APPENDIX F

Geotechnical Report

NEW JERSEY TURNPIKE AUTHORITY

INTERCHANGE 12 IMPROVEMENTS

TREMLEY POINT CONNECTOR ROAD
PHASE-I GEOTECHNICAL REPORT

JULY 27, 2006

PREPARED BY:

Edwards AND Kelcey

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INTRODUCTION

This report presents a summary of the subsurface investigation program including soil boring and laboratory test data collected during Phase I of the program for the Connector Road project. The Connector Road project is part of New Jersey Turnpike Interchange 12 Improvements Project. The project is located in Linden / Carteret, New Jersey. The purpose of this study is to investigate subsurface soil, groundwater conditions and rock quality along three alignment alternates at the project site. The project site traverses the border of Middlesex and Union Counties, as shown on Figure 1. The approximate location for the proposed preferred alignment of the Connector Road is superimposed on Figure 1.

The scope of work undertaken for Phase I of the subsurface investigation program includes preparing and executing a subsurface exploration program, drilling and sampling of 32 soil borings, installing two observation wells, and performing laboratory testing on select soil and rock samples. Phase I investigation also included environmental testing of the soils. The PMK Group, a sub-consultant to Edwards and Kelcey, conducted the environmental study. The results of the environmental study will be presented in a separate report.

Elevations in this report are in feet and are referenced to the 1988 NAVD datum.

PROJECT DESCRIPTION

The New Jersey Turnpike Interchange 12 Improvements include upgrading and expanding Interchange 12 in Carteret and constructing a new "Connector Road" between Industrial Road in Carteret and Tremley Point Road in Linden. The improvements will result in increased capacity of the Toll Plaza, relieve traffic congestion and divert truck traffic from local roads to the new connector roadway. The proposed new roadway extends a distance of approximately 5750 feet. The new connection will provide direct access of truck traffic from the Turnpike Interchange 12 to the city of Linden. The Connector Road will be comprised of elevated viaduct structures, retaining walls and embankment. The Connector Road also includes a bridge that crosses over the Rahway River. The alignment of the preferred alternate along with alternates 5 and 7 alignments are shown on Figure 2, "Boring Location Plan-Phase I".

The New Jersey Turnpike Authority (NJTA) awarded the contract for final design to Edwards and Kelcey (EK) in December 2005. EK had previously performed feasibility studies for the Interchange Improvements and Connector Road segments of the project. A preliminary subsurface investigation program for the proposed Connector Road was performed as part of the feasibility study. Geotechnical and foundation issues for the proposed roadway are discussed in a geotechnical report titled "Preliminary Geotechnical Report for Connector Road (Industrial Road to Tremley Point Road", dated June 25, 2004. During the feasibility study, EK was not able to obtain a permit to access the wetlands. Accordingly, the preliminary investigation was limited to areas outside the wetland areas.

The subsurface investigation conducted in Phase I is designed to study the soil conditions in wetlands areas and along the three alternates considered. In addition, the investigation covered the Cytec property where the alignment could possibly shift to minimize disturbance to the wetlands. The preferred alignment borders a former American Cyanamid Carteret Landfill. The landfill consists of unlined impoundment containing contaminated sludge and confined with earthen dikes. This area is referred to as Cytec Lagoon. The environmental issues related to the construction of the connector road through this property are beyond the scope of this report. This report addresses the geotechnical and foundation considerations and supplements the 2004 preliminary report.

SUBSURFACE EXPLORATION

The Phase I subsurface investigation program consisted of drilling a total of 32 soil borings. Soil borings drilled along the preferred alignment are designated as CR- borings. The borings drilled along alternate alignments number 5 and 7 are designated A5- and A7-, respectively. Eighteen soil borings were drilled along the preferred alignment. Four soil borings were located along Alternate-5 and seven soil borings along Alternate-7. Most of the soil borings are drilled in wetland areas with several borings drilled in the Rahway River.

Three borings were added to the boring program at the Cytec lagoon area to obtain environmental information and analyze the contaminants in the lagoon. The soil borings at the Cytec lagoon are designated E- borings. The E- borings are also designed to provide geotechnical information needed for the design of the connector road viaduct.

Five soil borings were drilled during the feasibility study stage of the project in 2004. The soil borings were drilled along the preferred alignment of the proposed Connector Road, and are designated B-10 through B-15 (excluding B-12). EK was not able to drill boring B-12 at the time due to inability to obtain a wetland permit. The feasibility study borings are included in this report. The location of all test borings done is shown on Figure 2, Boring Location Plan-Phase I.

The purpose of the borings is to provide information on both geotechnical and environmental issues that will influence the final design and cost of the project for the various alignments considered. PMK Group, a sub-consultant to EK provided full-time environmental and geotechnical monitoring during drilling of test borings and installation of groundwater observation wells. Information related to the results of the environmental sampling and testing program will be provided by PMK in a separate report. Information related to the results of the geotechnical program will be provided herein.

Logs of test borings were prepared by PMK and are included in Appendix A. The boring locations and ground surface elevation at each boring were surveyed by EK staff and/or estimated from topographic plans.

The test borings were drilled by Warren George Inc. of Jersey City, New Jersey. The soil borings were drilled the period of November 2005 through January 2006. The borings were drilled using truck mounted or track mounted drill rigs and rotary drilling techniques. Soil borings were drilled in wetlands using a "Marsh Buggy" that utilized a drill rig mounted on track-chain pontoon. Continuous sampling was performed through the fill and organic layer or to a minimum of 10 feet. Sampling at standard 5-foot intervals was performed thereafter. Samples were obtained using standard 2 inch O.D. by 1-3/8 inch I.D. split-spoon samplers. Undisturbed samples of the organic layer were obtained using 3-inch O.D. Shelby tubes.

Standard Penetration Test (SPT) was conducted at each sampling interval. The SPT consists of driving the split-spoon sampler 24 inches below the bottom of the borehole using a 140-pound hammer falling freely through 30 inches. The number of blows required to drive the sampler each 6-inch interval is recorded on the boring logs. The SPT N-value is generally the number of blows required to advance the sampler the middle 12 inches of the 24-inch sampling range.

All soil borings were drilled to the top of rock, which was encountered between 20 and 50 feet below ground surface. Rock was then cored 5 feet using an NX size core barrel with a diamond bit in all borings except the Rahway River boring. The water borings in the Rahway River were drilled 30 feet into the rock.

A groundwater observation well was installed in boring CR-1 and CR-57. The observation well installation consisted of placing PVC pipe with a 5-foot long screen in a separate hole drilled

adjacent to the corresponding boring. Groundwater readings were taken during the boring program. Results of groundwater monitoring are shown on the boring log and the soil profile.

A summary of subsurface conditions encountered in the test borings is presented in Table I.

LABORATORY TESTING

Laboratory testing was performed on the undisturbed soil samples obtained in the boring program. In addition, Point Load and Unconfined Compression strength tests were performed on select rock core samples. The rock cores tested were selected from the river borings drilled where rock-socked caisson foundation is anticipated. The unconfined compressive strength of the rock samples tested ranged from 1460 to 10430 psi. A summary of the rock laboratory test data can be found in Appendix B.

Classification and performance tests were performed on the undisturbed soil samples recovered. The classification tests include Grain size distribution and Atterberg limits tests for purposes of soil classification. Note that the field boring logs have not been edited to reflect the laboratory sample classification. Performance tests consisting of One-Dimensional Consolidation and Unconfined Compression tests were also conducted on the undisturbed soil samples.

One-Dimensional Consolidation tests were conducted on 10 undisturbed tube soil samples to determine the consolidation characteristics of the various soft organic deposits. The compression ratio ($Cc/[1+e_o]$) for the samples tested ranged from 0.063 to 0.460. It should be noted that the material tested varied in consistency from organic clayey silt to peat with varying amounts of sand. Unconfined Compression tests were also performed on eight of the 10 tube samples to evaluate the undrained shear strength of the soft organic layer. The test data indicated an undrained shear strength that varies from 60 to 290 pounds per square foot (psf).

The Laboratory testing was performed by Geotesting Services, Inc. of Tottowa, New Jersey. The results of the laboratory tests are included in Appendix B.

SITE AND SUBSURFACE CONDITIONS

The Connector Road is abutted to the south by Industrial Road; to the east by a facility owned by Kinder Morgan and an undeveloped property owned by Carteret Development LLC and EFC Land Development; to the west by the Slayton Development site and an undeveloped property in the City of Linden; and to the north by Tremley Point Road. Most of the area proposed for the alignment of the connector road is currently undeveloped and designated as wetlands.

The subsurface soil investigation performed in Phase I encountered similar soil conditions as the feasibility borings indicated. In general, the subsurface soils in the area of investigation consist of man-placed fill over organic soils over glacial alluvial deposits over decomposed rock and bedrock. Since most of the soil borings are drilled in wetland areas, very few borings indicated man-placed fill material. The thickness and nature of the organic soil were more defined along the proposed alternate alignments. In addition, the depth to rock and the rock strength properties were tested in this phase of the project.

Subsurface soil and rock strata encountered in the Phase I test borings are described below in order of increasing depth below ground surface. Soil boring logs providing description of soil and rock samples recovered in the test borings are included in Appendix A. A summary of subsurface conditions encountered at the locations of test borings is presented in Table I. Soil profiles along the three alternates considered are shown on Figures 3 through 9. Data from the soil borings done in the feasibility study are included in the soil profiles.

- **Miscellaneous Fill**
  The fill was encountered in two borings on the Carteret side; CR-1 and CR-68, nine and 15 feet thick respectively. The fill found in CR-68 is medium dense to very dense mixture of sand, silt and gravel. Loose fill mixed with pieces of brick and wood was encountered in CR-1 located in the vicinity of the railroad tracks. At the Cytec property (E-borings), eight feet of fill was encountered in the lagoon overlaying the organic natural deposits.

- **Organic Deposits**
  Organic deposits were encountered in all soil borings with the exception of CR-1. The material consisted of very soft deposits of organic Silt, silty Clay and Peat. In some areas organic silt mixed with higher contents of sand was found. The SPT N-value ranged from weight of rod (WR) to 3. Boring drilled in the Rahway River, encountered black organic Silt deposits mixed with Peat in certain samples. The SPT N-values in these borings were generally weight of rods or weight of hammer.

- **Glacial Alluvial**
  This layer can generally described as red brown or brown clayey SILT with varying amounts of coarse to fine sand and coarse to fine gravel. This layer ranged in thickness from 3 to 33 feet. In general, the glacial alluvial is medium dense to very dense in consistency.

- **Decomposed Rock**
  A layer of decomposed rock was encountered overlying bedrock in some borings. The decomposed rock was described as completely weathered red brown shale, and ranged in thickness from 1 to 15 feet. SPT N-values in this layer are generally very high.

- **Rock**
  Bedrock was cored in all borings drilled. The rock at the site was generally described as very closely to medium fractured, slightly to highly weathered, red brown Shale. Recovery ranged from 32 to 100% and RQD ranged from 0 to 91%.

Groundwater Conditions

The observation well measurements taken during the recent boring program indicate the groundwater level is at El. 3.9 at CR-1 and at El. 2.98 at CR-57. Groundwater levels are influenced by many factors such as precipitation, surface runoff, and seasonal variations. Water levels encountered during construction may differ from those reported here.

GEOTECHNICAL EVALUATION

The proposed Connector Road project begins at-grade at Industrial Road, rises in grade to cross over the Rahway River, and meets Tremley Point Road at-grade. Just north of Industrial Road, the proposed new roadway crosses over the existing Conrail track with a single span bridge. The existing grade at Industrial Road will be raised approximately 25 feet to accommodate the bridge over Conrail. The raising of Industrial Road is part of another project that the Connector Road will tie in to.

The construction of the new roadway will consist of; elevated viaduct structures, retaining walls and embankment construction. The work will be in areas that currently exist as wetlands. The wetlands are covered by soft compressible soils. The thickness of this layer varies throughout the project site. On the Carteret side, the thickness of the soft organic soils varies from 5 to 12 feet and is up to 16 feet thick in areas along Alternate 7. The organic layer is thicker on the Linden side of the Rahway River, 20 to 25 feet thick, and it thins out close to Tremley Point Road. In the Rahway River, black organic Silt mixed with Peat in some borings was encountered. The thickness of soft organic Silt in the Rahway River varies from 8 to 16 feet thick.

Embankment construction will require that the organic soils be excavated and replaced prior to placing fill. Alternately, the embankment areas will need to be surcharged prior to roadway construction. In the feasibility study it was assumed that excavating and replacing the organic is an option if the organic deposits are found to be less than two feet thick. The subsurface investigation program conducted in this phase of the project indicates that this option may not be economical.

The proposed embankment fill along the proposed alignment may reach up to 25 feet high. Surcharging the embankment fill areas will be required in order to consolidate the soft cohesive soils and provide a stable foundation for the embankment load. The surcharge shall be designed to minimize the long term settlement from the anticipated loading conditions.

Rock is encountered at shallow depth and is relatively consistent throughout the area. In general, rock is found at shallower depths on the Linden side compared to the Carteret side of the Rahway River. Bedrock at the project site can found at elevation that ranges from -19.4 to -50.6 feet. The top of the rock surface elevation varies from El. -26 to -37 at the Carteret side and from El. -19 to -30 on the Linden side of the Rahway River. The depth to rock below the existing ground surface is presented in Table 1, Summary of Test Boring Data.

The presence of the soft deposits of organic clayey Silt and Peat will preclude the use of shallow spread footing foundations. Deep foundations shall be used to provide positive support for the bridge, viaduct and retaining walls. Steel H-piles or concrete-filled steel pipe piles can be used. The selection of the pile type will be based on the final pier configurations, spans and loading condition. The piles shall be end-bearing piles driven to bedrock.

The pier foundation for the proposed bridge spanning the Rahway River may require drilled shafts with a rock socket. The borings drilled in the river for the three alternate alignments indicate relatively shallow rock surface and thick organic deposits. The anticipated high vertical and lateral loading conditions for the bridge foundation may require that the foundation derive their resistance from the rock socket.

CONCLUSION

The Phase II of the subsurface investigation program will resume once a decision is made on the roadway alignment. A more extensive boring and laboratory testing program will be performed based on the design alignment and profile. The design recommendation based on engineering analyses will be presented in that stage. Comparing the alternates considered at this point, EK do not see a major advantage of one alignment over the others from a geotechnical and foundation point of view. The depth to rock and thus foundation cost may vary. However, the variation is small and will not influence the decision. Embankment surcharge will be required regardless of the alignment chosen. Excavating and replacing the soft organic soil prior to construction the embankment may not be economical. Based on the height of the embankment, the surcharge may need to be constructed in stages to ensure a stable section.

From a geotechnical perspective, EK does not see a major advantage in any of the alternates.

