CL) Whole sample exhibits low to moderate plasticity. Indicates varved clay deposition under still-water conditions, lake impounded by moraine deposits.
40						TERM @ 40.5' 1600 - BUMPING OASING OUT. 1615 - LEAVE SITE.	

Boring No. BH-B

Figure 2

Invitation No. DACW33-81-B-0056

CORPS OF ENGINEERS
NEW ENGLAND DIVISION

FIELD LOG OF TEST BORING

Boring No. C Desig. BHC Diam. (Casing) 2½ IN.
Co-ordinates: N 43989.61 E 26133.60

Elevation Top of Boring -27' M.S.L.
Total Overburden Drilled 40.5' Feet
Elevation Top of Rock ——— M.S.L.
Total Rock Drilled ——— Feet
Elevation Bottom of Boring -67.5' M.S.L.
Total Depth of Boring 40.5' Feet
Core Recovered ——— % No. Boxes ———
Core Recovered ——— Ft: ——— Diam. ——— In.
Soil Samples ✓ In. Diam. ——— No.
Soil Samples ✓ In. Diam. ——— No.

Hammer Wt. 140# Boring Started 1115 1/19/82
Hammer Drop 30 in Boring Completed 1600 1/19/82
Casing Left ———
Subsurface Water Data ——— Page ———
Obs. Well ———
Drilled By P.J. MALONEY - ATLANTIC TB
Mfg. Des. Drill ACKER
Inspected By: M. SHERRILL
Classification By: M. SHERRILL - GZA
Classification By: ———

DEPTH	1"=5'	CORE/SAMPLE NO.	SIZE R	DEPTH RANGE	BLOWS PER FT. CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
				0 / 2.5	WOR		VIS. EST. % BY WEIGHT OF SIZES.
		①	12" REC	2.5 / 5.5	2 / 1 / 1 / 3	① S1130 [illegible]	S-1 SAND, very loose, med to fine sand grains, <10% fine gravel, <10% non-plastic silt; shell fragments and organic odor present. Nearshore marine sand. (SP)
5		②				CASING IN EASILY - SOFT	MED gravels & coarse to fine sands in wash return.
						wash 5' to CASING.	
10 (42' CASING)		②	20" REC	11-13	5 / 61 / 54	② 1145 - 42' CASING 43' ROD 1' x HEAD. 11-13 V. DENSE 1215	S2-A 11-12.2': SAND gravelly, 20% fine gravel, ½" max. sands are coarse to fine rounded; dense and hard alluvials (SW)
							S2-B 12.2'-13': Change to SAND, tan very fine particles about 5% non-plastic fines. Layered ~ ¼" to 1" alluvial. (SP)
15 (38 15 ≥46 CAS.)		③	18" REC	15.5 / 1 / 17.5	9/13 / 15/18	③ 46' CASING 1330 S @ 1340 - 1350	Silty SAND, grey, 30% non-plastic silt. Occurs as alternate layers of ~⅛" thickness with the tan very fine sands. Alluvial to lacustrine. (SP-SM)
						1410 WASHING - NO BUMP - WASHED STEADY THRU 5' SAME MATERIAL	
20		④	16"	20.5 / 1 / 22.5	8-8 / 9-11	④ 1420	S-3: Silty SAND, grey, non-plastic, dense. Very fine sand particles. Still water deposit (SP-SM)
25							S-4 20.5 to 21.2': SILTY SAND, med. dense, non-plastic, 30% <200 sieve. Lacustrine (SP-SM). Change to silty SAND, layers @ ¼ to ⅛", grey, slight plas. Very fine sand, (SP-SM)

GENERAL REMARKS: ① 0940 26' W.D.
(A) OVERDRIVEN TO GET SAMPLE - (B) Upper 12" reflective of WASH - SAND & GRAVEL - fine lamina ≤ 1/40 of silt.
(C) 1300 - 26' W.D.
(D) STRAT. DEP'S DIFF TO HANDLE TO USCS

Boring No. C (LINE AC)

Figure 1

Invitation No. DACW33-81-B-0056

→ Alternates with layers of silty CLAY, red-brown, occurring as 1/20" lamina. Greasy. (CL-ML) Whole sample appears to be

SPOON LENG. 3.2'
38' ROD TOP
4.5' [illegible]
26 / 29.5 / 35.5
(2.5)
26 / 6.5 / 32.5
(A) 5 10 (B) 15 (C) 20 (D) 25
21.2' 22.0'

LOG: ① [illegible] at PT C & PI Bell
② Test N of line NLH @ RX & NOTEL
61.5 / 31 / 20
31 / 20 / 51 / +2 / 63
5' WL
26' 0940'
BOTTOM
HIGH @ 0505
LOW @ 1132
SPAN - 6" 27"
M - 0505 + 314
MID-TUE 0819 HRS
TIDE 2.7

Site BLACK LEDGE | ~~Probe~~ No. BORING BH C | Page 2 of 2

DEPTH	1" = 5'	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER FT / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
25		S5	20" R.	25.5 / 27.5	6-8 / 11-16	(5) 1450 49.5' CASING REF PLATF. HOLE STAYS OPEN.	(5) Silty SAND, grey, very fine sand particles, ~40% silt layers of 1/4 to 1/8 INCH (SP-SM). Start with Silty CLAY, red-brown, greasy, 1/20" lamina (CL) Varved lacustrine deposit.
30		S-6	18" R.	31 / 33	26/29 / 23/36	(6) 1513	(6) Silty SAND, grey very fine particles, stratified with red silty CLAY lamina (CL) - Varved lacustrine, (SP-SM & CL) C GRAV + T SAND IN NOSE
		S-7			30 / 35 / 19	300# NO PEN. @ 33.2' 300# HAM.	
35					31 / 20 / 22 / 20 / 19	33.2 / 1600 40.5	OPEN END A-ROD: (7) Sandy GRAVEL, very dense, 50% angular gravel, 1" max, 40% coarse - med sands, <10% fines silt/clay (GP-SP)
40						1605	TERM. OF BORING 40.5'. REQ'D. DEPTH.

WHOLE sample med dense slight plasticity

30

(A) Laminae are discontinuous + non-horizontal

slight mod plas

PROBABLE MORAINE TILL.

57 / 26

70 / 35.5 / 32

76.10 / 34.5 / 2.5

57 / 31.5 / 35.5

70 / 31

Figure 4

1505 - WD 27'

BORING ~~Probe~~ No. C

Invitation No. DACW33-81-B-0056

(A) Change @ 31.3' ~ 4 blows then 52 for 1st 6". SAMPLE DISRUPTED LAYERS NOT HORIZ.

LOC
REF. PTA
/21/82
43994.30
26141.16

0643
1307

CASING & RIG IN LINE WITH N"6" & N"4".

RODS 45
S.U. 3.75
WL 5
DEP 27
35.75
REF 9.25~9.5

CORPS OF ENGINEERS
NEW ENGLAND DIVISION

FIELD LOG OF TEST BORING

Boring No. D Desig. BHD Diam. (Casing) 2.5"
Co-ordinates: N 43990.46 E 26138.06

Elevation Top of Boring -27' M.S.L.
Total Overburden Drilled 9.5' Feet
Elevation Top of Rock -36.5' M.S.L.
Total Rock Drilled 0.5' Feet
Elevation Bottom of Boring -37' M.S.L.
Total Depth of Boring 10.0' Feet
Core Recovered 33 % No. Boxes
Core Recovered 0.2 Ft: Diam. In.
Soil Samples ✓ In. Diam. No.
Soil Samples ✓ In. Diam. No.

Hammer Wt. 140
Hammer Drop 30
Casing Left
Subsurface Water Data Page
Obs. Well
Drilled By P.J. MALONEY ATB
Mfg. Des. Drill ACKER
Inspected By: M. SHERRILL
Classification By: M. SHERRILL GZA
Classification By:

Boring Started 0745 1/21/82
Boring Completed

DEPTH	1" = 5	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER FT. / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
				0-1	WOR		
		S-1	8" R	1' 3	19-5 / 2-6	140 # 0820	S-1 Gravel, sandy, loose 1" max, angular gravel, 20% fine sand, 15% non-plastic fines, <5% shells. Marine working of alluvial (GP-SM) FINE SAND IN NOSE - SP. → LOOSE MAR. OVER ALLUVIUM.
5						VERY HARD TO CASING WASH @ 0800 Alluv. + Gravel Stuck in wash.	
		S-2	13" R	6 8	134 / 100 36 / 34/15	300 # @ 6.5-8.	S-2 Gravelly SAND, very dense, 35% med to fine angular gravel, 1" max; 55% coarse to fine sands, <10% slightly plastic fines. Ice deposit (SW-GP/SM)
						0937 1015 - 9.5' REF CASING	
10	1136	CD-1	2" REC.			27' W.D. BOUNCING - SOLID CLINK HEARD. CORE: CASING NOT STAGE 1136 - 1200/- ~6" cored BARREL & RODS BINDING. - 2" RECOVERY. BARGE UNABLE TO MAINTAIN POSITION. SPUDS SLIPPING ON TILL/ROCK. NE WIND.	CORE - CD-1 Grey/Pink MED GRAINED BIOTITE GRANITE FRESH SURFACE AT BASE OF RECOVERED CORE.
15							
20							
25							

GENERAL REMARKS: (1) 0800 28' W.D.
(2) S-2 9" to 140, 15" to 300: 124/6 - 100/3 - 36/3" - 34/6" - 15/6"
(3) 1020 27'
(4) Will swing barge on forward spud & probe for refusal.
(5) 1300 26' W.D.