New Jersey Turnpike Authority

INTERCHANGE 12 IMPROVEMENTS

TREMLEY POINT CONNECTOR ROAD
PHASE-I GEOTECHNICAL REPORT

TABLES

TABLE I.
SUMMARY OF TEST BORING DATA
FILE NO. 050011.102
NJ TURNPIKE INTERCHANGE 12 IMPROVEMENTS
CONNECTOR ROAD-PHASE I SOIL BORING PROGRAM
LINDEN / CARTERET, NEW JERSEY

TEST BORING NO.	GROUND SURFACE ELEVATION (feet)	DEPTH OF EXPLORATION (feet)	APPROXIMATE THICKNESS OF STRATUM (feet)				DEPTH TO ROCK (feet)	ELEVATION TOP OF ROCK (feet)	GROUNDWATER ELEVATION (4) (feet)
			FILL	ORGANIC DEPOSITS	GLACIAL ALLUVIAL	DECOMPOSED ROCK			
CONNECTOR ROAD PREFERRED ALIGNMENT (ALTERNATE 6)									
CR-1(OW)	7.00	40.3	9	NE	26.3	NE	35.3	-28.30	3.9
CR-5	2.30	37.0	NE	6	26.0	NE	32.0	-29.70	--
CR-10	2.40	45.0	NE	10	30.0	NE	40.0	-37.60	--
CR-22	2.42	36.0	NE	10	21.0	NE	31.0	-28.58	--
CR-24	2.03	39.0	NE	12	22.0	NE	34.0	-31.97	--
CR-26	2.34	40.0	NE	12	23.0	NE	35.0	-32.66	--
CR-33	-7.43	59.0	NE	8	21.0	NE	29.0	-36.43	--
CR-36	-7.70	56.5	NE	10	7.0	10	26.5	-34.20	--
CR-41	7.60	35.0	NE	25	5.0	NE	30.0	-22.40	--
CR-45	6.76	32.0	NE	15	12.0	NE	27.0	-20.24	--
CR-57(OW)	6.98	42.0	NE	4	33.0	NE	37.0	-30.02	2.98
CR-64	2.20	45.0	NE	8	32.0	NE	40.0	-37.80	--
CR-66	2.93	34.0	NE	8	22.0	NE	30.0	-27.07	--
CR-68	12.82	50.0	15	5	25.0	NE	45.0	-32.18	--
CR-69	2.73	34.0	NE	10	19.0	NE	29.0	-26.27	--
CR-72	8.18	35.0	NE	10	20.0	NE	30.0	-21.82	--
CR-74	6.07	30.5	NE	12	13.0	1	25.5	-19.43	--
CR-77	4.52	45.0	NE	4	36.0	NE	40.0	-35.48	--
ALTERNATE 5 ALIGNMENT									
A5-1	-8.14	52.5	NE	10	10	2.5	22.5	-30.64	--
A5-2	-5.80	50.1	NE	15	3	2.1	20.1	-25.90	--
A5-3	4.54	35.0	NE	25	5	NE	30	-25.46	--
A5-4	4.71	35.0	NE	25	5	NE	30	-25.29	--

TEST BORING NO.	GROUND SURFACE ELEVATION (feet)	DEPTH OF EXPLORATION (feet)	APPROXIMATE THICKNESS OF STRATUM (feet)				DEPTH TO ROCK (feet)	ELEVATION TOP OF ROCK (feet)	GROUNDWATER ELEVATION (4) (feet)
			FILL	ORGANIC DEPOSITS	GLACIAL ALLUVIAL	DECOMPOSED ROCK			
ALTERNATE 7 ALIGNMENT									
A7-1	2.88	45.0	NE	16	24	NE	40	-37.12	--
A7-2	2.61	37.0	NE	10	22	NE	32	-29.39	--
A7-3	-3.50	60.0	NE	16	14	NE	30	-33.50	--
A7-4	-10.40	64.0	NE	10	20	4	34	-44.40	--
A7-5	-4.00	63.0	NE	10	23	NE	33	-37.00	--
A7-6	2.60	38.0	NE	20	13	NE	33	-30.40	--
A7-7	-6.39	42.0	NE	20	7	NE	27	-33.39	--
CYTEC PROPERTY									
E-1	4.28	45.0	8	7	25	NE	40	-35.72	--
E-2	4.41	60.0	8	6	26	15	55	-50.59	--
E-3	4.43	50.5	8	12	24	1.5	45.5	-41.07	--

NOTES:

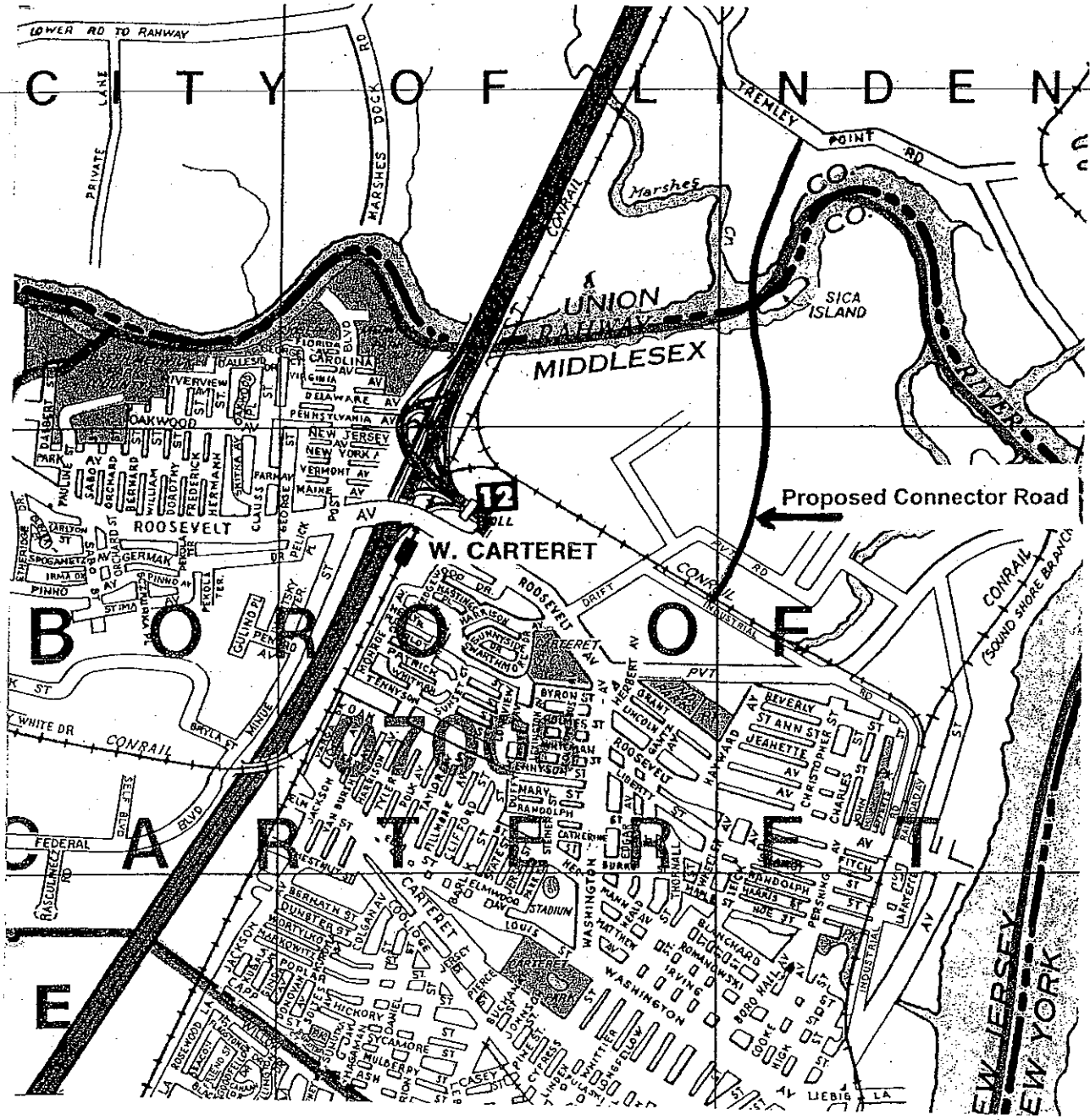
1. BORING CR-1 WAS RELOCATED TO STATION 2+27 DUE TO EXISTING UNDERGROUND UTILITIES.
2. ELEVATIONS ARE IN FEET AND REFER TO THE NAVD 1988 DATUM.
3. GROUND SURFACE ELEVATIONS WERE SURVEYED BY EK.
4. MUDLINE ELEVATION FOR RAHWAY RIVER BORINGS ARE ESTIMATED FROM RIVER SOUNDINGS.
5. GROUNDWATER ELEVATION REPRESENTS MAXIMUM OF GROUNDWATER LEVELS MEASURED.
6. 'NE' INDICATES STRATUM NOT ENCOUNTERED; 'ND' INDICATES VALUE NOT DETERMINED.

New Jersey Turnpike Authority

INTERCHANGE 12 IMPROVEMENTS

P TREMLEY POINT CONNECTOR ROAD
PHASE-I GEOTECHNICAL REPORT

FIGURES



Edwards AND Kelcey

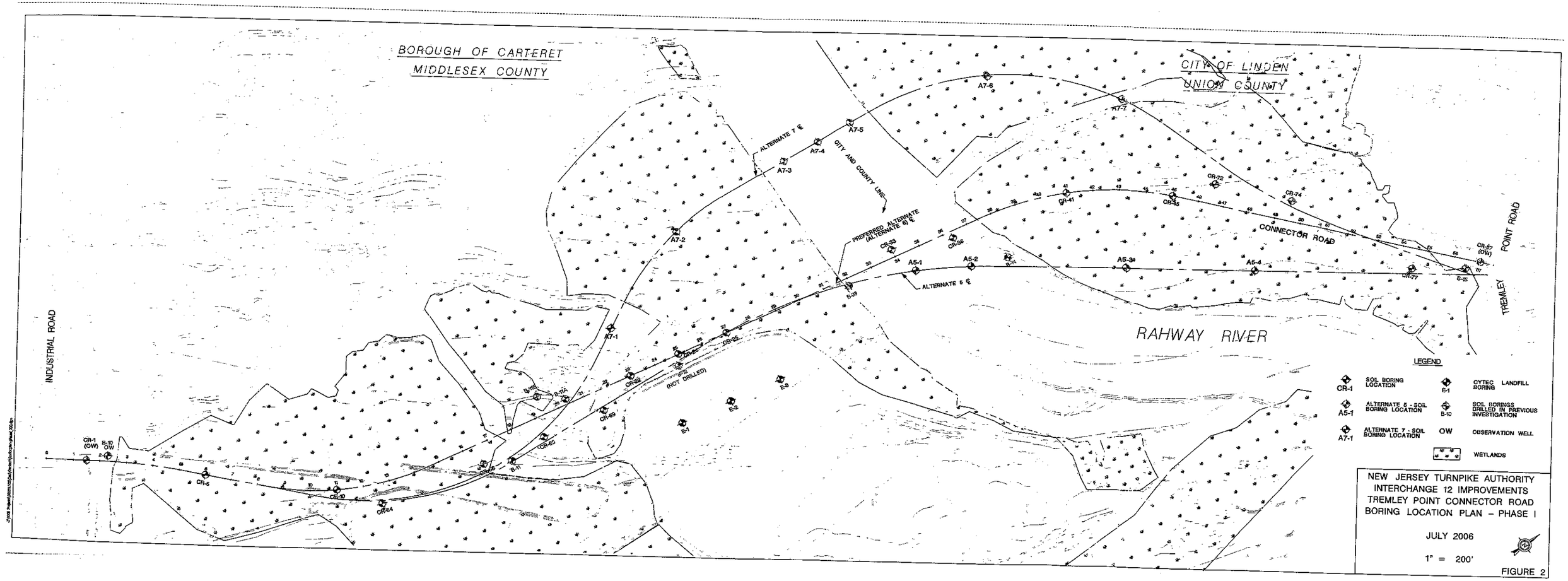
NEW JERSEY TURNPIKE AUTHORITY
INTERCHANGE 12 IMPROVEMENTS
CARTERET, NEW JERSEY

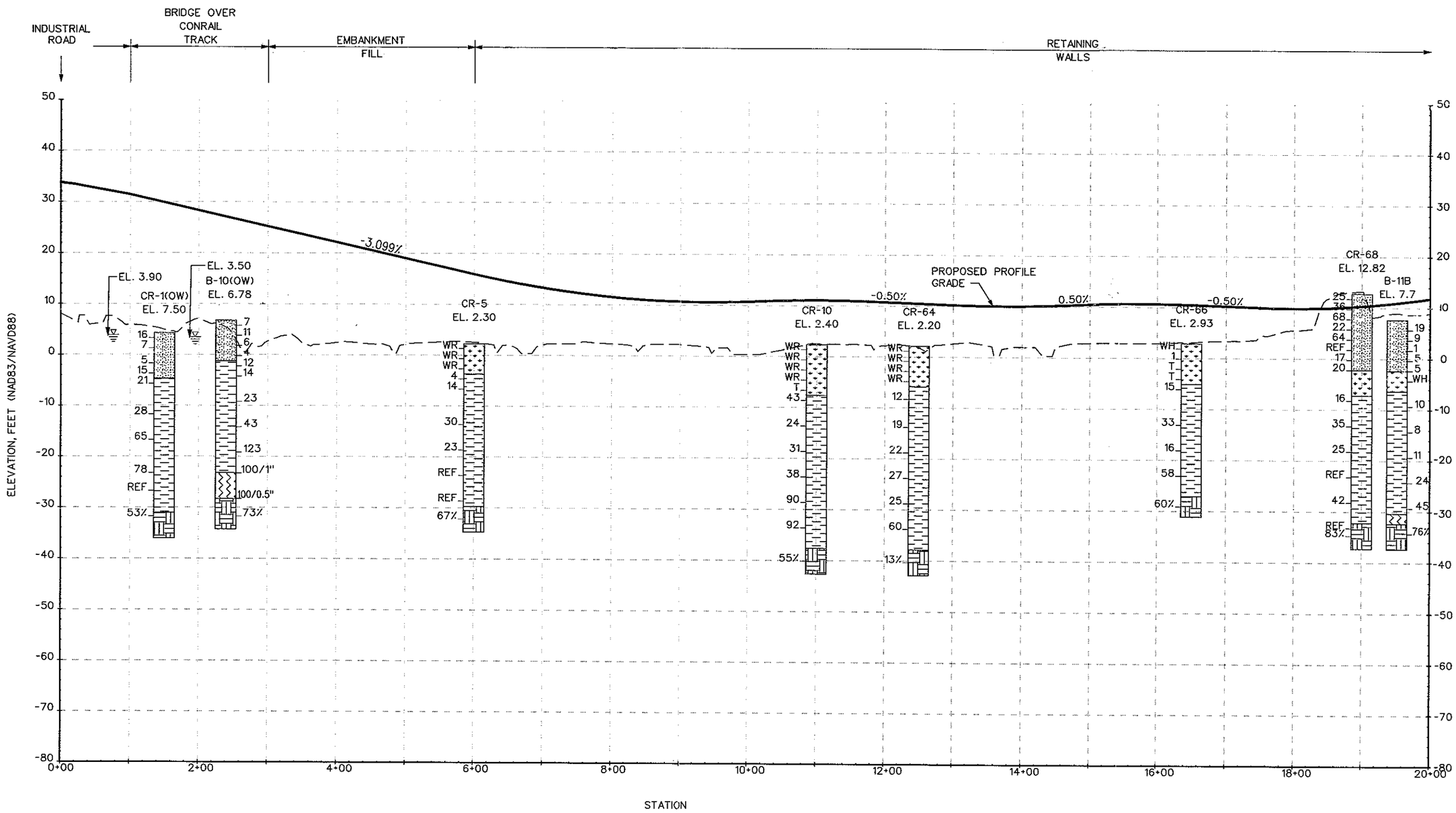
PROJECT LOCUS

NOTE: FROM MIDDLESEX COUNTY HAGSTROM MAP, 1994

JULY 2006

FIGURE 1


BOROUGH OF CARTERET
MIDDLESEX COUNTY
CITY OF LINDEN
UNION COUNTY
INDUSTRIAL ROAD
TREMLEY POINT ROAD
CONNECTOR ROAD
RAHWAY RIVER
CITY AND COUNTY LINE
ALTERNATE 7 ℄
ALTERNATE 5 ℄
PREFERRED ALTERNATE (ALTERNATE 6) ℄
(NOT DRILLED)
LEGEND
CR-1 SOIL BORING LOCATION
A5-1 ALTERNATE 5 - SOIL BORING LOCATION
A7-1 ALTERNATE 7 - SOIL BORING LOCATION
E-1 CYTEC BORING LANDFILL
B-10 SOIL BORINGS DRILLED IN PREVIOUS INVESTIGATION
OW OBSERVATION WELL
WETLANDS
NEW JERSEY TURNPIKE AUTHORITY
INTERCHANGE 12 IMPROVEMENTS
TREMLEY POINT CONNECTOR ROAD
BORING LOCATION PLAN – PHASE I
JULY 2006
1" = 200'
FIGURE 2



LEGEND

- FILL
- ORGANIC DEPOSITS
- GLACIAL ALLUVIAL DEPOSITS
- DECOMPOSED ROCK
- ROCK

12 — SPT N-VALUE

73% — RQD VALUE

(OW) — INDICATES OBSERVATION WELL

WH — INDICATES WEIGHT OF HAMMER

WR — INDICATES WEIGHT OF RODS

INDICATES MEASURED HIGH AND LOW WATER LEVEL

0 1/2 1 2

ORIGINAL SIZE IN INCHES

	BY	DATE
MADE		
TRACED		
CHECKED		
SUPERVISED		

No.	DATE	REVISION

NEW JERSEY TURNPIKE AUTHORITY

NEW JERSEY TURNPIKE

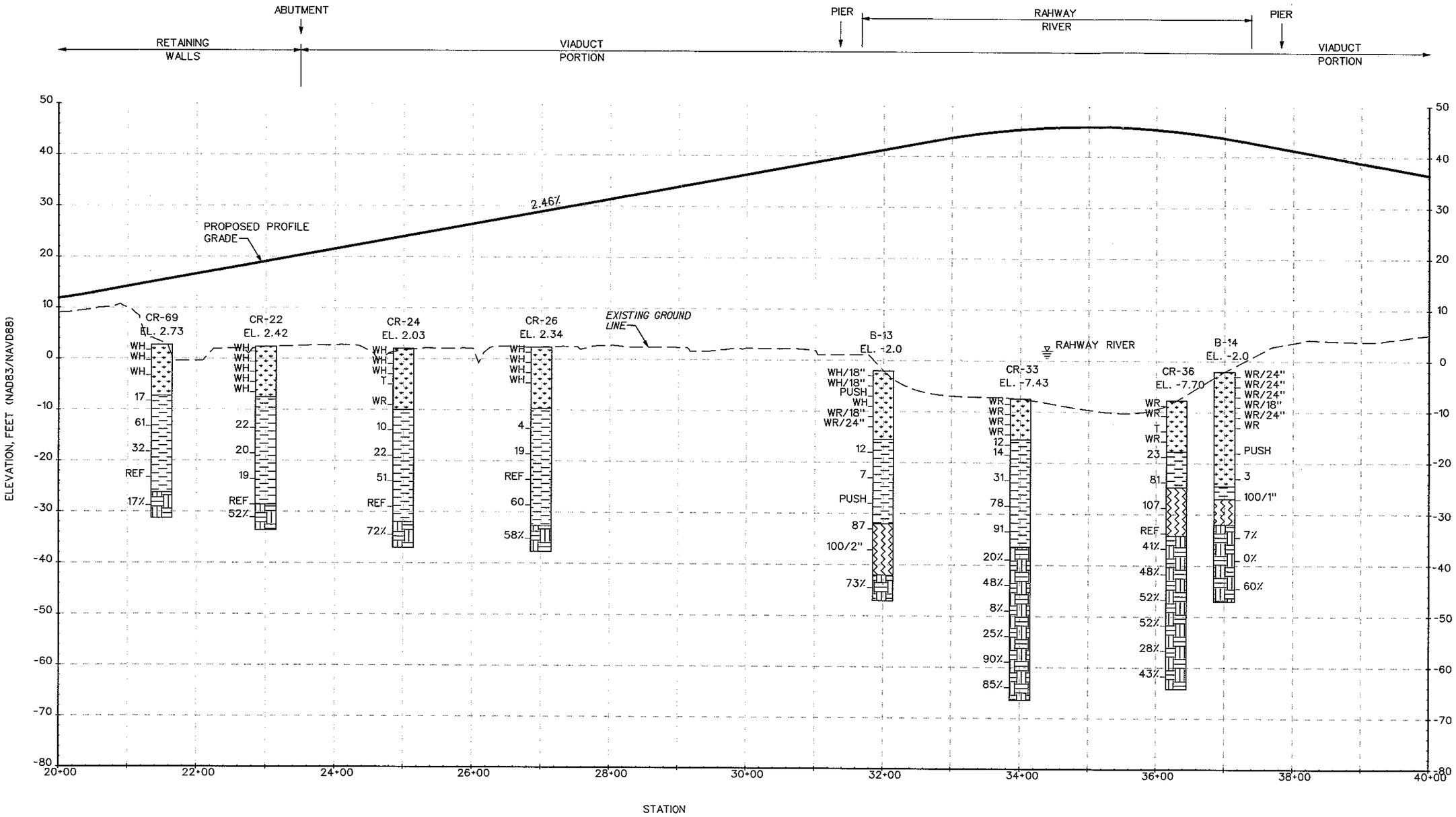
INTERCHANGE 12 IMPROVEMENTS

TREMLEY POINT CONNECTOR ROAD
SOIL PROFILE - PREFERRED ALTERNATE
PHASE I BORING PROGRAM

EDWARDS AND KELCEY, INC.
299 MADISON AVE., MORRISTOWN, NEW JERSEY

SCALE: H: 1"=300'
V: 1"=10'
DATE: JULY 2006

FIG. 3



LEGEND

	FILL	12	SPT N-VALUE
	ORGANIC DEPOSITS	73%	RQD VALUE
	GLACIAL ALLUVIAL DEPOSITS	(OW)	INDICATES OBSERVATION WELL
	DECOMPOSED ROCK	WH	INDICATES WEIGHT OF HAMMER
	ROCK	WR	INDICATES WEIGHT OF RODS
			INDICATES MEASURED HIGH AND LOW WATER LEVEL

0 1/2 1 2
ORIGINAL SIZE IN INCHES

	BY	DATE
MADE		
TRACED		
CHECKED		
SUPERVISED		

No.	DATE	REVISION

NEW JERSEY TURNPIKE AUTHORITY

NEW JERSEY TURNPIKE

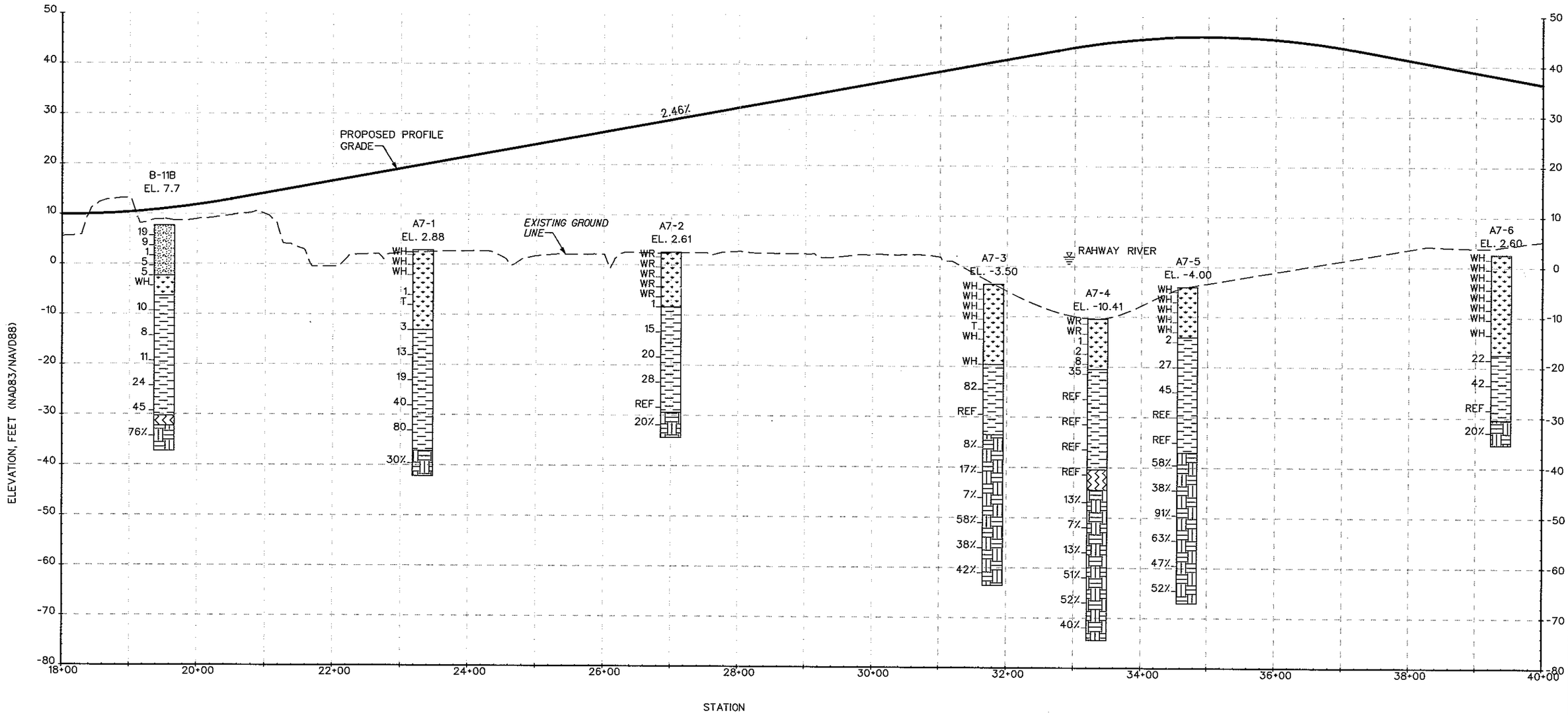
INTERCHANGE 12 IMPROVEMENTS

TREMLEY POINT CONNECTOR ROAD
SOIL PROFILE - PREFERRED ALTERNATE
PHASE I BORING PROGRAM

EDWARDS AND KELCEY, INC.
299 MADISON AVE., MORRISTOWN, NEW JERSEY

SCALE: H: 1" = 300'
V: 1" = 10'
DATE: JULY 2006

FIG. 4



LEGEND

- FILL
- ORGANIC DEPOSITS
- GLACIAL ALLUVIAL DEPOSITS
- DECOMPOSED ROCK
- ROCK

- 12 — SPT N-VALUE
- 73% — RQD VALUE
- (OW) — INDICATES OBSERVATION WELL
- WH — INDICATES WEIGHT OF HAMMER
- WR — INDICATES WEIGHT OF RODS
- INDICATES MEASURED HIGH AND LOW WATER LEVEL

0 ½ 1 2
ORIGINAL SIZE IN INCHES

	BY	DATE
MADE		
TRACED		
CHECKED		
SUPERVISED		

No.	DATE	REVISION

NEW JERSEY TURNPIKE AUTHORITY

NEW JERSEY TURNPIKE

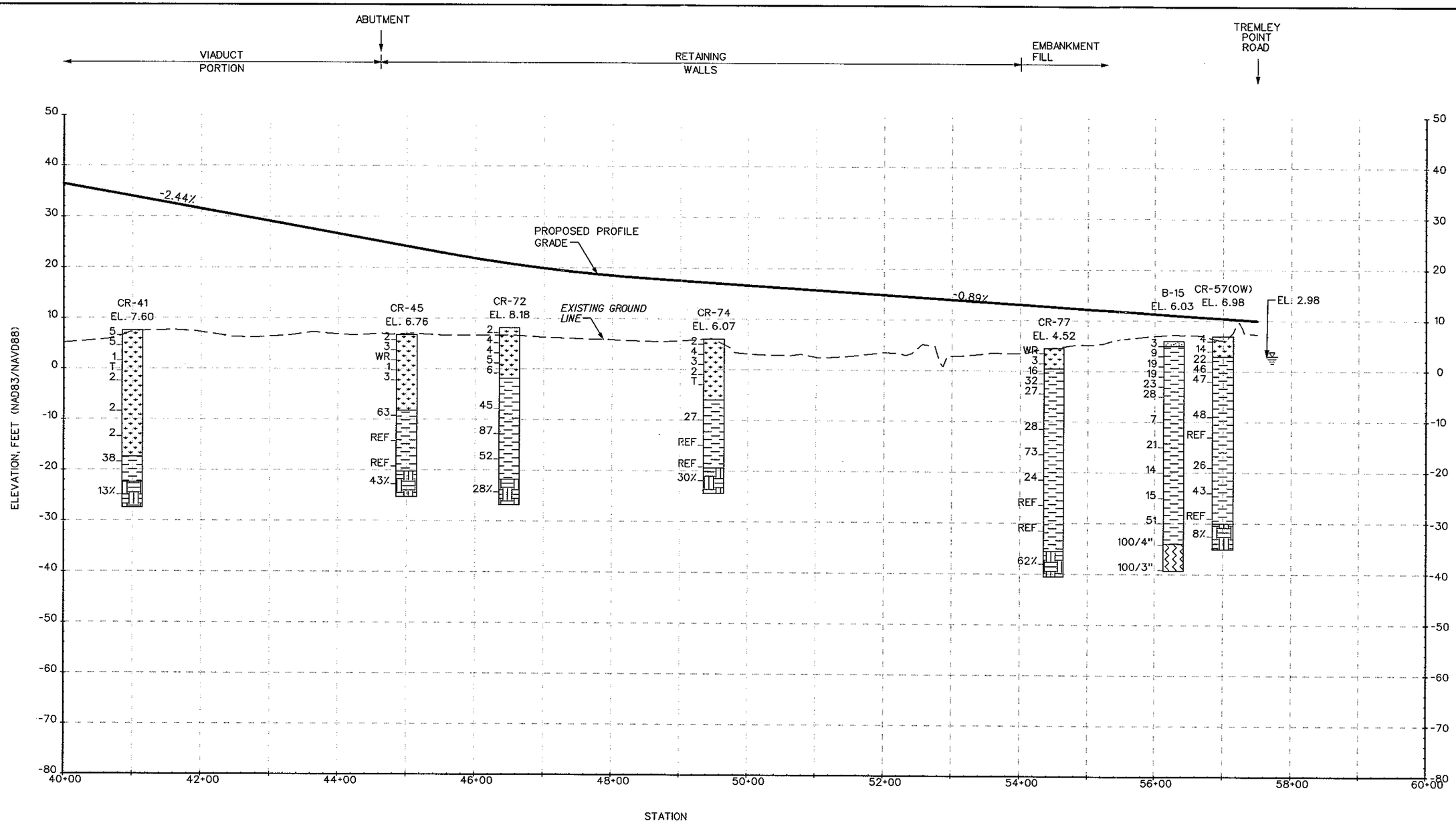
INTERCHANGE 12 IMPROVEMENTS

TREMLEY POINT CONNECTOR ROAD
SOIL PROFILE - ALTERNATE 7
PHASE I BORING PROGRAM

EDWARDS AND KELCEY, INC.
299 MADISON AVE., MORRISTOWN, NEW JERSEY

SCALE: H: 1" = 300'
V: 1" = 10'
DATE: JULY 2008

FIG. 6



LEGEND

FILL	
ORGANIC DEPOSITS	
GLACIAL ALLUVIAL DEPOSITS	
DECOMPOSED ROCK	
ROCK	
12	SPT N-VALUE
73%	RQD VALUE
(OW)	INDICATES OBSERVATION WELL
WH	INDICATES WEIGHT OF HAMMER
WR	INDICATES WEIGHT OF RODS
▽	INDICATES MEASURED HIGH AND LOW WATER LEVEL