Boring No. BHD

Figure 1

Invitation No. DACW33-81-B-0056

Site | Boring No. DA/DB | Page 2 of 2

26138.17
43990.45
1316
PIVOT
BH DA
WD 26'
35
-26
2' AVG

BH D-B
26138.05
43990.43
W.D. 25'
5
2.5
2.5
30

DEPTH	1" = 5'	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER FT / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
0				0-2	WOR		0-2 SM Silty sands, shell ①
					7-11	→ 5'	2-5 LOOSE SANDY SILT — SILTY SAND SM
					6		
					7		
5					29		5-7.75 V. DENSE Granular — prob Till.
					37/34	— Change in mat'l	
					66-80/3"	300# → TERM. @ 7.75' —	No pen. at 7.75' is 300# HAMMER.
						0 PEN. LAST 30 BLOWS	
10							BEDROCK OR V. DENSE Till (BOULDERS)
0				0-2.5	WOR		LOOSE silty SANDS ②
					19		
					9	← LOOSENING @ 4'	MED DENSE GRAVELLY SANDS
5					33	← TIGHTENING @ 5.	
					3"/19	9"/120# 300#	VERY DENSE — Till
					51		
					104		
					82		
10					48		
					34	→ 10.6 34/1" → 40/0 —	TERM @ 10.6'. — @ 1430
15							* REFUSAL — BEDROCK OR V. DENSE Till (BOULDER)

① Swinging barge - pivot on North spud BH DA
13° on TOG - Moved rig to West

② Pivot on barge, S spud - 40° E
then pivot on N spud - 15° E } walked barge east.

Boring No. BH DA & DB

Figure 2

Invitation No. DACW33-81-B-0056

20 036A
HI 1001
20 1622

PTA:
43994.50
26141.12
1015

① GET ON LINE LT & PTA THEN PULL UP PAST LINE TO BUOYS PTC & RY.

② SPUD 1
141.13
992.86 } (A)
1055 HRS
6.2' REF.

③ 1240
992.80
141.06 } B
5.2' REF.

1400 SWELL & WIND TOO HIGH – RETURN IN A.M.

CORPS OF ENGINEERS
NEW ENGLAND DIVISION

FIELD LOG OF TEST BORING

Boring No. E Desig. BH E Diam. (Casing) 2.5"
Co-ordinates: N 43992.86 E 26141.13

Elevation Top of Boring -30' M.S.L.
Total Overburden Drilled 6.2' Feet
Elevation Top of Rock -36.2' M.S.L.
Total Rock Drilled — Feet
Elevation Bottom of Boring -36.2' M.S.L.
Total Depth of Boring BHE-A 6.2' E-B 5.2' Feet
Core Recovered — % No. Boxes
Core Recovered — Ft. — Diam. — In.
Soil Samples ✓ In. Diam. — No.
Soil Samples ✓ In. Diam. — No.

Hammer Wt. 140 # Boring Started 1100 1/26/82
Hammer Drop 30" Boring Completed 1430 1/26/82
Casing Left
Subsurface Water Data — Page
Obs. Well
Drilled By ATL. TEST BORING
Mfg. Des. Drill ACKER
Inspected By: R. BOKOSKI BRIGGS
Classification By: M. SHERRILL GEA
Classification By:

1045 Pulling up on

DEPTH 1" = 5'	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER FT. / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
	S-1 (A)		0	0 / 6	Casing 2' above 43' ROW	S-1 Silty SAND, grey, loose; 70% very fine sand particles, slightly plastic, <5% shell fragments. Alluvial sands reworked by nearshore processes. (SP-SM).
		6" R	6	PUSH		
5	B, A				6.2' REFUSAL CASING 140# BOUNCED – 300# Ham	
					1245 WD. 30'.	
10					Casing @ refusal @ 5.2' (Drive shoe on casing). Bouncing refusal with 300# hammer.	
15						
20						

GENERAL REMARKS: ① 1055 31'
② HAND PUSH 2 FEET
③ 1145 – 30.5' WD (IN CO) WASHING OUT CASING.
④ 1240 – pull casing – REDLIVE → NON-VERT. CASING BOUNCE. AT 5.2' UNDER 300# HAMMER.
⑤ 1330 – RIG collapse – picking up RIG – NOONE HURT. – PICK UP SECURING LEGS –
⑥ 1430 – PULLING OFF – RESUME IN A.M.

Boring No. BH E

Figure 1

Invitation No. DACW33-81-B-0056

APPENDIX B

TEST BORING LOGS

ATLANTIC TEST BORING CO., INC.
Complete Soil Investigation Service
34 King St., Boston, Mass. 02122
Phone [illegible]

FIELD LOG OF TEST BORING

Site: BLACK LEDGE GROTON, CONNECTICUT — Page 1 of 7 Pages

Boring No. A — Desig. BHA — Diam. (Casing) 2½"

LORAN Co-ordinates. N 43993.34 E 26139.02

Elevation Top of Boring -25.5' M.S.L.
Total Overburden Drilled 13.0' Feet
Elevation Top of Rock -38.5' M.S.L.
Total Rock Drilled 60" - 5.0' Feet
Elevation Bottom of Boring -43.5' M.S.L.
Total Depth of Boring 18.0' Feet
Core Recovered 61 % No. Boxes
Core Recovered 3 Ft: Diam. In.
Soil Samples In. Diam. No.
Soil Samples In. Diam. No.

Hammer Wt. 140 LB. Boring Started 1/20/82 9:50
Hammer Drop 30" Boring Completed 1/20/82 6:00
Casing Left
Subsurface Water Data Page
Obs. Well
Drilled By ATLANTIC TEST BORING CO. INC
Mfg. Des. Drill BRIGGS & STRATTON SKID RIG
Inspected By: M. SHERRILL
Classification By: P.J. MALONEY
Classification By:

DEPTH 1" = 5	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER FT. CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
					PUSHED	LOOSE GREY FINE SAND SOME FINE OR GRAVEL AND SILT
1.5	1		1.5' TO 3.5'	6"	SPT METHOD: ASTMD1586 10:08 4-1-5-9 BLOWS PER 6" TYPICAL	LOOSE, GREY FINE SAND SOME FINE TO COARSE GRAVEL AND SILT (WET)
5	2		5.5' TO 7.5'	15"	10:45 10-12-10-14	COMPACT, BROWN FINE TO COARSE SAND, FINE TO COARSE GRAVEL TRACE OF SILT (WET)
10	3		10' TO 12'	8"	11:00 22-18-18-16	COMPACT, BROWN FINE TO MED SAND SOME COARSE GRAVEL SMALL BOULDERS TR OF SILT, (WET)
13					11:50	GREYISH-PINK GRANITIC GNEISS
15					CORED BEDROCK	
18						
20					BOTTOM OF EXPLORATION AT 18.0'	

GENERAL REMARKS: 25.0' WATER

Boring No.

Figure 1

Invitation No. DACW33-81-B-0056

ATLANTIC TEST BORING CO., INC.
Complete Soil Investigation Service
34 King St., Boston, Mass. 02122
Phone 436-[illegible], 436-[illegible]

FIELD LOG OF TEST BORING

BLACK LEDGE
Site GROTON, CONNECTICUT — Page 2 of 7 Pages

Boring No. B Desig. BH-B Diam. (Casing) 2½"
LORAN Co-ordinates: N 43991.06 E 26134.90

Elevation Top of Boring -18.5' M.S.L.
Total Overburden Drilled 40.5' Feet
Elevation Top of Rock ____ M.S.L.
Total Rock Drilled ____ Feet
Elevation Bottom of Boring -59.0' M.S.L.
Total Depth of Boring 40.5' Feet
Core Recovered ____ % No. Boxes ____
Core Recovered ____ Ft: ____ Diam. ____ In.
Soil Samples ____ In. Diam. ____ No.
Soil Samples ____ In. Diam. ____ No.

Hammer Wt. 140LB. Boring Started 1/22/82 8:40
Hammer Drop 30"
Boring Completed ____
Casing Left ____
Subsurface Water Data ____ Page ____
Obs. Well ____
Drilled By ATLANTIC TEST BORING CO. INC
Mfg. Des. Drill BRIGGS & STRATTON SKID RIG
Inspected By: M. SHERRILL
Classification By: P.J. MALONEY
Classification By: ____

DEPTH 1" = 5	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER FT. / CORE RECV'Y	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
2.5					*8:25 PUSHED	VERY LOOSE GREY FINE SILTY SAND FINE GRAVEL SHELLS, FIBERS ORGANIC ODOR (WET)
5	1		2.5' TO 4.5'	10"	SPT METHOD :ASTMD1586 9:00 3-1-2-4	VERY LOOSE, GREY FINE SILTY SAND FINE GRAVEL SHELLS, FIBERS ORGANIC ODOR (WET)
6.5 10	2		6.5' TO 8.5'	24"	11:20 4-3-2-2	LOOSE, GREY SAND COARSE TO FINE GRAVEL TRACE OF SILT (WET)
11.5 15	3		11.5' TO 13.5'	24"	11:55 16-19-39-60	COMPACT, BROWN MEDIUM TO FINE SAND TRACE OF SILT (WET)
17 20	4		17' TO 19'	11"	3:03 16-40-41-30	VERY COMPACT GREY SILTY FINE SAND (WET)
22.5 25	5		22.5' TO 24.5'	13"	3:46 7-10-10-15	MEDIUM COMPACT GREY SILT

GENERAL REMARKS:
RIG BROKE DOWN, AND WAS REPLACED WITH NEW ONE

CONTINUED ON NEXT PAGE

Boring No. BH-B

Figure 1

Invitation No. DACW33-81-B-0056

Site GROTON, CONNECITUCT (BLACK LEDGE)

Boring No. BH-B

DEPTH	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER FT. / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
5						SANDY, (VERY FINE SAND PARTICLES) (WET)
28	6		28' TO 30'	17"	4:12 6-9-7-12 16	MEDIUM COMPACT GREY STRATIFIED SANDY SILT SILTY CLAY (WET)
	7		33' TO 35'	18"	4:39 3-6-7-10 13	
	8		38' TO 40.5'	24"	4:58 5-10-15-16 25	
40.5					BOTTOM OF EXPLORATION AT 40.5'	

Boring No. BH-B

Figure 2

Invitation No. DACW33-81-B-0056

BLACK LEDGE

ATLANTIC TEST BORING CO., INC.
Complete Soil Investigation Service
34 King St. Boston, Mass. 02122
Phone 436-8428, 436-8429

FIELD LOG OF TEST BORING

Site GROTON, CONNECTICUT Page 3 of 7 Pages

Boring No. C Desig. BHC Diam. (Casing) 2½"

LORAN Co-ordinates: N 43989.61 E 26133.60

Elevation Top of Boring -27.0' M.S.L.
Total Overburden Drilled 40.5' Feet
Elevation Top of Rock ____ M.S.L.
Total Rock Drilled ____ Feet
Elevation Bottom of Boring -67.5' M.S.L.
Total Depth of Boring 40.5' Feet
Core Recovered ____ % No. Boxes ____
Core Recovered ____ Ft ____ Diam. ____ In.
Soil Samples ____ In. Diam. ____ No.
Soil Samples ____ In. Diam. ____ No.