0 ½ 1 2
ORIGINAL SIZE IN INCHES

	BY	DATE
MADE		
TRACED		
CHECKED		
SUPERVISED		

No.	DATE	REVISION

NEW JERSEY TURNPIKE AUTHORITY

NEW JERSEY TURNPIKE

INTERCHANGE 12 IMPROVEMENTS

TREMLEY POINT CONNECTOR ROAD
SOIL PROFILE - PREFERRED ALTERNATE
PHASE I BORING PROGRAM

EDWARDS AND KELCEY, INC.
299 MADISON AVE., MORRISTOWN, NEW JERSEY

SCALE: H: 1" = 300'
V: 1" = 10'
DATE: JULY 2008

FIG. 5

27-JUL-2008 11:14
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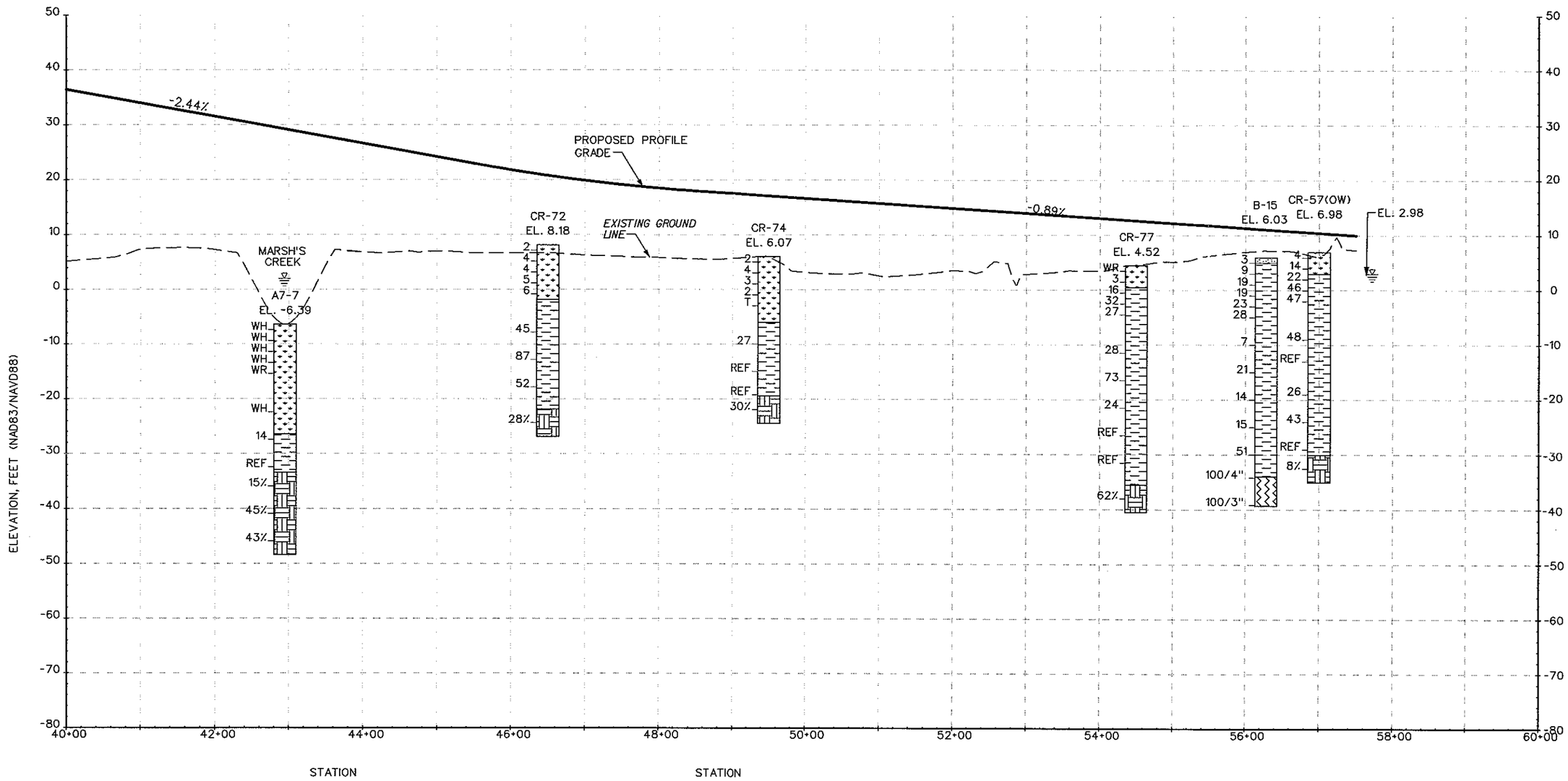

LEGEND

	FILL	12	SPT N-VALUE
	ORGANIC DEPOSITS	73%	RQD VALUE
	GLACIAL ALLUVIAL DEPOSITS	(OW)	INDICATES OBSERVATION WELL
	DECOMPOSED ROCK	WH	INDICATES WEIGHT OF HAMMER
	ROCK	WR	INDICATES WEIGHT OF RODS
			INDICATES MEASURED HIGH AND LOW WATER LEVEL

0 1/2 1 2

ORIGINAL SIZE IN INCHES

	BY	DATE
MADE		
TRACED		
CHECKED		
SUPERVISED		

No.	DATE	REVISION

NEW JERSEY TURNPIKE AUTHORITY

NEW JERSEY TURNPIKE

INTERCHANGE 12 IMPROVEMENTS

TREMLEY POINT CONNECTOR ROAD
SOIL PROFILE - ALTERNATE 7
PHASE I BORING PROGRAM

EDWARDS AND KELCEY, INC.
299 MADISON AVE., MORRISTOWN, NEW JERSEY

SCALE: H: 1" = 300'
V: 1" = 10'
DATE: JULY 2008

FIG. 7

27-JUL-2006 11:16
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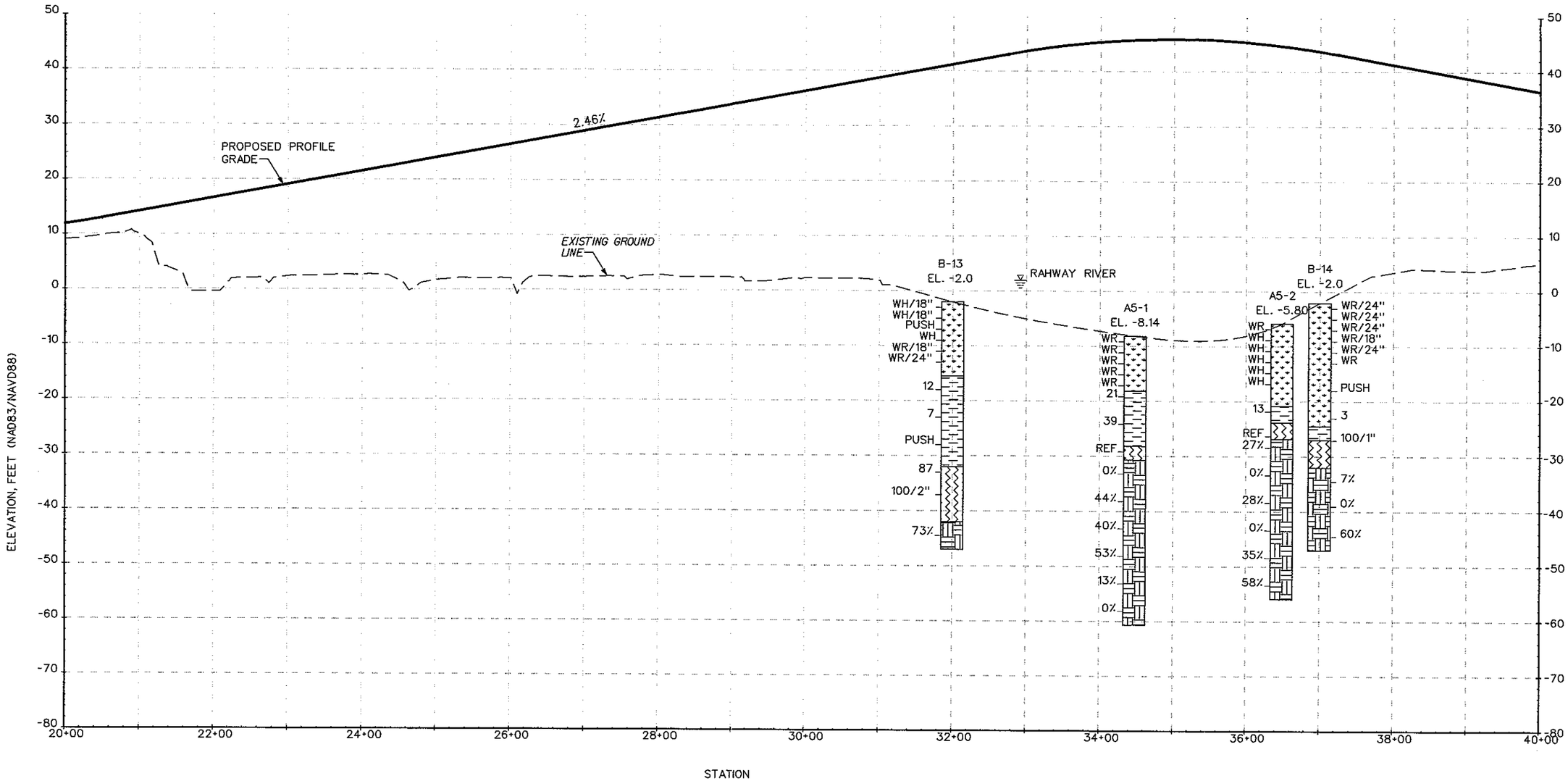


LEGEND

FILL	
ORGANIC DEPOSITS	
GLACIAL ALLUVIAL DEPOSITS	
DECOMPOSED ROCK	
ROCK	

12	SPT N-VALUE
73%	RQD VALUE
(OW)	INDICATES OBSERVATION WELL
WH	INDICATES WEIGHT OF HAMMER
WR	INDICATES WEIGHT OF RODS
▽	INDICATES MEASURED HIGH AND LOW WATER LEVEL

0 ½ 1 2

ORIGINAL SIZE IN INCHES

	BY	DATE
MADE		
TRACED		
CHECKED		
SUPERVISED		

No.	DATE	REVISION

NEW JERSEY TURNPIKE AUTHORITY

NEW JERSEY TURNPIKE

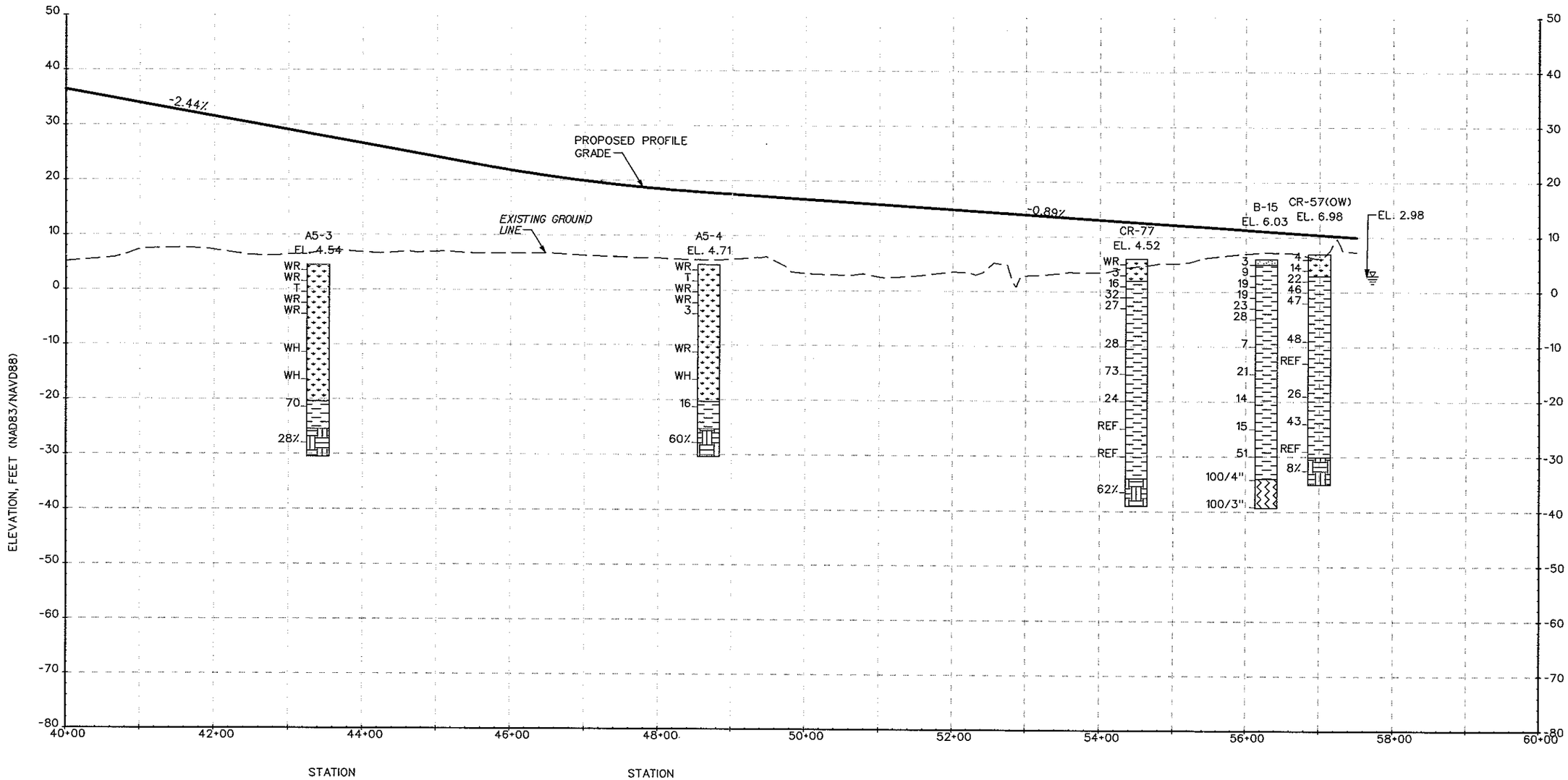
INTERCHANGE 12 IMPROVEMENTS

TREMLEY POINT CONNECTOR ROAD
SOIL PROFILE - ALTERNATE 5
PHASE I BORING PROGRAM

EDWARDS AND KELCEY, INC.
299 MADISON AVE., MORRISTOWN, NEW JERSEY

SCALE: H: 1" = 300'
V: 1" = 10'
DATE: JULY 2008

FIG. 8



LEGEND

	FILL	12	SPT N-VALUE
	ORGANIC DEPOSITS	73%	RQD VALUE
	GLACIAL ALLUVIAL DEPOSITS	(OW)	INDICATES OBSERVATION WELL
	DECOMPOSED ROCK	WH	INDICATES WEIGHT OF HAMMER
	ROCK	WR	INDICATES WEIGHT OF RODS
			INDICATES MEASURED HIGH AND LOW WATER LEVEL

0 ½ 1 2

ORIGINAL SIZE IN INCHES

	BY	DATE
MADE		
TRACED		
CHECKED		
SUPERVISED		

No.	DATE	REVISION

NEW JERSEY TURNPIKE AUTHORITY

NEW JERSEY TURNPIKE

INTERCHANGE 12 IMPROVEMENTS

TREMLEY POINT CONNECTOR ROAD
SOIL PROFILE - ALTERNATE 5
PHASE I BORING PROGRAM

EDWARDS AND KELCEY, INC.
299 MADISON AVE., MORRISTOWN, NEW JERSEY

SCALE: H: 1"=300'
V: 1"=10'
DATE: JULY 2008

FIG. 9

27-AUG-2008 11:14
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New Jersey Turnpike Authority

INTERCHANGE 12 IMPROVEMENTS

TREMLEY POINT CONNECTOR ROAD
PHASE-I GEOTECHNICAL REPORT

APPENDIX A

Logs of Test Borings

Boring No.: E-1
Sheet No.: 1

Tremley Point Connector Road
Edwards & Kelcey

Warren George

CONTRACT NO _____ PURPOSE _____ STRUCTURE NO. _____
LOCATION Station _____ offset _____ RDWY _____

RIG No.	1	TYPE	CME-750	DRILLER	Tony	HELPERS	Jay
DATE	11/10/2005						
TIME STARTED	8:45AM						
TIME FINISHED	11/14/2005						
WEATHER	Clear						
DEPTH REACHED	45.0 ft						

GROUND ELEVATION 4.28 ft M.L.W. ELEVATION _____
ZERO OF BORING LOG _____ ELEVATION GROUNDWATER _____

PAY QUANTITIES

LINEAL FEET OF BORING					SAMPLES			LIN. FT. OF ROCK CORE		
					ORDINARY DRY	UNDIST. DRY				
ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM

	UNIT WEIGHT		SIZE	WEIGHT OF HAMMER		AVG. FALL
CASING			15' of 4" diameter	140 lbs		30 inches
ORDINARY DRY SAMPLES		O.D.:	I.D.:	140 lbs		
UNDISTURBED SAMPLES		TYPE:		LENGTH	O.D.:	I.D.:

GROUNDWATER READINGS
DATE 11/10/2005
TIME 9:15
DEPTH 2.5'

GENERAL REMARKS _____

INSPECTOR: Bob Pace RESIDENT ENGINEER: _____

Boring No.: E-1
Sheet No.: 2

Tremley Point Connector Road

CONTRACT NO _____ PURPOSE _____

Elev. 4.28	Blows on Spoon for 6" Penetration		Sample No.	Sample Depth	Log	Materials & Remarks	recovery:
	3	8	S-1	6'-2'		Brown coarse to fine SAND, some fine Gravel	12 inches
	34	25				some Silt, black ASPHALT	
	40	24	S-2	2'-4'		Dark brown coarse to fine SAND, some Silt	14 inches
	9	6				some concrete/glass	
	2	3	S-3	4'-6'	5.0 ft	Brown/Gray coarse to fine SAND, some Clay	20 inches
	2	3			6.0 ft	Gray dark gray CLAY, trace fine Sand	
	10	16	S-4	6'-8'	7.0 ft	Brown/Gray coarse to fine SAND, some Clay, some fine Gravel	
	24	24			8.0 ft	Gray CLAY, trace coarse to fine Sand	20 inches
	5	1	S-5	8'-10'		PEAT, some Clay	20 inches
	2	4			10.0 ft		
					15.0 ft		
	12	13	S-6	15'-17'		Brown coarse to fine SAND, some Silt	22 inches
	12	12					
					20.0 ft		
	5	9	S-7	20'-22'		Brown SILT, some fine Gravel,	18 inches
	15	21				trace coarse to fine Sand	
	18	30	S-8	25'-27'		Brown SILT, some fine to coarse Gravel	12 inches
	59	50/2"				little coarse to fine Sand	
	17	58	S-9	30'-32'		Dark brown coarse to fine SAND, some Silt,	14 inches
	38	31				little coarse to fine Gravel	
	50/2'		S-10	35'-37'		Coarse to fine GRAVEL, some Silt,	7 inches
						little coarse to fine Sand	
					40.0 ft		
			RC-1	40'-45'		Red Brown moderately weathered, very closely	49 inches
						to closely fractured SHALE	
						REC: 82%	
						RQD: 30%	
					45.0 ft		
						Boring E-1 completed @ 45' on 11/14/05	

Boring No.: E-2
Sheet No.: 1

Tremley Point Connector Road
Edwards & Kelcey

Warren George

CONTRACT NO _____ PURPOSE _____ STRUCTURE NO. _____
LOCATION Station 36+00 offset 250' RT RDWY _____

RIG No.	2	TYPE	CME-750	DRILLER	Rob	HELPERS	Charlie
DATE	11/8/2005						
TIME STARTED	11/8/2005 8:00						
TIME FINISHED	11/9/2005 1:25						
WEATHER	Sunny to cloudy						
DEPTH REACHED	60.0 ft						

GROUND ELEVATION 4.41 ft M.L.W. ELEVATION _____
ZERO OF BORING LOG _____ ELEVATION GROUNDWATER _____

PAY QUANTITIES

LINEAL FEET OF BORING					SAMPLES			LIN. FT. OF ROCK CORE		
					ORDINARY DRY	UNDIST. DRY				
ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM

	UNIT WEIGHT		SIZE	WEIGHT OF HAMMER		AVG. FALL
CASING				140 lbs		30 inches
ORDINARY DRY SAMPLES		O.D.:	I.D.:	140 lbs		30 inches
UNDISTURBED SAMPLES		TYPE:	Shelby	LENGTH	24 O.D.:	I.D.:

GROUNDWATER READINGS

DATE	11/8/2005	11/8/2005	11/9/2005
TIME	8:10	10:40	7:40
DEPTH	2'	0.5'	0.5'

GENERAL REMARKS _____

INSPECTOR: Lee Paltingca RESIDENT ENGINEER: _____

Boring No.: E-2
Sheet No.: 2

Tremley Point Connector Road

CONTRACT NO PURPOSE

Elev. 4.41	Blows on Spoon for 6" Penetration		Sample No.	Sample Depth	Log	Materials & Remarks	recovery:
	2	2	S-1	0'-2'		Red brown SILT, little coarse to fine Sand, trace	8 inches
	4	10				coarse gravel	
	8	11	S-2	2'-4'		Black SILT, little Wood, trace coarse to fine	8 inches
	10	24				Sand	
	11	9	S-3	4'-6'		Blck SILT, trace organics, trace coares to fine	6 inches
	10	12				Sand, trace fine Gravel	
	8	8	S-4	6'-8'		Dark brown coarse to fine SAND, little Silt, trace	12 inches
	10	11			8.0 ft	Wood	
	1	1	S-5	8'-10'		Dark brown PEAT, trace Silt	3 inches
	WH	WH					
	WH	WH	S-6	10'-12'		Dark Brown PEAT, trace Silt	2 inches
	WH	WH			12.0 ft		
	-	-	ST-1	12'-14'		Dark brown CLAY, some Peat, trace Silt	24 inches
	-	-			14.0 ft		
	WH	1	S-7	14'-16'		Dark brown SILT, trace fine Sand, trace Clay	24 inches
	1	1					
	3	3	S-8	16'-18'		Gray brown SILT, little fine Sand, trace Clay	24 inches
	5	9					
	6	9	S-9	20'-22'		Red brown SILT, little fine Sand, trace Clay	16 inches
	10	12					
					25.0 ft		
	11	12	S-10	25'-27'		Red brown coarse to fine SAND, some Silt,	12 inches
	18	25				trace fine Gravel	
	11	14	S-11	30'-32'		Gray brown fine SAND, some Silt, trace fine	16 inches
	44	50/4"				Gravel	
					35.0 ft		
	37	50/3"	S-12	35'-37'		Gray brown SILT, some fine Sand, trace Clay,	10 inches
						trace fine Gravel	
					40.0 ft		
	100/4"		S-13	40'-42'		Red brown highly weathered SHALE	3 inches
					45.0 ft		
	50/3"		S-14	45'-47'		Red brown SILT, some fine Gravel, trace fine	2 inches
						Sand	

Boring No.: E-2
Sheet No.: 3

Tremley Point Connector Road

CONTRACT NO _____ PURPOSE _____

Elev.	Blows on Spoon for 6" Penetration		Sample No.	Sample Depth	Log	Materials & Remarks	recovery:
	50/2"		S-15	50'-52'		Red brown highly weathered SHALE	2 inches
					55.0 ft		
			RC-1	55'-60'		Red bronw slightly weathered, closely to medium	50 inches
						fractured SHALE	
						REC: 83%	
						RQD: 79%	
					60.0 ft		
						Boring E-2 completed @ 60' on 11/9/05	

Boring No.: E-3
Sheet No.: 1

Tremley Point Connector Road
Edwards & Kelcey

Warren George

CONTRACT NO _____ PURPOSE _____ STRUCTURE NO. _____
LOCATION Station _____ offset _____ RDWY _____

RIG No.	1	TYPE	CME-750	DRILLER	Tony	HELPERS	Jay
DATE	11/8/2005						
TIME STARTED	8:00 AM						
TIME FINISHED	11/9/2005 11:02						
WEATHER	Clear						
DEPTH REACHED	50.5 ft						

GROUND ELEVATION 4.43 ft M.L.W. ELEVATION _____
ZERO OF BORING LOG _____ ELEVATION GROUNDWATER _____

PAY QUANTITIES

LINEAL FEET OF BORING					SAMPLES			LIN. FT. OF ROCK CORE		
					ORDINARY DRY	UNDIST. DRY				
ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM

	UNIT WEIGHT	SIZE	WEIGHT OF HAMMER	AVG. FALL
CASING		15' of 4" diameter	140 lbs	30 inches
ORDINARY DRY SAMPLES	O.D.:	I.D.:	140 lbs	30 inches
UNDISTURBED SAMPLES	TYPE:		LENGTH	O.D.: I.D.:

GROUNDWATER READINGS
DATE 11/8/2005
TIME 9:00
DEPTH 3.5'

GENERAL REMARKS _____

INSPECTOR: Bob Pace RESIDENT ENGINEER: _____

Boring No.: E-3
Sheet No.: 2

Tremley Point Connector Road

CONTRACT NO _____ PURPOSE _____

Elev. 4.43	Blows on Spoon for 6" Penetration		Sample No.	Sample Depth	Log	Materials & Remarks Topsoil	recovery:
	3	15	S-1	0'-2'		Brown coarse to fine SAND, some coarse to	20 inches
	39	23				fine Gravel, some Silt	
	15	104	S-2	2'-4'		Black coarse to fine SAND, some fine Gravel,	8 inches
	-	-				some Silt, concrete	
	11	4	S-3	4'-6'		Black coarse to fine Gravel, little coarse to fine	6 inches
	2	2				Sand, trace Silt	
	1	1	S-4	6'-8'		Black coarse to fine Gravel, little coarse to fine	24 inches
	1	1			8.0 ft	Sand, trace Silt	
	2	2	S-5	8'-10'		Brown PEAT	24 inches
	2	2					
	1	1	S-6	15'-17'		Brown PEAT, some Clay	24 inches
	WH	WH					
					20.0 ft		
	1	4	S-7	20'-22'		Brown CLAY, some coarse to fine Gravel, trace	12 inches
	7	10				coarse to fine Sand	
	13	18	S-8	25'-27'		Brown CLAY, some coarse to fine Gravel, trace	10 inches
	18	20				coarse to fine Sand	
					30.0 ft		
	16	45	S-9	30'-32'		Gray/Brown fine to medium SAND, trace	20 inches
	55	98				Silt	
	105/4"	R	S-10	35'-37'		Dark brown/Gray fine SAND, trace Silt	6 inches
	50	100/4"	S-11	40'-42'		Gray/Red brown coarse to fine SAND,	14 inches
						some Silt	
					44.0 ft		
	100/5"	R	S-12	45'-45.5'	45.5 ft	Red brown moderately weathered SANDSTONE	5 inches
			RC-1	45.5'-50.5'		Red brown moderately weathered, closely	48 inches
						fractured SANDSTONE	
						REC: 80%	
						RQD: 43%	

Boring No.: E-3
Sheet No.: 3

Tremley Point Connector Road

CONTRACT NO _____ PURPOSE _____

Elev.	Blows on Spoon for 6" Penetration		Sample No.	Sample Depth	Log	Materials & Remarks recovery:
					50.5 ft	
						Boring E-3 completed @ 50.5' on 11/9/05

Boring No.: CR-1
Sheet No.: 1

Tremley Point Connector Road
Edwards & Kelcey

Warren George

CONTRACT NO _____ PURPOSE _____ STRUCTURE NO. _____

LOCATION Station 1+50 Original location offset to Sta. 2+27 RDWY _____

RIG No.	2	TYPE	ACKER AD-2	DRILLER	Rob	HELPERS	Charlie
DATE		12/27/2005					
TIME STARTED		9:35 A.M.					
TIME FINISHED							
WEATHER							
DEPTH REACHED							

GROUND ELEVATION 7.50 ft M.L.W. ELEVATION _____
ZERO OF BORING LOG _____ ELEVATION GROUNDWATER _____

PAY QUANTITIES

LINEAL FEET OF BORING					SAMPLES			LIN. FT. OF ROCK CORE		
					ORDINARY DRY	UNDIST. DRY				
ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM

	UNIT WEIGHT		SIZE	WEIGHT OF HAMMER		AVG. FALL
CASING			10 inches	140 lbs		30 inches
ORDINARY DRY SAMPLES		O.D.:	I.D.:	140 lbs		30 inches
UNDISTURBED SAMPLES		TYPE:	none	LENGTH	O.D.:	I.D.:

GROUNDWATER READINGS

DATE	12/27/2005	12/29/2005	02/092006
TIME	9:00 A.M.		
DEPTH	3.25'	5.0'	3.6'

GENERAL REMARKS Note 1: CR-1 moved to sta 2+27 due to existing conditions.
The original location is within underground pipelines. Due to overhead power lines, the boring could not be drilled on the south side of the access road.
Boring moved to the north side of the main access road.

Note 2: Observation well (OW) installed with flush cover.
Well consists of 2 " diameter PVC. Well extends to a depth of 20 feet

*Contractor did not continue driving when he encountered obstruction.
Call KM for assurance before proceding.