Hammer Wt. 140LB. Boring Started 1/19/82 11:15
Hammer Drop 30" Boring Completed 1/19/82 6:00
Casing Left ____
Subsurface Water Data ____ Page ____
Obs. Well ____
Drilled By ATLANTIC TEST BORING CO INC
Mfg. Des. Drill BRIGGS & STRATTON SKID RIG
Inspected By: M. SHERRILL
Classification By: P.J. MALONEY
Classification By: ____

DEPTH 1" = 5	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER FT. CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
					PUSHED	VERY LOOSE GREY MEDIUM TO FINE SAND TR OF FINE GRAVEL SILT, SHELLS WITH ORGANIC ODOR (WET)
2.5	1		2.5' TO 5.5'	12"	11:30 2-1-1-3	VERY LOOSE GREY MEDIUM TO FINE SAND TR OF FINE GRAVEL SILT, SHELLS WITH ORGANIC ODOR (WET)
5						
5.5'						MED GRAVEL & CR TO FINE SANDS IN WASH RETURN CASING IN EASILY SOFT WASH 5.0' OF CASING (NO SAMPLE) BETWEEN 7.5' TO 11.0' VERY COMP AT 11.0' AT 11.0' CHANGE TO VERY FINE SAND
10						
11	2		11' TO 13'	20"	11:45 5-51-54	VERY COMPACT GREY FINE SILTY SAND (DAMP)
15						
17	3		15.5' TO 17.5'	18"	3:40 9-13-15-18	MEDIUM COMPACT GREY FINE SILTY SAND (DAMP)
20	4		20.5' TO 22.5'	16"	4:20 8-8-9-11	(FROM 17.0' TO 25.0')
25						

GENERAL REMARKS: 26.0' WATER

FROM 33.2' TO 40.5' - NO PENETRATION WITH 140LB. HAMMER AT 33.2' CHANGED TO 300LB. HAMMER AND OPEN END A-ROD

Boring No. ____

Figure 1

Invitation No. DACW33-81-B-0056

Site BLACK LEDGE
GROTON, CONNECTICUT

Boring No. BHC

DEPTH (Ft. 5)	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER FT. / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
	5		25.0' TO 27.5'	20"	4:50 6-8-11-16	MEDIUM COMPACT GREY FINE SILTY SAND LAYERS OF CLAY (MOIST)
31'	6		31' TO 33.2'	18"	5:13 56-29-23-35	VERY COMP. GREY SILTY SAND WITH LAYERS OF RED SILTY CLAY BIG PIECE OF GRAVEL IN S.S. TIP-DAMP
33.2'	7		33.2' TO 40.5'		BLOW COUNT PER FOOT FROM 33.2' TO 40.5' 30-35-19-31-20-22-20-19 (PLEASE SEE GENERAL REMARKS)	VERY COMPACT FINE TO COARSE BROWN AND GREY SAND AND GRAVEL TRACE OF SILT AND CLAY (MOIST)
40.5'					BOTTOM OF EXPLORATION AT 40.5'	

Boring No. _____

Figure 2

Invitation No. DACW33-81-B-0056

ATLANTIC TEST BORING CO., INC.
Complete Soil Investigation Service
34 King St., Boston, Mass. 02122
Phone 436-8428, 436-8429

FIELD LOG OF TEST BORING

Site BLACK LEDGE GROTON, CONNECTICUT Page 4 of 7 Pages

Boring No. D Desig. BHD Diam. (Casing) 2½"

LORAN Co-ordinates: N 43990.46 E 26138.06

Elevation Top of Boring -27.0' M.S.L.
Total Overburden Drilled 9.5' Feet
Elevation Top of Rock -36.5' M.S.L.
Total Rock Drilled 0.5' Feet
Elevation Bottom of Boring -37.0' M.S.L.
Total Depth of Boring 10.0' Feet
Core Recovered 33 % No. Boxes
Core Recovered 0.2 Ft : Diam. In.
Soil Samples In. Diam. No.
Soil Samples In. Diam. No.

Hammer Wt. 140 LB. Boring Started 1/21/82 7:45
Hammer Drop 30" Boring Completed 1/21/82
Casing Left
Subsurface Water Data Page
Obs. Well
Drilled By ATLANTIC TEST BORING CO INC.
Mfg. Des. Drill BRIGGS & STRATTON SKID RIG
Inspected By: M. SHERRILL
Classification By: P. J. MALONEY
Classification By:

DEPTH 1"= 5	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER FT. CORE RECVY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
1.0	1		1.0 TO 3.0	8"	PUSHED 8:20 19-5-2-6	SAME MATERIAL AS BELOW LOOSE DK GREY FINE SILTY SAND CR GRAVEL SHELLS, (WET)
3.0	2		6.0 TO 8.0	13"	9:37 134-100-34-75	VERY COMPACT BROWN FINE TO CR SAND AND GRAVEL TRACE OF SILT (DAMP)
9.5					*CORED	GRANITE, GREY AND PINK
					*2" RECOVERY FROM A 6" RUN TIME: 11:36 TO 12:00 BOTTOM OF EXPLORATION AT 10.0' NOTE NO. 1, SWINGING BARGE, PIVOT ON NORTH SPUD FOR BH-DA 13.DEG. ON TUG, MOVED RIG TO WEST PIVOT ON BARGE SO. SPUD-40 DEGREES EAST THEN PIVOTED ON NO. SPUD-15 DEGREES EAST	

GENERAL REMARKS 28.0' WATE @0800
BARGE UNABLE TO MAINTAIN POSITION SPUDS SLIPPING ON BEDROCK OR BOULDER TILL
(BAD N.E. WINDS)

Boring No.

Figure 1

Invitation No. DACW33-81-B-0056

ATLANTIC TEST BORING CO. INC.
Complete Soil Investigation Service
34 King St. Boston, Mass. 02122

FIELD LOG OF TEST BORING

Site BLACK LEDGE GROTON, CONNECTICUT

Boring No. E Desig. BHE Diam. (Casing) 2½"

LORAN Co-ordinates: N 43992.86 E 26141.13

Elevation Top of Boring -30.0' M.S.L.
Total Overburden Drilled 6.2' Feet
Elevation Top of Rock -36.2' M.S.L.
Total Rock Drilled _____ Feet
Elevation Bottom of Boring -36.2' M.S.L.
Total Depth of Boring 6.2' Feet
Core Recovered _____ % No. Boxes _____
Core Recovered _____ Ft. _____ Diam. _____ In.
Soil Samples _____ in. Diam. _____ No.
Soil Samples _____ in. Diam. _____ No.

Hammer Wt. 140 LB. Hammer Drop 30"
Casing Left _____
Subsurface Water Data _____ Page _____
Obs. Well _____
Drilled By ATLANTIC TEST BORING CO INC.
Mfg. Des. Drill BRIGGS & STRATTON SKID RIG
Inspected By: M. SHERRILL
Classification By: P. J. MALONEY
Classification By: _____

Boring Started 1/26/82 11:00
Boring Completed 1/26/82 4:30

DEPTH 1" = 5	CORE/SAMPLE NO	SIZE	DEPTH RANGE	BLOWS PER FT. / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
	1		0.0' TO 6.0'	8"	PUSHED TIME: 12:45	VERY LOOSE GREY SILTY SAND LITTLE PLASTIC, SHELLS (WET)
5 6.0 6.2					BEDROCK	
10 15 20					REFUSAL AT 6.2' BEDROCK BOUNCING REFUSAL WITH A 300LB. HAMMER	