INSPECTOR: Lee Paltingca RESIDENT ENGINEER: _____

Boring No.: CR-1
Sheet No.: 2

Tremley Point Connector Road

CONTRACT NO _____ PURPOSE _____

Elev. 7.5	Blows on Spoon for 6" Penetration		Sample No.	Sample Depth	Log	Materials & Remarks	recovery:
	6	7	S-1	0'-2'		Brown coarse to fine SAND, some Silt, trace fine	14 inches
	9	5				Gravel, trace Wood, trace Bricks	
	3	7	S-2	2'-4'		Brown coarse to fine SAND, some Silt, trace	6 inches
	-	-				Brick, trace Wood	
	5	2	S-3	5'-7'		(No Recovery)	0 inches
	3	2					
	4	6	S-4	7'-9'		Brown coarse to fine organic SAND, little Silt,	4 inches
	9	9			9.0 ft	trace Cinder, trace f Gravel	
	6	8	S-5	9'-11'		Red brown SILT, little coarse to	18 inches
	13	17				fine Sand	
	9	12	S-6	15'-17'		Red brown SILT, trace fine Sand	20 inches
	16	13					
					20.0 ft		
	14	25	S-7	20'-22'		Red brown coarse to fine SAND, little Silt, trace	18 inches
	40	40				fine Gravel	
	26	34	S-8	25'-30'		Red brown coarse to fine SAND, little Silt, trace	16 inches
	44	42				fine Gravel	
	50/1	-	S-9	30'-32'		Red brown coarse to fine SAND, some Silt	1.0 inches
	-	-				with coarse Gravel	
					35.3 ft		
	100/0-25"		S-10	35'-37'		Brown slightly weathered, closely fractured	40 inches
						SHALE	
						REC: 67%	
						RQD: 53%	
					40.3 ft		
						Boring CR-1 completed @ 40.3' on 12/27/05	

Boring No.: CR-5
Sheet No.: 1

Tremley Point Connector Road
Edwards & Kelcey

Warren George

CONTRACT NO _____ PURPOSE _____ STRUCTURE NO. _____
LOCATION Station _____ offset _____ RDWY _____

RIG No.		TYPE		DRILLER		HELPERS	
DATE							
TIME STARTED	1/9/2006						
TIME FINISHED	1/9/2006						
WEATHER							
DEPTH REACHED	37.0 ft						

GROUND ELEVATION 2.30 ft M.L.W. ELEVATION _____
ZERO OF BORING LOG _____ ELEVATION GROUNDWATER _____

PAY QUANTITIES

LINEAL FEET OF BORING					SAMPLES			LIN. FT. OF ROCK CORE		
					ORDINARY DRY	UNDIST. DRY				
ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM

		UNIT WEIGHT	SIZE	WEIGHT OF HAMMER		AVG. FALL
CASING				140 lbs		30 inches
ORDINARY DRY SAMPLES	O.D.:		I.D.:	140 lbs		30 inches
UNDISTURBED SAMPLES	TYPE:			LENGTH	O.D.:	I.D.:

GROUNDWATER READINGS
DATE 1/9/2006
TIME
DEPTH 1'

GENERAL REMARKS _____

INSPECTOR: Robert Pace RESIDENT ENGINEER: _____

Boring No.: CR-5
Sheet No.: 2

Tremley Point Connector Road

CONTRACT NO _____ PURPOSE _____

Elev. 2.3	Blows on Spoon for 6" Penetration		Sample No.	Sample Depth	Log	Materials & Remarks	recovery:
	WR	WR	S-1	0'-2'		Brown organic SILT, little coarse to fine Sand	3 inches
	WR	WR					
	WR	WR	S-2	2'-4'		No recovery	0 inches
	WR	WR					
	WR	WR	S-3	4'-6'		No recovery	0 inches
	WR	WR			6.0 ft		
	WR	WR	S-4	6'-8'		Brown SILT, little coarse to fine Sand	10 inches
	4	5					
	4	7	S-5	8'-10'		Brown SILT, little coarse to fine Sand	14 inches
	7	12					
	7	14	S-6	15'-17'		Brown SILT, some fine Gravel, little coarse to	24 inches
	16	21				fine Sand	
	9	10	S-7	20'-22'		Brown SILT, trace medium to fine Sand, trace	12 inches
	13	14				fine Gravel	
	59	27	S-8	25'-27'		Brown/Gray SILT, little fine Gravel, trace coarse	13 inches
	50/2"					to fine Sand	
	34	100/3"	S-9	30'-32'		Brown/Gray SILT, some fine Gravel, little coarse	9 inches
					32.0 ft	to fine Sand	
			RC-1	32'-37'		Red brown closley to medium jointed, slightly	50 inches
						weathered SHALE	
						REC: 83%	
						RQD: 67%	
					37.0 ft		
						Boring CR-5 completed @ 37' on 1/9/06	

Boring No.: CR-10
Sheet No.: 1

Tremley Point Connector Road
Edwards & Kelcey

Warren George

CONTRACT NO _____ PURPOSE _____ STRUCTURE NO. _____
LOCATION Station _____ offset _____ RDWY _____

RIG No.		TYPE		DRILLER		HELPERS	
DATE							
TIME STARTED	1/6/2006						
TIME FINISHED	1/6/2006						
WEATHER							
DEPTH REACHED	45.0 ft						

GROUND ELEVATION 2.40 ft M.L.W. ELEVATION _____
ZERO OF BORING LOG _____ ELEVATION GROUNDWATER _____

PAY QUANTITIES										
LINEAL FEET OF BORING					SAMPLES			LIN. FT. OF ROCK CORE		
					ORDINARY DRY	UNDIST. DRY				
ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM

	UNIT WEIGHT		SIZE	WEIGHT OF HAMMER		AVG. FALL
CASING						
ORDINARY DRY SAMPLES		O.D.:	I.D.:			
UNDISTURBED SAMPLES		TYPE:		LENGTH	O.D.:	I.D.:

GROUNDWATER READINGS
DATE 1/6/2006
TIME
DEPTH 3'

GENERAL REMARKS _____

INSPECTOR: Robert Pace RESIDENT ENGINEER: _____

Boring No.: CR-10
Sheet No.: 2

Tremley Point Connector Road

CONTRACT NO _____ PURPOSE _____

Elev. 2.4	Blows on Spoon for 6" Penetration		Sample No.	Sample Depth	Log	Materials & Remarks	recovery:
	WR	WR	S-1	0'-2'		No recovery	0 inches
	WR	WR					
	WR	WR	S-2	2'-4'		No recovery	0 inches
	WR	WR					
	WR	WR	S-3	4'-6'		No recovery	0 inches
	WR	WR					
	WR	WR	S-4	6'-8'		Gray SILT, trace coarse to fine Sand	24 inches
	WR	WR					
			ST-1	8'-10'		Gray SILT, trace coarse to fine Sand	24 inches
					10.0 ft		
	15	24	S-5	10'-12'		Gray SILT, trace coarse to fine Sand	24 inches
	19	28					
	10	11	S-6	15'-17'		Brown SILT, trace coarse to fine Sand	13 inches
	13	21					
	10	12	S-7	20'-22'		Brown SILT, trace coarse to fine Sand	12 inches
	19	21					
	14	16	S-8	25'-27'		Brown SILT, trace coarse to fine Sand, trace	12 inches
	22	20				fine Gravel	
	45	40	S-9	30'-32'		Brown SILT, some coarse to fine Sand, little	18 inches
	50	50/4"				fine Gravel	
	22	32	S-10	35'-37'		Brown SILT, some coarse to fine Sand, little	14 inches
	60	50/2"				fine Gravel	
					40.0 ft		
			RC-1	40'-45'		Red brown very closely to closely jointed,	43 inches
						slightly weathered SHALE	
						REC: 72%	
						RQD: 55%	
					45.0 ft		
						Boring CR-10 completed @ 45' on 1/6/06	

Boring No.: CR-22
Sheet No.: 1

Tremley Point Connector Road
Edwards & Kelcey

Warren George

CONTRACT NO _____ PURPOSE _____ STRUCTURE NO. _____
LOCATION Station 23+00 offset _____ RDWY _____

RIG No.	1	TYPE	CME 750	DRILLER	Dave	HELPERS	Louis
DATE	11/18/2005						
TIME STARTED	11/18/2005 1:00						
TIME FINISHED	11/21/2005 2:00						
WEATHER	Clear 40's						
DEPTH REACHED	36'						

GROUND ELEVATION 2.42 ft M.L.W. ELEVATION _____
ZERO OF BORING LOG _____ ELEVATION GROUNDWATER _____

PAY QUANTITIES

LINEAL FEET OF BORING					SAMPLES			LIN. FT. OF ROCK CORE		
					ORDINARY DRY	UNDIST. DRY				
ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM

	UNIT WEIGHT		SIZE	WEIGHT OF HAMMER		AVG. FALL
CASING			10' of 5"diameter	140 lbs		30 inches
ORDINARY DRY SAMPLES		O.D.:	I.D.:	140 lbs		30 inches
UNDISTURBED SAMPLES		TYPE:		LENGTH	O.D.:	I.D.:

GROUNDWATER READINGS
DATE 11/18/2005
TIME 1:30
DEPTH 1'

GENERAL REMARKS _____

INSPECTOR: Robert Pace RESIDENT ENGINEER: _____

Boring No.: CR-22
Sheet No.: 2

Tremley Point Connector Road

CONTRACT NO PURPOSE

Elev. 2.42	Blows on Spoon for 6" Penetration		Sample No.	Sample Depth	Log	Materials & Remarks	recovery:
	WH	WH	S-1	0'-2'		No recovery	0 inches
	WH	WH					
	WH	WH	S-2	2'-4'		No recovery	0 inches
	WH	WH					
	WH	WH	S-3	4'-6'		No recovery	0 inches
	WH	WH			6.0 ft		
	WH	WH	S-4	6'-8'		Dark brown CLAY and PEAT	8 inches
	WH	WH			8.0 ft		
	WH	WH	S-5	8'-10'		Black PEAT, some Clay	12 inches
	WH	WH			10.0 ft	Clay	
	8	9	S-6	15'-17'		Red brown SILT, little fine Sand	14 inches
	13	13					
	6	8	S-7	20'-22'		Red brown SILT, little coarse to fine Gravel,	9 inches
	12	25				trace fine Sand	
	3	6	S-8	25'-27'		Red brown SILT, some coarse to fine Sand	8 inches
	13	17				little fine Gravel	
					30.0 ft		
	3	28	S-9	30'-32'	31.0 ft	Red brown coarse to fine SAND, little fine Gravel	10 inches
	50/0"	-	CS-1	31'-36'		Red brown moderately weathered, closely	60 inches
						fractured SHALE	
						REC: 100%	
						RQD: 52%	
					36.0 ft		
						Boring CR-22 completed @ 36' on 11/21/05	

Boring No.: CR-24
Sheet No.: 1

Tremley Point Connector Road
Edwards & Kelcey

Warren George

CONTRACT NO _____ PURPOSE _____ STRUCTURE NO. _____
LOCATION Station 25+00 offset _____ RDWY _____

RIG No.	2	TYPE		DRILLER	Rob	HELPERS	Charlie
DATE	11/16/2005						
TIME STARTED	11/16/2005						
TIME FINISHED	11/17/2005						
WEATHER							
DEPTH REACHED	39.0 ft						

GROUND ELEVATION 2.03 ft M.L.W. ELEVATION _____
ZERO OF BORING LOG _____ ELEVATION GROUNDWATER _____

PAY QUANTITIES

LINEAL FEET OF BORING					SAMPLES			LIN. FT. OF ROCK CORE		
					ORDINARY DRY	UNDIST. DRY				
ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM

		UNIT WEIGHT	SIZE	WEIGHT OF HAMMER		AVG. FALL
CASING			15' of 4" diameter	140 lbs		30 inches
ORDINARY DRY SAMPLES	O.D.:		I.D.:	140 lbs		30 inches
UNDISTURBED SAMPLES	TYPE:		Shelby Tube	LENGTH	24 O.D.:	I.D.:

GROUNDWATER READINGS
DATE 11/16/2005
TIME
DEPTH 1'

GENERAL REMARKS _____

INSPECTOR: Rob Pace RESIDENT ENGINEER: _____

Boring No.: CR-24
Sheet No.: 2

Tremley Point Connector Road

CONTRACT NO _____ PURPOSE _____

Elev. 2.03	Blows on Spoon for 6" Penetration		Sample No.	Sample Depth	Log	Materials & Remarks	recovery:
	WH	WH	S-1	0'-2'		No recovery	0 inches
	WH	WH					
	WH	WH	S-2	2'-4'		Peat and CLAY	8 inches
	WH	WH					
	WH	WH	S-3	4'-6'		Peat and CLAY	20 inches
	WH	WH			6.0 ft		
			TS-1	6'-8'		Gray CLAY	24 inches
					10.0 ft		
	WR	WR	S-4	10'-12'		Brown PEAT	6 inches
	WR	WR			12.0 ft		
	3	4	S-5	15'-17'		Red brown SILT, some coarse to fine	12 inches
	6	4				Sand	
	4	6	S-6	20'-22'		Red brown SILT, some coarse to fine	14 inches
	16	16				Sand	
	10	18	S-7	25'-27'		Red brown SILT, some coarse to fine	10 inches
	33	30				Sand	
	18	37	S-8	30'-32'		Red brown SILT, some coarse to fine	4 inches
	50/3"					Sand	
					34.0 ft		
			CS-1	34'-39'		Red brown slightly weathered, closely	47 inches
						fractured SHALE	
						REC: 78%	
						RQD: 72%	
					39.0 ft		
						Boring CR-24 completed @ 39' on 11/17/05	

Boring No.: CR-26
Sheet No.: 1

Tremley Point Connector Road
Edwards & Kelcey

Warren George

CONTRACT NO _____ PURPOSE _____ STRUCTURE NO. _____
LOCATION Station _____ offset _____ RDWY _____

RIG No.	2	TYPE	CME 750	DRILLER	Rob	HELPERS	Charlie
DATE	11/18/2005						
TIME STARTED	11/18/2005 1:00						
TIME FINISHED	11/21/2005 2:00						
WEATHER	Clear 40's						
DEPTH REACHED	40'						

GROUND ELEVATION 2.34 ft M.L.W. ELEVATION _____
ZERO OF BORING LOG _____ ELEVATION GROUNDWATER _____

PAY QUANTITIES

LINEAL FEET OF BORING					SAMPLES			LIN. FT. OF ROCK CORE		
					ORDINARY DRY	UNDIST. DRY				
ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM

	UNIT WEIGHT		SIZE		WEIGHT OF HAMMER		AVG. FALL
CASING			10' of 4' diameter		140 lbs		30 inches
ORDINARY DRY SAMPLES		O.D.:	I.D.:		140 lbs		30 inches
UNDISTURBED SAMPLES		TYPE:			LENGTH	O.D.:	I.D.:

GROUNDWATER READINGS
DATE 11/18/2005
TIME 1:30
DEPTH 2'