GENERAL REMARKS: 31.0' WATER @ 10:55

JOB FINISHED BY ORDER OF THE U.S. ARMY CORPS OF ENGINEERS

Boring No. _____

Figure 1

Invitation No. DACW33-81-B-0056

APPENDIX C

TIDE CURVES

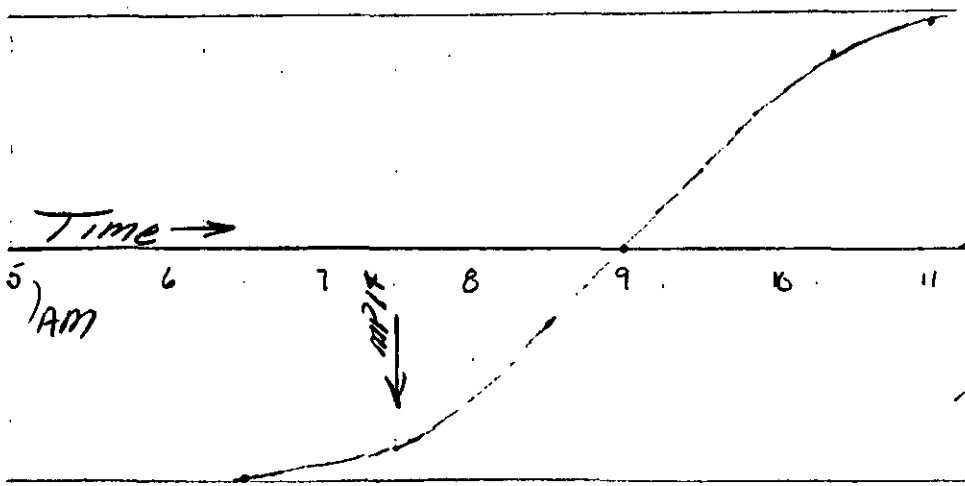
NATIONAL 42-381 50 SHEETS 5 SQUARE
42-382 100 SHEETS 5 SQUARE
42-389 200 SHEETS 5 SQUARE

Goldberg-Zoino & Associates, Inc.
Geotechnical-Geohydrological Consultants
Newton Upper Falls, MA

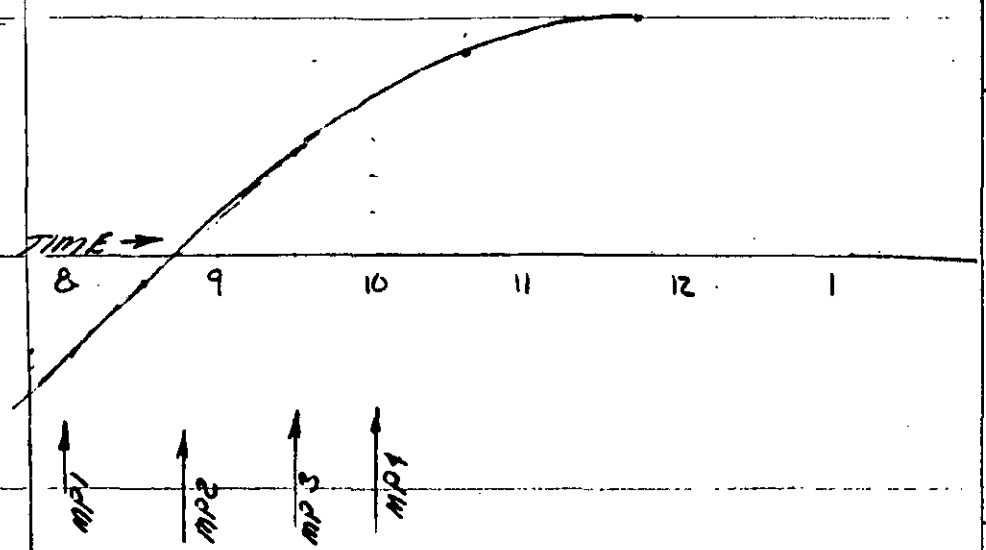
Project BUCK LEDGE
File No.

Sheet ____ of ____
Date
By M. SHERRIL

DEC 21, 1981



DEC 30/81



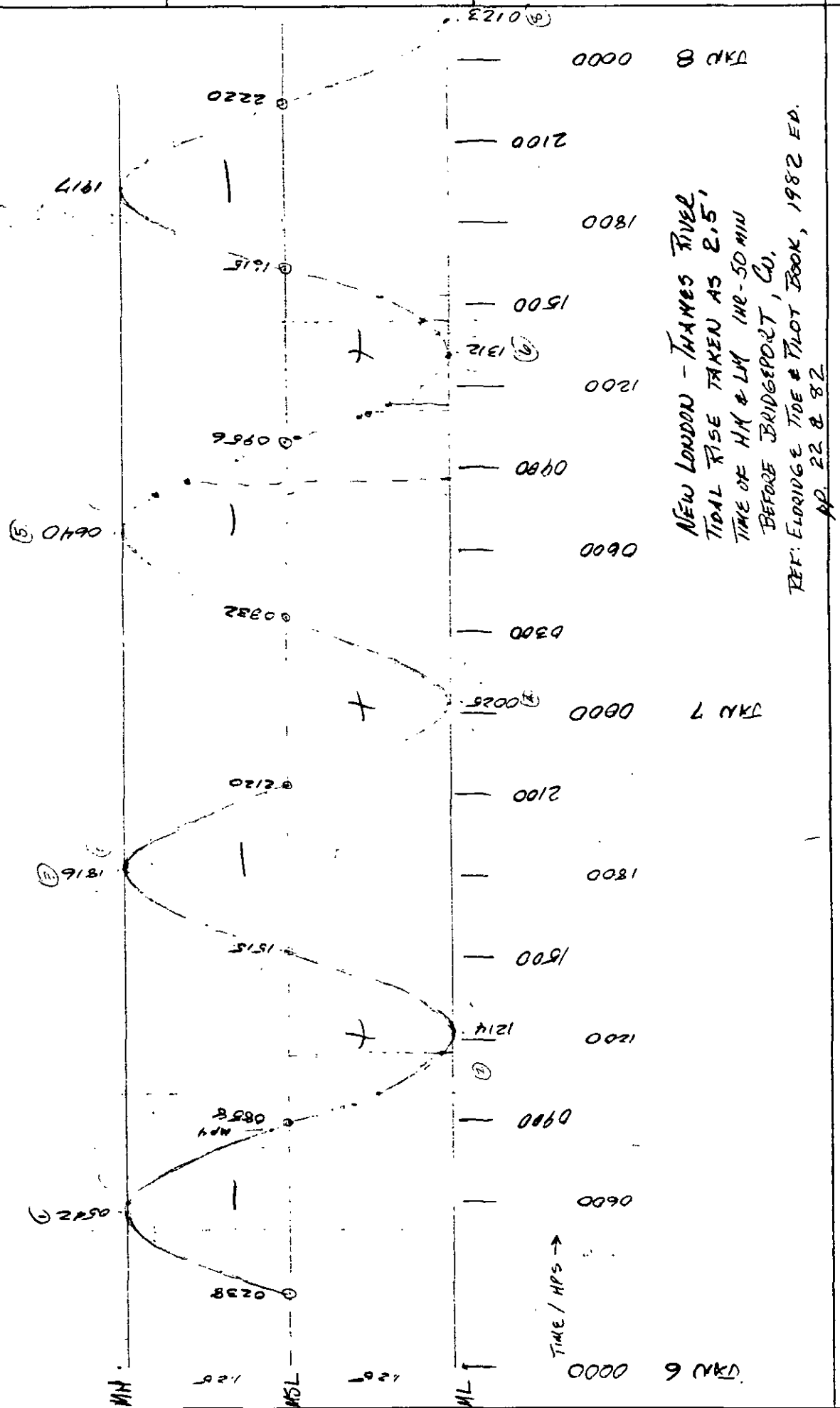
TOTAL TIDAL RISE ≅ 2.5 FT
TIMES 1 hr 50 min BEFORE
BRIDGE PORT CONN.

REF: ELDRIDGE TIDE & PILOT
1981 Ed
P 20 & 85

Goldberg-Zoino & Associates, Inc.
Geotechnical-Geohydrological Consultants
Newton Upper Falls, MA

Project BLACK LEDGE
File No.

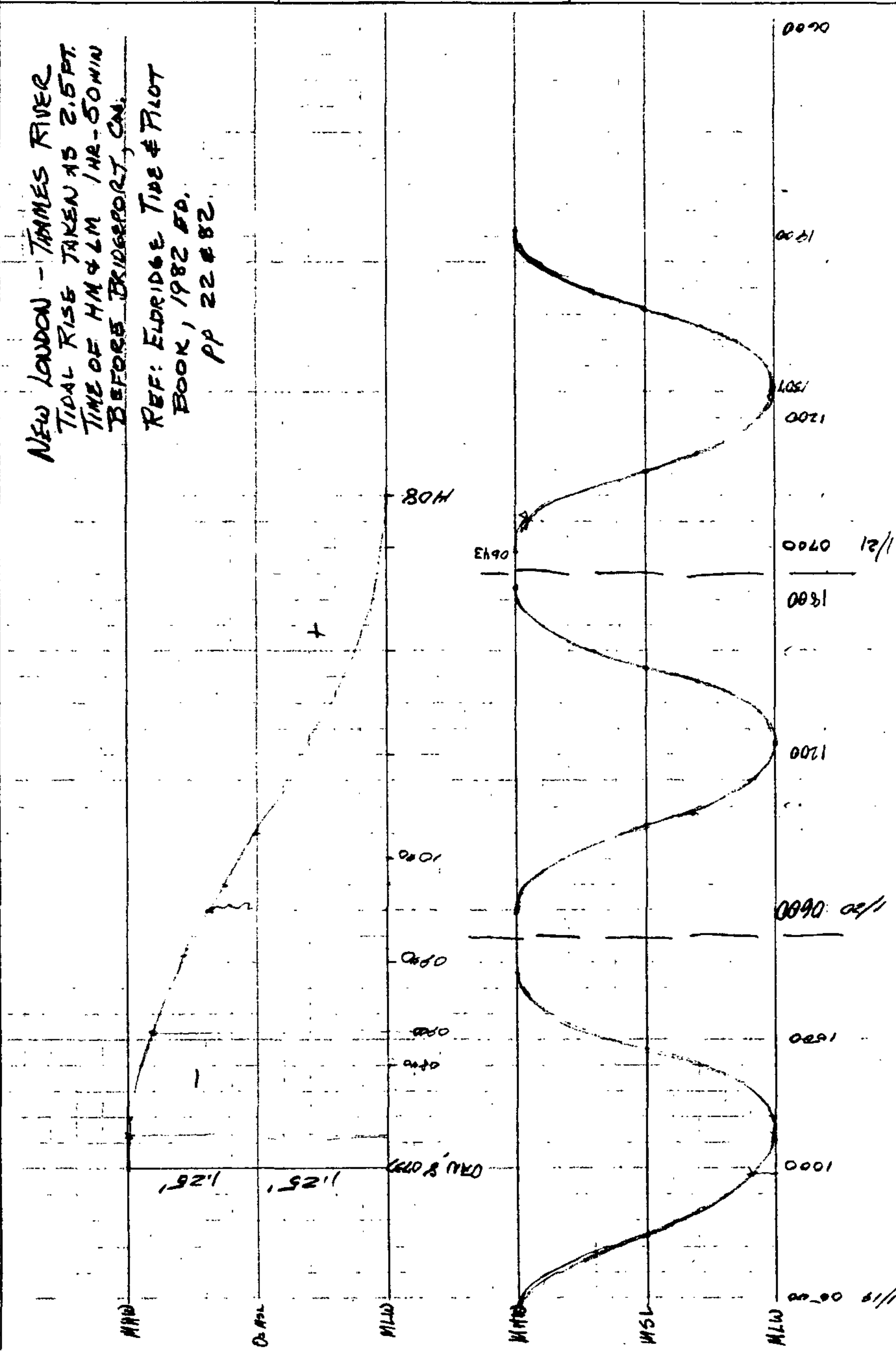
Sheet ____ of ____
Date ____
By M SHERRILL