GENERAL REMARKS _____

INSPECTOR: Robert Pace RESIDENT ENGINEER: _____

Boring No.: CR-26
Sheet No.: 2

Tremley Point Connector Road

CONTRACT NO _____ PURPOSE _____

Elev. 2.34	Blows on Spoon for 6" Penetration		Sample No.	Sample Depth	Log	Materials & Remarks	recovery:
	WH	WH	S-1	0'-2'		Dark brown PEAT and SILT, trace Clay	3 inches
	WH	WH					
	WH	WH	S-2	2'-4'		Dark brown PEAT and SILT, trace Clay	8 inches
	WH	WH			4.0 ft		
	WH	WH	S-3	4'-6'		Dark brown CLAY, some Peat, trace Silt	10 inches
	WH	WH			6.0 ft		
	WH	WH	S-4	6'-8'		Brown gray SILT, some Clay, some Organics	18 inches
	WH	WH					
	1	1	S-5	15'-17'		Gray brown SILT, some fine Sand, trace Clay	10 inches
	3	8					
	6	8	S-6	20'-22'		Red brown SILT, little fine Gravel, trace coarse	6 inches
	11	28				to fine Sand, trace Clay	
	7	50/3"	S-7	25'-27'		Red brown SILT, little coarse to fine Gravel, trace	12 inches
	-	-				coarse to fine Sand, trace Clay	
	19	25	S-8	30'-32'		Red brown SILT, little coarse to fine Gravel,	12 inches
	35	50/5"				trace coarse to fine Sand, trace Clay	
					35.0 ft		
			CS-1	35'-40'		Red brown moderately weathered, closely	41 inches
						fractured SHALE	
						REC: 68%	
						RQD: 58.3%	
					40.0 ft		
						Boring CR-26 completed @ 40' on 11/21/05	

Boring No.: CR-33
Sheet No.: 1

Tremley Point Connector Road
Edwards & Kelcey

Warren George

CONTRACT NO _____ PURPOSE _____ STRUCTURE NO. _____
LOCATION Station 34+00 offset 30' left RDWY _____

RIG No.		TYPE		DRILLER		HELPERS	
DATE	12/21/2005				
TIME STARTED	10:00				
TIME FINISHED	11:00 P.M on 12/22/05				
WEATHER					
DEPTH REACHED	59.0'				

GROUND ELEVATION -7.43 ft M.L.W. ELEVATION _____
ZERO OF BORING LOG _____ ELEVATION GROUNDWATER _____

PAY QUANTITIES

LINEAL FEET OF BORING					SAMPLES			LIN. FT. OF ROCK CORE		
					ORDINARY DRY	UNDIST. DRY				
ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM

	UNIT WEIGHT		SIZE	WEIGHT OF HAMMER		AVG. FALL
CASING				140 lbs		30 inches
ORDINARY DRY SAMPLES		O.D.:	I.D.:	140 lbs		30 inches
UNDISTURBED SAMPLES		TYPE:		LENGTH	O.D.:	I.D.:

GROUNDWATER READINGS
DATE 12/21/2005
TIME 10:00
DEPTH 0

GENERAL REMARKS _____

INSPECTOR: Bob Pace RESIDENT ENGINEER: _____

Boring No.: CR-33
Sheet No.: 2

Tremley Point Connector Road

CONTRACT NO PURPOSE

Elev. -7.43	Blows on Spoon for 6" Penetration		Sample No.	Sample Depth	Log	Materials & Remarks	recovery:
	WR	WR	S-1	0'-2'		Gray brown organic SILT, some Peat, little Clay,	10 inches
	WR	WR			2.0 ft	trace fine Sand	
	WR	WR	S-2	2'-4'		Gray brown organic CLAY and SILT, trace Peat	24 inches
	WR	WR			4.0 ft		
	WR	WR	S-3	4'-6'		Gray SILT, some Clay, trace fine Sand	24 inches
	WR	WR			6.0 ft		
	WR	WR	S-4	6'-8'		Gray organic CLAY, some Silt, trace fine Sand	18 inches
	WR	WR			8.0 ft		
	1	4	S-5	8'-10'		Gray coarse to fine SAND, some Silt, little Wood	24 inches
	8	9					
	10	10	S-6	10'-12'		Gray coarse to fine SAND, little Silt, trace medium	6 inches
	4	4				to fine Gravel	
	11	15	S-7	15'-17'		Red brown coarse to fine SAND, some Silt, little	8 inches
	16	65				coarse to fine Gravel	
					20.0 ft		
	40	32	S-8	20'-22'		Red brown coarse to fine GRAVEL and SILT,	12 inches
	46	31				some coarse to fine Sand	
	35	45	S-9	25'-27'		Red brown coarse to fine GRAVEL and SILT,	18 inches
	46	100/5"				some coarse to fine Sand	
					29.0 ft		
			RC-1	29'-34'		Red brown very closely to closely jointed, slightly	57 inches
						weathered SHALE	
						REC: 90%	
						RQD: 20%	
			RC-2	34'-39'		Red brown closely to medium jointed,	60 inches
						slighty weathered SHALE	
						REC: 100%	
						RQD: 48.3%	
			RC-3	39'-44'		Red brown very closely to closely jointed, slighty	59 inches
						weathered SHALE	
						REC: 98%	
						RQD: 8%	
			RC-4	44'-49'		Red brown closely to medium jointed, slightly	60 inches
						weathered SHALE	
						REC: 100%	
						RQD: 25%	
			RC-5	49'-54'		Red brown closely to medium jointed, slightly	60 inches

Boring No.: CR-33
Sheet No.: 3

Tremley Point Connector Road

CONTRACT NO _____ PURPOSE _____

Elev.	Blows on Spoon for 6" Penetration		Sample No.	Sample Depth	Log	Materials & Remarks	recovery:
						weathered SHALE	60 inches
						REC: 100%	
						RQD: 90%	
			RC-6	54'-59'		Red brown closely to medium jointed, slightly	59 inches
						weathered SHALE	
						REC: 98%	
						RQD: 85%	
					59.0 ft		
						Boring CR-33 completed @ 59' on 12/22/05	

Boring No.: CR-36
Sheet No.: 1

Tremley Point Connector Road
Edwards & Kelcey

Warren George

CONTRACT NO _____ PURPOSE _____ STRUCTURE NO. _____
LOCATION Station 36+30 offset 30' Rt. RDWY _____

RIG No.		TYPE	CME - 55	DRILLER	Bob	HELPERS	Lenny
DATE	12/28/05 (off-land)						
TIME STARTED	12/28/2005 9:40						
TIME FINISHED	12/30/2005 14:00						
WEATHER							
DEPTH REACHED	56.50'						

GROUND ELEVATION -7.70 ft M.L.W. ELEVATION _____
ZERO OF BORING LOG _____ ELEVATION GROUNDWATER _____

PAY QUANTITIES

LINEAL FEET OF BORING					SAMPLES			LIN. FT. OF ROCK CORE		
					ORDINARY DRY	UNDIST. DRY				
ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM

	UNIT WEIGHT		SIZE	WEIGHT OF HAMMER		AVG. FALL
CASING	25'		4.0"	140 lbs		push
ORDINARY DRY SAMPLES		O.D.:	I.D.:	140 lbs		30 inches
UNDISTURBED SAMPLES		TYPE:	Shelby Tube	LENGTH 24 inches	O.D.:	I.D.:

GROUNDWATER READINGS
DATE N/A
TIME
DEPTH

GENERAL REMARKS After the first core run (26.50-30.50) the bearing for the transmission to the drill shaft broke. Will dismantle today 12/28/05 and replace on 12/29/05

Depth of water at start was 2 feet.

INSPECTOR: Lee Paltingca RESIDENT ENGINEER: _____

Boring No.: CR-36
Sheet No.: 2

Tremley Point Connector Road

CONTRACT NO _____ PURPOSE _____

Elev. -7.7	Blows on Spoon for 6" Penetration		Sample No.	Sample Depth	Log	Materials & Remarks	recovery:
	WR	WR	S-1	0'-2'		Gray brown organic SILT, some Clay	3 inches
	WR	WR			2.0 ft		
	WR	WR	S-2	2'-4'		Gray brown organic CLAY, little Silt	8 inches
	WR	WR					
	-	-	ST-1	5'-7'		Gray CLAY and PEAT, trace Silt	24 inches
	-	-			7.0 ft		
	WR	WR	S-3	7'-9'		Gray brown SILT, some fine Sand	24 inches
	WR	WH					
					10.0 ft		
	8	8	S-4	10'-12'		Gray fine to coarse SAND, some coarse to fine	4 inches
	15	14				Gravel, trace Silt	
	14	20	S-5	15'-17'		Red brown Silt, some coarse to fine Sand, little	20 inches
	61	38			17.0 ft	coarse to fine Gravel	
	28	44	S-6	20'-22'		Red brown completely weathered SHALE	22 inches
	63	72					
	100/2"	-	S-7	25'-27'		Red brown highly weathered SHALE	1 inches
	-	-			26.5 ft		
			RC-1	26.5-31.5		Red brown very closely to medium jointed,	60 inches
						slightly weathered SHALE	
						REC: 100%	
						RQD: 41%	
			RC-2	31.5-36.5		Red brown very closely jointed, highly weathered	60 inches
						SHALE	
						REC: 100%	
						RQD: 48%	
			RC-3	36.5-41.5		Red brown closely to medium jointed,	60 inches
						slightly weathered SHALE	
						REC: 100%	
						RQD: 52%	
			RC-4	41.5-46.5		Red brown very closely to closely jointed, highly	60 inches
						weathered SHALE	
						REC: 100%	
						RQD: 52%	
			RC-5	46.5-51.5		Red brown very closely to medium jointed,	60 inches
						slightly weathered SHALE	
						REC: 100%	

Boring No.: CR-36
Sheet No.: 3

Tremley Point Connector Road

CONTRACT NO _____ PURPOSE _____

Elev.	Blows on Spoon for 6" Penetration		Sample No.	Sample Depth	Log	Materials & Remarks	recovery:
						RQD: 28%	
			RC-6	51.5-56.5		Red brown closely to medium jointed, slightly	58 inches
						weathered SHALE	
						REC: 97%	
						RQD: 43%	
					56.5 ft		
						Boring CR-36 completed @ 56.50' on 12/30/05	

Boring No.: CR-41
Sheet No.: 1

Tremley Point Connector Road
Edwards & Kelcey

Warren George

CONTRACT NO _____ PURPOSE _____ STRUCTURE NO. _____
LOCATION Station _____ offset _____ RDWY _____

RIG No.		TYPE		DRILLER		HELPERS	
DATE							
TIME STARTED	1/26/2006						
TIME FINISHED	1/27/2006						
WEATHER							
DEPTH REACHED	35.0 ft						

GROUND ELEVATION 7.60 ft M.L.W. ELEVATION _____
ZERO OF BORING LOG _____ ELEVATION GROUNDWATER _____

PAY QUANTITIES

LINEAL FEET OF BORING					SAMPLES			LIN. FT. OF ROCK CORE		
					ORDINARY DRY	UNDIST. DRY				
ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM

	UNIT WEIGHT		SIZE	WEIGHT OF HAMMER		AVG. FALL
CASING				140 lbs		30 inches
ORDINARY DRY SAMPLES		O.D.:	I.D.:	140 lbs		30 inches
UNDISTURBED SAMPLES		TYPE:		LENGTH	O.D.:	I.D.:

GROUNDWATER READINGS
DATE 1/26/2006
TIME
DEPTH 3'

GENERAL REMARKS _____

INSPECTOR: Robert Pace RESIDENT ENGINEER: _____

Boring No.: CR-41
Sheet No.: 2

Tremley Point Connector Road

CONTRACT NO _____ PURPOSE _____

Elev. 7.6	Blows on Spoon for 6" Penetration		Sample No.	Sample Depth	Log	Materials & Remarks	recovery:
	2	2	S-1	0'-2'		Black organic SILT, some fine Sand	8 inches
	3	2			2.0 ft		
	2	2	S-2	2'-4'		Black medium to fine SAND, some Silt	20 inches
	3	2					
					5.0 ft		
	2	1	S-3	5'-7'		Dark gray SILT, trace fine Sand, trace Clay	24 inches
	WR	1					
			ST-1	7'-9'		Dark gray SILT, trace fine Sand, trace Clay	24 inches
	1	1	S-4	9'-11'		Dark brown SILT & PEAT, trace fine Sand	24 inches
	1	1					
	1	1	S-5	15'-17'		Dark brown SILT, trace Peat, trace Clay	20 inches
	1	1					
	1	1	S-6	20'-22'		Dark brown SILT, some fine Sand, trace Clay	24 inches
	1	2					
					25.0 ft		
	9	13	S-7	25'-27'		Red brown SILT, some coarse to fine Sand,	9 inches
	25	30				little fine Gravel	
					30.0 ft		
	50/0	-	RC-1	30'-35'		Red brown very closely to closely jointed	44 inches
						moderately weathered SHALE	
						REC: 73%	
						RQD: 13%	
					35.0 ft		
						Boring CR-41 completed @ 35' on 1/27/06	

Boring No.: CR-45
Sheet No.: 1

Tremley Point Connector Road
Edwards & Kelcey

Warren George

CONTRACT NO _____ PURPOSE _____ STRUCTURE NO. _____
LOCATION Station _____ offset _____ RDWY _____

RIG No.		TYPE		DRILLER		HELPERS	
DATE							
TIME STARTED	1/25/2006						
TIME FINISHED	1/26/2006						
WEATHER							
DEPTH REACHED	32.0 ft						

GROUND ELEVATION 6.76 ft M.L.W. ELEVATION _____
ZERO OF BORING LOG _____ ELEVATION GROUNDWATER _____

PAY QUANTITIES

LINEAL FEET OF BORING					SAMPLES			LIN. FT. OF ROCK CORE		
					ORDINARY DRY	UNDIST. DRY				
ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM

	UNIT WEIGHT		SIZE	WEIGHT OF HAMMER		AVG. FALL
CASING				140 lbs		30 inches
ORDINARY DRY SAMPLES		O.D.:	I.D.:	140 lbs		30 inches
UNDISTURBED SAMPLES		TYPE:		LENGTH	O.D.:	I.D.:

GROUNDWATER READINGS
DATE 1/25/2006
TIME
DEPTH 1'

GENERAL REMARKS _____

INSPECTOR: Robert Pace RESIDENT ENGINEER: _____

Boring No.: CR-45
Sheet No.: 2

Tremley Point Connector Road

CONTRACT NO _____ PURPOSE _____

Elev. 6.76	Blows on Spoon for 6" Penetration		Sample No.	Sample Depth	Log	Materials & Remarks	recovery:
	1	1	S-1	0'-2'		Black organic medium to fine SAND, little Silt	20 inches
	1	1			2.0 ft		
	1	2	S-2	2'-4'		Dark gray SILT, little fine Sand, trace Clay	18 inches
	1	1			4.0 ft		
	WR	WR	S-3	4'-6'		Dark gray medium to fine SAND, some Silt	22 inches
	WR	1					
	WR	WR	S-4	6'-8'		Dary gray medium to fine SAND, some Silt	24 inches
	1	1			8.0 ft		
	1	1	S-5	8'-10'		Dark gray SILT, some fine Sand	20 inches
	2	2					
					15.0 ft		
	25	30	S-6	15'-17'		Red brown coarse to fine SAND, little Silt, trace	8 inches
	33	35				fine Gravel	
	50	100/5"	S-7	20'-22'		Red brown coarse to fine SAND, little coarse to	10 inches
	-	-				fine Gravel, trace Silt	
	100/3"	-	S-8	25'-27'		Brown coarse to fine SAND, some coarse to fine	3 inches
	-	-			27.0 ft	Gravel, trace Silt	
			RC-1	27'-32'		Red brown very closely to medium jointed,	58 inches
						slightly weathered SHALE	
						REC: 97%	
						RQD: 43%	
					32.0 ft		
						Boring CR-45 completed @ 32' on 1/26/06	