Goldberg-Zoino & Associates, Inc.
Geotechnical-Geohydrological Consultants
Newton Upper Falls, MA

Project ______
File No. ______

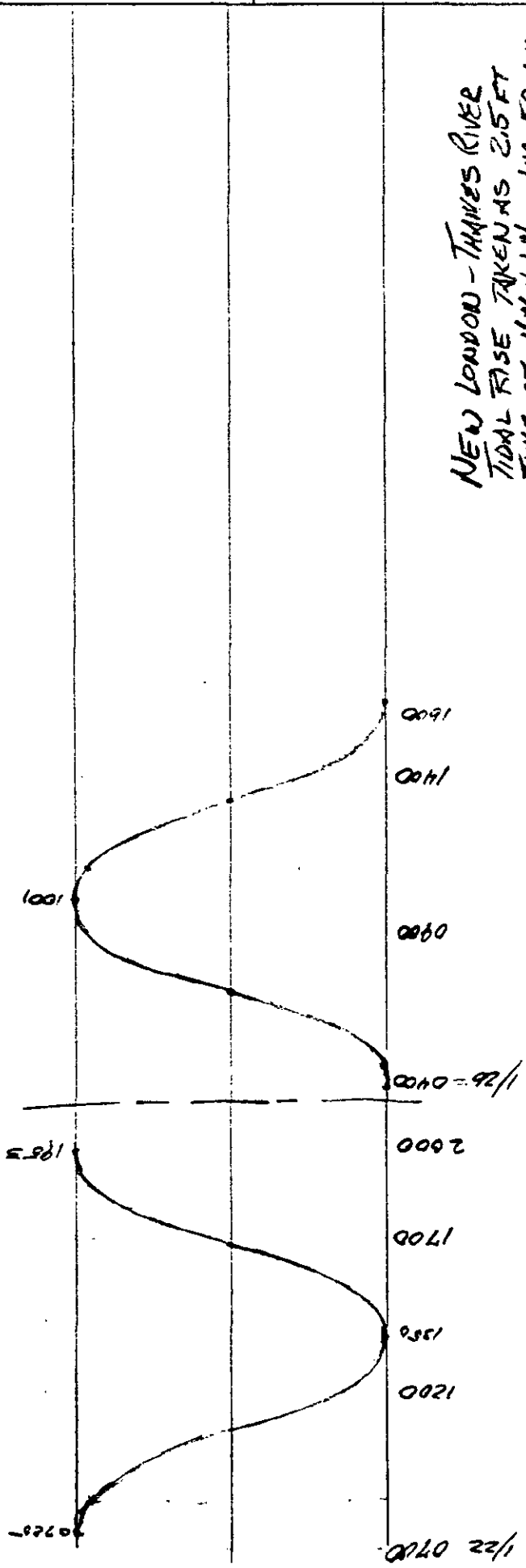
Sheet ______ of ______
Date ______
By ______



Goldberg-Zoino & Associates, Inc.
Geotechnical-Geohydrological Consultants
Newton Upper Falls, MA

Project _____
File No. _____

Sheet _____ of _____
Date _____
By _____



NEW LONDON - THAMES RIVER
TIDAL RISE TAKEN AS 2.5 FT
TIME OF HW & LW 1HR-50 MIN
BEFORE BRIDGEPORT, CN.

REF: ELDRIDGE TIDE & PILOT BOOK, 1982 ED.
PP. 22 & 82

NATIONAL 42-381 50 SHEETS 5 SQUARE 42-382 100 SHEETS 5 SQUARE 42-389 200 SHEETS 5 SQUARE

APPENDIX D

CHAIN OF CUSTODY LOGS

Goldberg-Zoino & Associates, Inc.
Geotechnical-Geohydrological Consultants
Newton Upper Falls, MA

Project BLACK LEDGE
File No.

Sheet ____ of ____
Date ____
By ____

CHAIN OF CUSTODY OF SAMPLES & CORES FROM BH-A

DATE	SAMPLE	DISPOSITION OF SAMPLE/CORE	CUSTODIAN
1/20/82	S-1 SPOON	BOXED JARS IN EQUIP LOCKER ABOARD, ADJ. RIG	MIKE SHERRILL GEOTECHNICAL INSPECTOR. Michael Sherrill
	S-2 SPOON	" " " " " " " "	
	S-3 SPOON	" " " " " " " "	
	A-1 CORE	CORE BOX IN CABIN ABOARD BARGE. ABOARD BARGE IN EQ. LOCKER 1010-1600 IN CABIN 1600-1700.	
		1700: TRANSFER TO P.J. MALONEY AT CROAKER MEMORIAL.	

NATIONAL 42-381 50 SHEETS 5 SQUARE 42-382 100 SHEETS 5 SQUARE 42-389 200 SHEETS 5 SQUARE

Goldberg-Zoino & Associates, Inc.
Geotechnical-Geohydrological Consultants
Newton Upper Falls, MA

Project BLACK LEDGE
File No.

Sheet ____ of ____
Date ____
By ____

CHAIN OF CUSTODY OF SAMPLES & CORES FROM BH-B

DATE	SAMPLE	DISPOSITION	CUSTODIAN
1/22/82	S-1, R	BOXED JAR IN HEATED CABIN ABOARD BARGE	MIKE SHERRILL GEOTECHNICAL INSPECTOR Michael Sherrill
	S-2, R	" " " " " " "	
	S-3B	" " " " " " "	
	S-3A	" " " " " " "	
	S-3R	" " " " " " "	
	S-4, R	" " " " " " "	
	S-5, R	" " " " " " "	
	S-6, R	" " " " " " "	
	S-7, R	" " " " " " "	
	S-8, R	" " " " " " "	
	NO CORE	0900 – 1730 IN HEATED CABIN ABOARD BARGE.	
		1730: TRANSFERED SAMPLES TO P.J. MALONEY	

42-381 50 SHEETS 5 SQUARE
42-382 100 SHEETS 5 SQUARE
42-389 200 SHEETS 5 SQUARE
NATIONAL

Goldberg-Zoino & Associates, Inc.
Geotechnical-Geohydrological Consultants
Newton Upper Falls, MA

Project BLACK LEDGE
File No.

Sheet ____ of ____
Date ____
By ____

CHAIN OF CUSTODY OF SAMPLES & CORES FROM BH-D

DATE	SAMPLE	DISPOSITION OF SAMPLES/CORES	CUSTODIAN
1/21/82	S-1 S-2 CD-1	BOXED JAR IN CABIN ABOARD BARGE BOXED JAR IN CABIN ABOARD BARGE CORE BOX IN CABIN ABOARD BARGE 0820 – 1600 BOXES IN HEATED CABIN ABOARD BARGE. 1600 TRANSFERRED TO P.J. MALONEY OF ATLANTIC TEST BORING	MIKE SKERRILL GEOTECHNICAL INSPECTOR Michael Skerrill

NATIONAL 42-381 50 SHEETS 5 SQUARE 42-382 100 SHEETS 5 SQUARE 42-389 200 SHEETS 5 SQUARE

Goldberg-Zoino & Associates, Inc.
Geotechnical-Geohydrological Consultants
Newton Upper Falls, MA

Project BLACK LEDGE
File No.

Sheet ____ of ____
Date ____
By ____

CHAIN OF CUSTODY OF SAMPLES & CORES FROM BH-E

DATE	SAMPLE	DISPOSITION	CUSTODIAN
1/26/82	S-1,2	BOXED JARS IN HEATED CABIN ABOARD BARGE 1100 - 1530 1530 - TRANSFERED TO P.J. MALONEY, ATLANTIC TEST BORING	MIKE SHERRILL GEOTECHNICAL INSPECTOR Michael Sherrill
1/26/82		Received all samples & cores from the Geotechnical Inspector Mike Sherrill which were stored in a heated cabin aboard barge; from there they were placed in a heated van and brought to the office of the Atlantic Test Boring Co. by P.J. Maloney. Delivery was made at 9:00 PM.	P.J. Maloney ATB

42-381 50 SHEETS 5 SQUARE
42-382 100 SHEETS 5 SQUARE
42-389 200 SHEETS 5 SQUARE
NATIONAL

Phone: 436-8428
436-8429

- FOUNDATION TEST BORINGS
- UNDISTURBED SAMPLES
- ROCK CORE DRILLING

ATLANTIC TEST BORING CO., INC.

Complete Soil Investigation Service
Anywhere In New England

34 KING STREET • BOSTON, MASS. 02122

FEBRUARY 10, 1982

MR. ROBERT X. BRAZEAU
DEPT OF THE ARMY, CORPS OF ENGINEERS
MATERIAL AND WATER QUALITY LABORATORY
424 TRAPELO ROAD, BLDG. #142
WALTHAM, MASSACHUSETTS 02254

RE: SOLICITATION #DACW-33-81-B-0056

CHAIN OF CUSTODY
BLACK LEDGE
GROTON, CONNECTICUT

DEAR MR. BRAZEAU:

ON FEBRUARY 3, 1982, FOUR (4) BOXES OF SAMPLES WERE DELIVERED TO YOUR OFFICE WHICH SOMEONE IN YOUR OFFICE SIGNED FOR. TODAY, WE ARE DELIVERING A CORE BOX FOR THE ABOVE CONTRACT NO. WHICH CONTAINS TWO (2) CORES.

UPON DELIVERY, MR. MALONEY OF THIS COMPANY WILL AFFIX HIS SIGNATURE TO THIS LETTER ACKNOWLEDGING DELIVERY, WOULD YOU PLEASE SIGN ALSO CONFIRMING DELIVERY. AS OF THIS DATE ALL SAMPLES AND CORES HAVE BEEN DELIVERED FOR THE ABOVE CONTRACT.

SINCERELY,
ATLANTIC TEST BORING COMPANY, INC.
Diane Hennessy

SIGN: FOR THE ATLANTIC TEST BORING CO., INC.

Alpine M. Raisani
DEPT OF THE ARMY 2/10/82
3:58

RECEIVED
FEB 12 198
Geotech. Engrg. Br.

Phone: 436-8428
436-8429

- FOUNDATION TEST BORINGS
- UNDISTURBED SAMPLES
- ROCK CORE DRILLING

ATLANTIC TEST BORING CO., INC.

Complete Soil Investigation Service
Anywhere In New England

34 KING STREET • BOSTON, MASS. 02122

FEBRUARY 9, 1982

MR. ROGER POISSON
DEPT OF THE ARMY, CORPS OF ENGINEERS
424 TRAPELO ROAD, BLDG. #117
WALTHAM, MASSACHUSETTS 02254

RE: SOLICITATION #DACW-81-B-0056, CHAIN OF CUSTODY OF SAMPLES AND CORES FOR BLACK LEDGE, GROTON, CONNECTICUT

DATE:	SAMPLE NO.	SAMPLES	
1/20/82	BH-A	S-1 SPT	BOXED JARS IN EQUIPMENT LOCKER ABOARD ADJ RIG.
		S-2 SPT	" " " " " " " "
		S-3 SPT	" " " " " " " "
		A-1 CORE	STORED CORE BOX IN CABIN ABOARD BARGE IN LOCKER FROM 10:10 TO 4:00, IN CABIN FROM 4:00 TO 5:00

SAMPLES AND CORE WERE HAND DELIVERED BY MR. MIKE SHERRILL OF GOLDBERG-ZOINO TO MR. P. J. MALONEY AT 5:00 AT THE CROAKER MEMORIAL, UPON DELIVERY, MR. MALONEY DROVE TO THE GROTON HOLIDAY INN AND STORED SAME IN A WARM HEATED ROOM. THE TOTAL TIME FOR EXCHANGE OF THE SAMPLES AND CORE WAS COMPLETED BY 5:30

DATE:	SAMPLE NO.	SAMPLES	
1/22/82	BH-B	S-1,R	BOXED JARS IN HEATED CABIN ABOARD BARGE.
		S-2,R	" " " " " " "
		S-3,A	" " " " " " "
		S-3,B	" " " " " " "
		S-3,R	" " " " " " "
		S-4,R	" " " " " " "
		S-5,R	" " " " " " "
		S-6,R	" " " " " " "
		S-7,R	" " " " " " "
		S-8,R	" " " " " " "
		NO CORE	

SAMPLES WERE STORED IN HEATED CABIN ABOARD BARGE FROM 9:00 TO 5:30
SAMPLES WERE HAND DELIVERED BY MR. MIKE SHERRILL OF GOLDBERG-ZOINO TO MR. P. J. MALONEY AT 5:30 AT THE CROAKER MEMORIAL, UPON DELIVERY, MR. MALONEY DROVE TO THE GROTON HOLIDAY INN AND STORED SAME IN A WARM HEATED ROOM. THE TOTAL TIME FOR EXCHANGE OF THE SAMPLES WAS COMPLETED BY 6:00

CONTINUED ON NEXT PAGE

Phone: 436-8428
436-8429

- FOUNDATION TEST BORINGS
- UNDISTURBED SAMPLES
- ROCK CORE DRILLING

ATLANTIC TEST BORING CO., INC.

Complete Soil Investigation Service
Anywhere In New England

34 KING STREET • BOSTON, MASS. 02122

MR. ROGER POISSON
CORPS OF ENGINEERS
WALTHAM, MASS. 02254

CHAIN OF CUSTODY
BLACK LEDGE
GROTON, CONNECTICUT

DATE:	SAMPLE NO.	SAMPLES	
1/19/82	BH-C	S-1,R SPT	BOXED JARS IN EQUIPMENT LOCKER ABOARD ADJ RIG
		S-2,R SPT	" " " " " " " "
		S-3,R SPT	" " " " " " " "
		S-4,R SPT	" " " " " " " "
		S-5,R SPT	" " " " " " " "
		S-6,R SPT	" " " " " " " "
		S-7 OPEN END	" " " " " " " "
		NO CORE	

STORED IN LOCKER ON BARGE FROM 11:30 TO 4:00, ON BARGE IN CABIN FROM 4:00 TO 5:00 SAMPLES WERE HAND DELIVERED BY MR. MIKE SHERRILL OF GOLDBERG-ZOINO TO MR. P. J. MALONEY AT 5:00, AT THE CROAKER MEMORIAL, UPON DELIVERY, MR. MALONEY DROVE TO THE GROTON HOLIDAY IN AND STORED SAME IN A WARM HEATED ROOM. THE TOTAL TIME FOR EXCHANGE OF THE SAMPLES WAS COMPLETED BY 5:30.

DATE:	SAMPLE NO.	SAMPLES	
1/21/82	BH-D	S-1	BOXED JARS IN HEATED CABIN ABOARD BARGE
		S-2	" " " " " " "
		CD-1	STORED CORE BOX IN CABIN ABOARD BARGE IN LOCKER

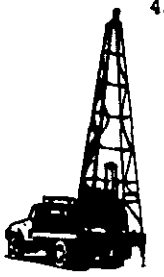
STORED IN HEATED CABIN ABOARD BARGE FROM 8:20 TO 4:00. SAMPLES AND CORE WERE HAND DELIVERED BY MR. MIKE SHERRILL OF GOLDBERG-ZOINO TO MR. P. J. MALONEY AT 4:00 AT THE CROAKER MEMORIAL, UPON DELIVERY, MR. MALONEY DROVE TO THE GROTON HOLIDAY INN AND STORED SAME IN A WARM HEATED ROOM. THE TOTAL TIME FOR EXCHANGE OF THE SAMPLES AND CORE WAS COMPLETED BY 4:30

DATE:	SAMPLE NO.	SAMPLES	
1/26/82	BH-E	S-1,R	BOXED JARS IN HEATED CABIN ABOARD BARGE

STORED IN HEATED CABIN ABOARD BARGE FROM 11:00 TO 4:30. SAMPLES WERE HAND DELIVERED BY MR. MIKE SHERRILL OF GOLDBERG-ZOINO TO MR. P. J. MALONEY AT 4:30. THESE SAMPLES WERE STORED IN A HEATED VAN OWNED BY MR. MALONEY WHILE HE WENT BACK TO THE GROTON HOLIDAY INN AND TRANSFERRED THE REST OF THE SAMPLES FROM THE HEATED ROOM TO THE VAN. FROM THIS DESTINATION THEY WERE TRANSPORTED TO THE ATLANTIC TEST BORING COMPANY OFFICE LOCATED AT 34 KING STREET, DORCHESTER, MASSACHUSETTS. THE JOB WAS COMPLETED. ALL SAMPLES AND CORES WERE DELIVERED TO THE ATLANTIC TEST BORING OFFICE BY 9:00

CONTINUED ON NEXT PAGE

Phone: 436-8428
436-8429



- FOUNDATION TEST BORINGS
- UNDISTURBED SAMPLES
- ROCK CORE DRILLING

ATLANTIC TEST BORING CO., INC.

Complete Soil Investigation Service
Anywhere In New England

34 KING STREET • BOSTON, MASS. 02122

MR. ROGER POISSON
CORPS OF ENGINEERS
WALTHAM, MASSACHUSETTS 02254

CHAIN OF CUSTODY
BLACK LEDGE
GROTON, CONNECTICUT

THE SECRETARY, MS. HENNESSEY, LABELED THE SAMPLES WHILE THEY WERE STORED IN THE OFFICE. ON FEBRUARY 3, 1982, FOUR BOXES OF SAMPLES WERE DELIVERED BY ME TO MR. ROBERT X. BRAZEAU OF THE DEPT. OF THE ARMY, CORPS OF ENGINEERS AT THE MATERIAL AND WATER QUALITY LABORATORY, BUILDING NO. 142.

ON FEBRUARY 10, 1982, I DELIVERED THE TWO CORES TO MR. BRAZEAU.

AS OF FEBRUARY 10, 1982, ALL SAMPLES AND CORES HAVE BEEN DELIVERED TO THE ARMY CORPS OF ENGINEERS.

SINCERELY,

ATLANTIC TEST BORING COMPANY, INC.

Philip J. Maloney

PHILIP J. MALONEY, PRESIDENT

PJM/dvh

APPENDIX E

SAFETY REPORT

WEEKLY SAFETY MEETING

NEDSO

Date held 12/15/81

TO: Safety Office, ~~NAD~~ NED

Time 8:00

THRU: Area Engineer, NEW ENGLAND Area

1. Weekly safety meeting was held this date for the following personnel:

Contract No. DACW33-81-B-0056 Contractor ATLANTIC TEST BORING CO., INC.

Conducted By: P. J. MALONEY Personnel present (Contr) P.J. MALONEY, KEVIN MALONEY
(Sub) ROBERT HUNT
(Sub) GLOUCESTER DREDGE AND DOCK
(Govt)

Subjects discussed (Note, delete, or add):

Individual Protective Equipment -

Prevention of Falls -

Safe Lifting Techniques -

Emergency Communications -

Fire Prevention - LOCATED ON BARGE

Sanitation, First Aid -

Tripping Hazards - trash, hose, nails in lumber - MOVEMENT ON BARGE AND AROUND RIG ETC.

Staging, Ladders, Concrete Forms - STEEL STAGING COVERED WITH 2" PLANK

Hand Tools, Portable Power Tools, Woodworking Machinery -

Equipment Maintenance (Zero defects) -

Hoisting Equipment - BRIGGS AND STRATTON WINCH UNIT, WITH 16.0' DERRICK USING 1" MANILA ROPE

Ropes, Hooks, Chains, and Slings -

Electrical Grounding, Temporary Wiring -

Lockouts for safe clearance procedures - electrical, pressure, moving parts,

Welding - WELDING WINCH UNIT TO PLATFORM

Excavations -

Loose Rock and Steep Slopes -

Explosives -

Water Safety -

Other - EXPOSURE HRS. WEEK OF 12.14-12/18.81

P.J. MALONEY	13 HRS.
KEVIN MALONEY	"
ROBERT HUNT	"
M. SIMPSON	"
J. SIMPSON	"
K. NORDSTROM	"

Prepared by P. J. MALONEY Title PRESIDENT

2. Forwarded.

Copy furnished

Signature NOT ON SITE
Resident Engineer

WEEKLY SAFETY MEETING

NEDSO

Date held DEC 21, 1981

TO: Safety Office, NEW

Time 0930

THRU: Area Engineer, _____ Area

1. Weekly safety meeting was held this date for the following personnel:

Contract No. DACW-33-81-B-0056 Contractor ATLANTIC TEST BORING

Conducted By: [illegible] Personnel present (Contr) ATB (see below)

(Sub) GLOUCESTER DOCK & DREDGE (see b

Subjects discussed (Note, delete, or add): (Govt) _____

Individual Protective Equipment - HARD HATS, LIFE JACKETS, GLOVES.

Prevention of Falls - [illegible] AROUND PLATFORM

Safe Lifting Techniques -

Emergency Communications - RADIO AGAIN TOG IN GOOD ORDER.

Fire Prevention - NOTED LOCATION OF EXTINGUISHERS. GASOLINE ABOARD TO FUEL SPUD [illegible] WINCH.

Sanitation, First Aid - NOTED LOCATION OF KIT ABOARD TUG.

Tripping Hazards - trash, hose, nails in lumber -

Staging, Ladders, Concrete Forms -

Hand Tools, Portable Power Tools, Woodworking Machinery -

Equipment Maintenance (Zero defects) -

Hoisting Equipment - BEWARE OF HAMMER, TRIPOD DRIVING [illegible] OPERATIONS.

Ropes, Hooks, Chains, and Slings - WATCH THE LINES FROM TUG TO BARGE, THESE [illegible] MOVED RELATIVE TO BARGE.

Electrical Grounding, Temporary Wiring -

→ Lockouts for safe clearance procedures - electrical, pressure, moving parts, [illegible] HANDLING ATB DURING OPERATIONS - STAND CLEAR

Welding - [illegible] DRILLING PLATFORM, NOT [illegible]

Excavations -

Loose Rock and Steep Slopes -

Explosives -

Water Safety -

(5) SKIFF AVAILABLE IN CASE OF PERSONNEL OVERBOARD.

(6) DRILL [illegible]

Other - (1), (2), (3), (4), (5), (6).

(1) TUG CAPTAIN'S JUDGEMENT AS TO PROCEEDING WITH OR TERMINATING WORK TO BE BASED UPON AVAILABLE INFORMATION AS TO WIND AND SEA STATE.

(2) TUG CAPTAIN TO NOTIFY COAST GUARD DAILY OF WORK PROGRESS ON BLOCK LEDGE.

(3) RAILING INSTALLED AROUND DRILLING PLATFORM.

(4) GENERAL CAUTIONING AS TO MOVEMENT ON BARGE, FROM TUG TO BARGE, FIELD TO BARGE, AND SURVIVAL TIME IN COLD, OPEN WATER.

Prepared by _____ Title _____

2. Forwarded.

Michael Sherrill GZA
Geotechnical Engineer

Copy furnished

Signature _____
Resident Engineer

NOTE: THE [illegible] DRILLING OPERATIONS AT THE BLOCK LEDGE SITE. SUBSEQUENT WEEKLY SAFETY REPORT WILL DETAIL EXPOSURE HOURS FOR DEC 21-27, [illegible]
ATLANTIC TEST BORING CONTRACTOR TO SUPPLY SAFETY REPORT FOR WEEK OF DEC [illegible]

WEEKLY SAFETY MEETING

NEDSO

Date held DEC 29, 1981

TO: Safety Office, NEW

Time 1100

THRU: Area Engineer, _____ Area

1. Weekly safety meeting was held this date for the following personnel:

Contract No. DACW-33-81-P-0056 Contractor ATLANTIC TEST BORING

Conducted By: MIKE SHERRILL

Personnel present (Contr) ATB (SEE BELOW)
(Sub) GLOUSTER DOCK & DREDGE (SEE BELOW)
(Govt) _____

Subjects discussed (Note, delete, or add):

ATB
P.J. MALONEY
KEVIN MALONEY
BOB HURT

GD&D
JOE SIMPSON (CAPTAIN)
MIKE SIMPSON (CREW)
KURT NORDSTROM (CREW)

Individual Protective Equipment - HARD HATS, GLASSES, AND VESTS
Prevention of Falls - SEE BELOW.
Safe Lifting Techniques -
Emergency Communications -
Fire Prevention -
Sanitation, First Aid -
Tripping Hazards - trash, hose, nails in lumber - SEE BELOW
Staging, Ladders, Concrete Forms -
Hand Tools, Portable Power Tools, Woodworking Machinery -
Equipment Maintenance (Zero defects) - BROKEN SPUD CABLE 12/23/81.
Hoisting Equipment -
Ropes, Hooks, Chains, and Slings - WATCH FOOTING WHEN MOVING FROM TUG TO BARGE, DUE TO THE WATER.
Electrical Grounding, Temporary Wiring -
Lockouts for safe clearance procedures - electrical, pressure, moving parts,
Welding - WORK DONE DURING WEEK TO REPAIR SPUD CABLE - NOT OBSERVED.
Excavations -
Loose Rock and Steep Slopes -
Explosives -
Water Safety - LIFE VESTS WORN OR READILY AVAILABLE. SHORE TIED ALONGSIDE.

Other - SAFETY OF MOVEMENT ABOARD BARGE & TUGS. RAINS HAD LEFT STANDING WATER ACCUMULATION ON BARGE SURFACE WHICH FROZE DURING NIGHTS. THE POINT WAS MADE TO WATCH YOUR STEP AND USE AVAILABLE HAND HOLDS. HOLDING WEATHER PATTERNS ARE SUCH THAT WIND VELOCITY TENDS TO INCREASE FROM MORNING TO AFTERNOON SUCH THAT MOVEMENT FROM TUG TO BARGE BECOMES MORE DANGEROUS. BE AWARE OF THIS.

2. Forwarded.

Prepared by _____ Title _____
Michael Sherrill (GEA)
GEOTECHNICAL ENGINEER.

Copy furnished

Signature _____
Resident Engineer

EXPOSURE HOURS, DEC 21 - DEC 24, 1981

ATB { P.J. MALONEY 14.5 HRS
KEVIN MALONEY 14.5 HRS
ROBERT HURT 14.5 HRS

GD&D { JOE SIMPSON 14.5 HRS
MIKE SIMPSON 14.5 HRS
KURT NORDSTROM 14.5 HRS

RON BULOSKI, QA INSPECTOR, BRIGGS ENG. 7.5 HRS
MIKE SHERRILL, GEOTECH. INSP 14.5 HRS.

WEEKLY SAFETY MEETING

NEDSO

Date held JAN 6, 1982

TO: Safety Office, NEW

Time 1200 HRS.

THRU: Area Engineer, _____ Area

1. Weekly safety meeting was held this date for the following personnel:

Contract No. DACW-33-81-B-0066 Contractor ATLANTIC TEST BORING

Conducted By: MIKE SHERRILL Personnel present (Contr) ATB (SEE BELOW)
(Sub) GLOUCESTER DOCK + DREDGE (BELOW)
(Govt) _____

Subjects discussed (Note, delete, or add):

	ATB	GD&D
Individual Protective Equipment - LIFE VESTS	P.J. MALONEY	JOE SIMPSON
Prevention of Falls -	ROBERT HUNT	MIKE SIMPSON
Safe Lifting Techniques -		KURT NORDSTROM

Emergency Communications -

Fire Prevention - LOCATION OF EXTINGUISHERS REEMPHASIZED

Sanitation, First Aid - LOCATION OF F.A. KIT REEMPHASIZED.

Tripping Hazards - trash, hose, nails in lumber -

Staging, Ladders, Concrete Forms -

Hand Tools, Portable Power Tools, Woodworking Machinery -

Equipment Maintenance (Zero defects) - REPLACED DRILLING WINCH. REDUCTION GEAR BREAKDOWN 12/30/81.

Hoisting Equipment -

Ropes, Hooks, Chains, and Slings -

Electrical Grounding, Temporary Wiring -

Lockouts for safe clearance procedures - electrical, pressure, moving parts,

Welding -

Excavations -

Loose Rock and Steep Slopes -

Explosives -

Water Safety -

Other -

① REEMPHASIZED NECESSITY OF VESTS. DRILLERS NOTED VESTS HAMPER THEIR OPERATIONS. VESTS ARE KEPT WITHIN 10 FEET OF DRILLING PLATFORM, AND ARE ALWAYS WORN WHEN ABOARD SKIFF.

② DRILLERS NOTED DESIRABILITY OF KEEPING PLATFORM IN THE LEE SO AS TO REDUCE WIND EXPOSURE. THIS WILL BE THE AIM AS LONG AS THE BARGE CAN BE DIRECTED TO MINIMIZE MOVEMENT DUE TO SWELL.

2. Forwarded.

Prepared by _____ Title _____

Mike Sherrill (GEX)
GEOTECH. ENG. (INSPECTOR)

Copy furnished

Signature _____
Resident Engineer

EXPOSURE HRS DEC 28-31, 1982

ATB
P.J. MALONEY 10 HRS
ROB. HUNT 10 HRS
KEVIN MALONEY 10 HRS
MIKE SIMPSON 10 HRS

GD&D
JOE SIMPSON 10 HRS
MIKE SIMPSON 10 HRS
KURT NORDSTROM 10 HRS

WEEKLY SAFETY MEETING

JAN 11-15, 1982.

NEDSO

Date held _____

TO: Safety Office, NEW

Time _____

THRU: Area Engineer, _____ Area

1. Weekly safety meeting was held this date for the following personnel:

Contract No. DACW-33-81-B-0056 Contractor ATLANTIC TEST BORING

Conducted By: MIKE SHERRILL Personnel present (Contr) ATB
(Sub) _____
(Govt) _____

Subjects discussed (Note, delete, or add):

Individual Protective Equipment -

Prevention of Falls -

Safe Lifting Techniques -

Emergency Communications -

Fire Prevention -

Sanitation, First Aid -

Tripping Hazards - trash, hose, nails in lumber -

Staging, Ladders, Concrete Forms -

Hand Tools, Portable Power Tools, Woodworking Machinery -

Equipment Maintenance (Zero defects) -

Hoisting Equipment -

Ropes, Hooks, Chains, and Slings -

Electrical Grounding, Temporary Wiring -

Lockouts for safe clearance procedures - electrical, pressure, moving parts,

Welding -

Excavations -

Loose Rock and Steep Slopes -

Explosives -

Water Safety -

Other -

WEEKLY SAFETY MEETING WAS NOT HELD DUE TO WEATHER CONDITIONS WHICH PRECLUDED BARGE MOVEMENT AND DRILLING OPERATIONS.

EXPOSURE HOURS ARE DETAILED FOR THE WEEK OF JAN. 4-8, 1982

Prepared by _____ Title _____

Michael Sherrill (GZA)
GEOTECHNICAL ENGINEER

2. Forwarded.

Signature _____
Resident Engineer

Copy furnished

ATB

P.J. MALONEY 19 HRS
BOB HUNT 19 HRS
MIKE SHERRILL 19 HRS
THOMAS HUNT 6 HRS

GD & D

JOE SIMPSON 19 HRS
MIKE SIMPSON 19 HRS
KURT NORDSTROM 19 HRS

WEEKLY SAFETY MEETING

NEDSO

Date held JAN 18, 1982 (0830)
JAN 19, 1982 (1200)

TO: Safety Office, NEW

Time

THRU: Area Engineer, _____ Area

1. Weekly safety meeting was held this date for the following personnel:

Contract No. DACW-33-81-B-0056 Contractor ATLANTIC TEST BORING

Conducted By: MIKE SHERRILL Personnel present (Contr) ATB (BELOW)
(Sub) GLOUCESTER DOCK & DREDGE (BELOW)
(Govt) _____

Subjects discussed (Note, delete, or add):

	ATB	GD&D
Individual Protective Equipment - BELOW		
Prevention of Falls - BELOW	1/18 & 1/19 P.J. MALONEY, BOB HUNT, NOTES 1,2,3	JOE SIMPSON, MIKE SIMPSON, FRAN WHITE — 1/19/82, NOTES 2,3
Safe Lifting Techniques - BELOW		
Emergency Communications -		
Fire Prevention -		
Sanitation, First Aid -		
Tripping Hazards - trash, hose, nails in lumber - BELOW		
Staging, Ladders, Concrete Forms -		
Hand Tools, Portable Power Tools, Woodworking Machinery - BELOW		
Equipment Maintenance (Zero defects) -		
Hoisting Equipment -		
Ropes, Hooks, Chains, and Slings -		
Electrical Grounding, Temporary Wiring -		
Lockouts for safe clearance procedures - electrical, pressure, moving parts,		
Welding -		
Excavations -		
Loose Rock and Steep Slopes -		
Explosives -		
Water Safety - BELOW		

NOTE ③: CAUTIONARY NOTE BROUGHT UP THAT NO ONE SHOULD BE ON BARGE OR TUG ALONE IN CASE OF UNNOTICED ACCIDENT OR FALLING OVERBOARD, IN PARTICULAR WHEN BARGE AND TUG ARE UNDERWAY.

Other - 1, 2, 3

① DISCUSSED CLEARING WORK AREA ON BARGE AND TUG. WEATHER OF PAST WEEK HAS LEFT ACCUMULATION OF SNOW AND ICE ON DRILLING PLATFORM, BARGE, AND TUG, MAKING FOOTING DIFFICULT.

② EXTREME COLD MAKES HANDLING OF TOOLS AND EQUIPMENT DIFFICULT AND HAZARDOUS. DRILLER NOTED THAT GLOVES, HANDS AND TOOLS CAN BE WARMED AT WINCH EXHAUST.

Prepared by _____ Title _____

Michael Sherrill (GZA)
GEOTECHNICAL ENGINEER

2. Forwarded.

Sent to Hotline

Signature _____
Resident Engineer

Copy furnished:

EXPOSURE HRS, WK OF JAN 11-16, 1982.

NO WORK DUE TO WEATHER AND SCHEDULING PROBLEM (JAN 13, 1982). GLOUSTER DOCK AND DREDGE PERSONNEL ABOARD TUG AND BARGE AT PIER.

WEEKLY SAFETY MEETING

NEDSO

Date held JAN 25, 1982 (0700)

TO: Safety Office, NEW

Time JAN 26, 1982 (1600) + (1340)

THRU: Area Engineer, _____ Area

1. Weekly safety meeting was held this date for the following personnel:

Contract No. DACW-33-81-B-0056 Contractor ATLANTIC TEST BORING

Conducted By: MIKE SHERRILL

Personnel present (Contr) ATB (BELOW)
(Sub) GD+D (BELOW)
(Govt) BRIGGS

Subjects discussed (Note, delete, or add):

Individual Protective Equipment -(BELOW)
Prevention of Falls -(BELOW)
Safe Lifting Techniques -(BELOW)
Emergency Communications -
Fire Prevention -
Sanitation, First Aid -
Tripping Hazards - trash, hose, nails in lumber -(BELOW)
Staging, Ladders, Concrete Forms -
Hand Tools, Portable Power Tools, Woodworking Machinery -
Equipment Maintenance (Zero defects) -
Hoisting Equipment -(BELOW)
Ropes, Hooks, Chains, and Slings -(BELOW)
Electrical Grounding, Temporary Wiring -
Lockouts for safe clearance procedures - electrical, pressure, moving parts,
Welding -
Excavations -
Loose Rock and Steep Slopes -
Explosives -
Water Safety -(BELOW)

ATB	GD+D	BRIGGS
P.J. MALONEY ①,④	J. SIMPSON ①	R. BUKOSKI ① ③
R. HUNT ①,④,⑤,②	M. SIMPSON ①	
T. HUNT ④,⑤,②		

④ 1330, 1/26/82: TRIPOD COLLAPSED WHILE ATTEMPTING TO HOIST PORTABLE CORE DRILL. CASING TOO HIGH RELATIVE TO PLATFORM AND TRIPOD IMPROPERLY SECURED TO PLATFORM. NO INJURIES. RIG REPLACED AND OPERATIONS RESUMED WITH TRIPOD SECURED TO PLATFORM. MR. MALONEY WAS SUBSEQUENTLY INFORMED OF PROBLEM UPON RETURN TO PIER.

Other -
① 1/25/82 NO WORK. EXTREME COLD WAS DISCUSSED AS IT APPLIED TO WORKING CONDITIONS AND SURVIVAL IN WATER.
② 1/26/82 BUKOSKI NOTES WORN HOIST ROPE, REPLACED.
③ 1/26/82 BUKOSKI & SHERRILL DISCUSSED LIFE VEST AVAILABILITY AND FOOTING ALONG BARGE DUE TO SNOW.

Prepared by _____ Title _____
Michael Sherrill (GZN)
GEOTECHNICAL ENG.

2. Forwarded.

Signature _____
Resident Engineer

Copy furnished

EXPOSURE HRS JAN 18-22 AND 25 & 26, 1982.

ATB		GD+D		BRIGGS	
J. MALONEY	33 HRS	J. SIMPSON	37.5 HRS	RON BUKOSKI	6.5 HRS.
T. HUNT	34 HRS	M. SIMPSON	37.5 HRS		
R. HUNT	40 HRS	F. WHITE	31.5 HRS		
M. SHERRILL	37 HRS				