Boring No.: CR-57
Sheet No.: 1

Tremley Point Connector Road
Edwards & Kelcey

Warren George

CONTRACT NO _____ PURPOSE _____ STRUCTURE NO. _____
LOCATION Station _____ offset _____ RDWY _____

RIG No.		TYPE		DRILLER		HELPERS	
DATE							
TIME STARTED	1/17/2006						
TIME FINISHED	1/19/2006						
WEATHER							
DEPTH REACHED	42.0 ft						

GROUND ELEVATION 6.98 ft M.L.W. ELEVATION _____
ZERO OF BORING LOG _____ ELEVATION GROUNDWATER _____

PAY QUANTITIES

LINEAL FEET OF BORING					SAMPLES			LIN. FT. OF ROCK CORE		
					ORDINARY DRY	UNDIST. DRY				
ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM

	UNIT WEIGHT	SIZE	WEIGHT OF HAMMER		AVG. FALL
CASING			140 lbs		30 inches
ORDINARY DRY SAMPLES	O.D.:	I.D.:	140 lbs		30 inches
UNDISTURBED SAMPLES	TYPE:		LENGTH	O.D.:	I.D.:

GROUNDWATER READINGS

DATE	1/17/2006	6\12/2006	7/26/2006
TIME			
DEPTH	4'	4.5'	4'

GENERAL REMARKS _____

INSPECTOR: Robert Pace RESIDENT ENGINEER: _____

Boring No.: CR-57
Sheet No.: 2

Tremley Point Connector Road

CONTRACT NO _____ PURPOSE _____

Elev. 6.98	Blows on Spoon for 6" Penetration		Sample No.	Sample Depth	Log	Materials & Remarks	recovery:
	0	1	S-1	0'-2'		Red brown organic SILT, trace Roots, trace fine	18 inches
	3	3				Sand	
	5	7	S-2	2'-4'		Brown organic SILT, trace Peat, trace fine Sand	18 inches
	7	12			4.0 ft		
	8	9	S-3	4'-6'		Red brown SILT, trace coarse to fine Sand, trace	20 inches
	13	16				fine Gravel	
	17	17	S-4	6'-8'		Red brown SILT, trace fine Sand	22 inches
	29	30					
	13	18	S-5	8'-10'		Red brown SILT, some Clay, trace fine Sand	20 inches
	29	39					
	16	21	S-6	15'-17'		Red brown SILT and CLAY, trace fine Sand	20 inches
	27	32					
					20.0 ft		
	67	100/1"	S-7	20'-25'		Red brown fine SAND, some Silt	7 inches
					25.0 ft		
	10	13	S-8	25'-27'		Red brown SILT, some Clay, trace fine Sand	20 inches
	13	16					
	19	21	S-9	30'-32'		Red brown SILT, little coarse to fine Sand, trace	18 inches
	22	25				coarse to fine Gravel, trace Clay	
	29	100/5"	S-10	35'-37'		Red brown SILT, little coarse to fine Sand, trace	8 inches
	-	-			37.0 ft	fine Gravel	
			RC-1	37'-42'		Red brown very closely to closely jointed,	19 inches
						moderately weathered SHALE	
						REC: 32%	
						RQD: 8%	
					42.0 ft		
						Boring CR-57 completed @ 42' on 1/19/06	

Boring No.: CR-64
Sheet No.: 1

Tremley Point Connector Road
Edwards & Kelcey

Warren George

CONTRACT NO _____ PURPOSE _____ STRUCTURE NO. _____
LOCATION Station _____ offset _____ RDWY _____

RIG No.		TYPE		DRILLER		HELPERS	
DATE							
TIME STARTED	1/6/2006						
TIME FINISHED	1/10/2006						
WEATHER							
DEPTH REACHED	45.0 ft						

GROUND ELEVATION 2.20 ft M.L.W. ELEVATION _____
ZERO OF BORING LOG _____ ELEVATION GROUNDWATER _____

PAY QUANTITIES										
LINEAL FEET OF BORING					SAMPLES			LIN. FT. OF ROCK CORE		
					ORDINARY DRY	UNDIST. DRY				
ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM

	UNIT WEIGHT		SIZE	WEIGHT OF HAMMER		AVG. FALL
CASING				140 lbs		30 inches
ORDINARY DRY SAMPLES		O.D.:	I.D.:	140 lbs		30 inches
UNDISTURBED SAMPLES		TYPE:		LENGTH	O.D.:	I.D.:

GROUNDWATER READINGS
DATE 1/6/2006
TIME
DEPTH 4'

GENERAL REMARKS _____

INSPECTOR: Robert Pace RESIDENT ENGINEER: _____

Boring No.: CR-64
Sheet No.: 2

Tremley Point Connector Road

CONTRACT NO _____ PURPOSE _____

Elev. 2.2	Blows on Spoon for 6" Penetration		Sample No.	Sample Depth	Log	Materials & Remarks	recovery:
	WR	WR	S-1	0'-2'		No recovery	0 inches
	WR	WR					
	WR	WR	S-2	2'-4'		No recovery	0 inches
	WR	WR					
	WR	WR	S-3	4'-6'		No recovery	0 inches
	WR	WR					
	WR	WR	S-4	6'-8'		Gray brown SILT, some fine Sand	12 inches
	WR	WR					
	5	6	S-5	8'-13'		Gray brown SILT, some fine Sand	14 inches
	6	8					
					15.0 ft		
	10	10	S-6	15'-17'		Gray brown fine SAND, some Silt	12 inches
	9	8					
					20.0 ft		
	8	11	S-7	20'-22'		Red brown SILT, trace fine Sand, trace coarse	11 inches
	11	12				Gravel	
	12	13	S-8	25'-27'		Red brown SILT, some fine Sand	12 inches
	14	18					
					30.0 ft		
	7	10	S-9	30'-32'		Red brown coarse to fine SAND, little fine Gravel,	16 inches
	15	25				trace Silt	
					35.0 ft		
	20	28	S-10	35'-37'		Red brown SILT, trace fine Sand, trace Clay	10 inches
	32	40					
					40.0 ft		
			RC-1	40'-45'		Red brown very closely to closely jointed,	36 inches
						highly weathered SHALE	
						REC: 60%	
						RQD: 13%	
					45.0 ft		
						Boring CR-64 completed @ 45' on 1/10/06	

Boring No.: CR-66
Sheet No.: 1

Tremley Point Connector Road
Edwards & Kelcey

Warren George

CONTRACT NO _____ PURPOSE _____ STRUCTURE NO. _____
LOCATION Station 16+50 offset 80' RT RDWY _____

RIG No.	1	TYPE	CME - 750	DRILLER	Tony	HELPERS	Jay
DATE	11/10/2005						
TIME STARTED	11/10/2005 10:00						
TIME FINISHED	11/16/2005 3:30						
WEATHER	Overcast						
DEPTH REACHED	34.0 ft						

GROUND ELEVATION 2.93 ft M.L.W. ELEVATION _____
ZERO OF BORING LOG _____ ELEVATION GROUNDWATER _____

PAY QUANTITIES

LINEAL FEET OF BORING					SAMPLES			LIN. FT. OF ROCK CORE		
					ORDINARY DRY	UNDIST. DRY				
ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM

	UNIT WEIGHT	SIZE	WEIGHT OF HAMMER		AVG. FALL
CASING		15' of 4" diameter	140 lbs		30 inches
ORDINARY DRY SAMPLES	O.D.:	I.D.:	140 lbs		30 inches
UNDISTURBED SAMPLES	TYPE:		LENGTH	O.D.:	I.D.:

GROUNDWATER READINGS
DATE 11/16/2005
TIME 10:30
DEPTH 1'

GENERAL REMARKS Core run only 4 feet in length due to equipment break down

INSPECTOR: Bob Pace RESIDENT ENGINEER: _____

Boring No.: CR-66
Sheet No.: 2

Tremley Point Connector Road

CONTRACT NO _____ PURPOSE _____

Elev. 2.93	Blows on Spoon for 6" Penetration		Sample No.	Sample Depth	Log	Materials & Remarks	recovery:
	1	WH	S-1	0'-2'		Brown PEAT	6 inches
	WH	WH					
	WH	WH	S-2	2'-4'		Brown PEAT	8 inches
	1	1			4.0 ft		
			TS-1	4'-6'		CLAY and PEAT some fine Gravel	5 inches
			TS-2	6'-8'		CLAY and PEAT some fine Gravel	24 inches
					8.0 ft		
	4	7	S-3	8'-10'		Brown coarse to fine SAND, some Silt	22 inches
	8	9					
					15.0 ft		
	12	15	S-4	15'-17'		Brown SILT some coarse to fine Sand	20 inches
	18	17					
	7	7	S-5	20'-22'		Brown SILT, some coarse to fine Sand, some	10 inches
	9	8				fine Gravel	
	17	28	S-6	25'-27'		Brown SILT, some coarse to fine Sand, some	12 inches
	30	33				fine Gravel	
					30.0 ft		
			CS-1	30'-34'		Red brown slightly weathered, closely	41 inches
						fractured SHALE	
						REC: 85%	
					34.0 ft	RQD: 60%	
						Boring CR-66 completed @ 34' on 11/16/05	

Boring No.: CR-68
Sheet No.: 1

Tremley Point Connector Road
Edwards & Kelcey

Warren George

CONTRACT NO _____ PURPOSE _____ STRUCTURE NO. _____
LOCATION Station 19+00 offset _____ RDWY _____

RIG No.	2	TYPE	ATV CME 750	DRILLER	Rob	HELPERS	Charlie
DATE	11/11/2005						
TIME STARTED	11:45 AM						
TIME FINISHED	1:15 PM						
WEATHER	Sunny (windy)						
DEPTH REACHED	50.0 ft						

GROUND ELEVATION 12.82 ft M.L.W. ELEVATION _____
ZERO OF BORING LOG _____ ELEVATION GROUNDWATER _____

PAY QUANTITIES

LINEAL FEET OF BORING					SAMPLES			LIN. FT. OF ROCK CORE		
					ORDINARY DRY	UNDIST. DRY				
ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM

	UNIT WEIGHT	SIZE	WEIGHT OF HAMMER		AVG. FALL
CASING		20' of 4" diameter	140 lbs		30 inches
ORDINARY DRY SAMPLES	O.D.:	I.D.:	140 lbs		30 inches
UNDISTURBED SAMPLES	TYPE:		LENGTH	O.D.:	I.D.:

GROUNDWATER READINGS
DATE 11/11/2005
TIME 2:00
DEPTH 10'

GENERAL REMARKS _____

INSPECTOR: Lee Paltingca RESIDENT ENGINEER: _____

Boring No.: CR-68
Sheet No.: 2

Tremley Point Connector Road

CONTRACT NO PURPOSE

Elev. 12.82	Blows on Spoon for 6" Penetration		Sample No.	Sample Depth	Log	Materials & Remarks	recovery:
	6	8	S-1	0'-2'		Brown coarse to fine SAND, some Silt, trace	10 inches
	17	20				coarse to fine Gravel, trace fractured Ashpalt	
	12	19	S-2	2'-4'		Red brown coarse to fine SAND, some Silt, little	10 inches
	17	22			4.0 ft	fine Gravel	
	15	36	S-3	4'-6'		Brown SILT, some coarse to fine Sand, trace	4 inches
	32	42				Gravel	
	11	15	S-4	6'-8'		Red brown SILT and coarse to fine GRAVEL	4 inches
	7	4			8.0 ft	trace coarse to fine Sand	
	7	36	S-5	8'-10'		Brown coarse to fine SAND, some Silt, little fine	2 inches
	28	17				Gravel	
	16	17	S-6	10'-12'		Black coarse to fine SAND, little fine Gravel, trace	3 inches
	50/5"	-				Silt	
	3	10	S-7	12'-14'		Black coarse to fine SAND, trace fine Gravel,	3 inches
	7	3				trace Silt	
	3	5	S-8	14'-16'	15.0 ft	Black coarse to fine SAND trace Silt	24 inches
	15	13				Dark brown PEAT	
					20.0 ft		
	7	7	S-9	20'-22'		Red brown coarse to fine SAND, little Silt, trace	14 inches
	9	12				fine Gravel	
	14	16	S-10	25'-27'		Red brown SILT, trace fine Sand	20 inches
	19	22					
	5	8	S-11	30'-32'		Red brown SILT, little Clay, trace fine Sand	20 inches
	17	20					
	18	32	S-12	35'-37'		Red brown SILT, little fine Gravel, trace Clay,	22 inches
	50/3"	-				trace fine Gravel	
	20	20	S-13	40'-42'		Red brown gray SILT, little coarse to fine	8 inches
	22	27				Sand, trace fine Gravel	
					45.0 ft		
	50/0"	-	S-14	45'-47'		Red brown slightely weathered, closely	57 inches
		-	RC-1	45'-50'		fractured SHALE	
						REC: 95%	
						RQD: 83%	
					50.0 ft		

Boring No.: CR-68
Sheet No.: 3

Tremley Point Connector Road

CONTRACT NO ________ PURPOSE ________

Elev.	Blows on Spoon for 6" Penetration		Sample		Log	Materials & Remarks
			No.	Depth		recovery:
						Boring CR-68 completed @ 50' on 11/11/05

Boring No.: CR-69
Sheet No.: 1

Tremley Point Connector Road
Edwards & Kelcey

Warren George

CONTRACT NO _____ PURPOSE _____ STRUCTURE NO. _____
LOCATION Station 21+50 offset 80' Right RDWY _____

RIG No.	3	TYPE	Acker Ace Air Inflated tires	DRILLER	Dave	HELPERS	Louis
DATE		12/19/2005					
TIME STARTED		12/19/2005 12:45					
TIME FINISHED		12/21/2005					
WEATHER							
DEPTH REACHED		34.0 ft					

GROUND ELEVATION 2.73 ft M.L.W. ELEVATION _____
ZERO OF BORING LOG _____ ELEVATION GROUNDWATER _____

PAY QUANTITIES										
LINEAL FEET OF BORING					SAMPLES			LIN. FT. OF ROCK CORE		
					ORDINARY DRY	UNDIST. DRY				
ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM

	UNIT WEIGHT		SIZE	WEIGHT OF HAMMER		AVG. FALL
CASING				140 lbs		30 inches
ORDINARY DRY SAMPLES		O.D.:	I.D.:	140 lbs		30 inches
UNDISTURBED SAMPLES		TYPE:		LENGTH	O.D.:	I.D.:

GROUNDWATER READINGS
DATE 12/19/2005
TIME 1:00
DEPTH 1'

GENERAL REMARKS _____

INSPECTOR: Lee Paltingca/Jim Duba RESIDENT ENGINEER: _____

Boring No.: CR-69
Sheet No.: 2

Tremley Point Connector Road

CONTRACT NO _____ PURPOSE _____

Elev. 2.73	Blows on Spoon for 6" Penetration		Sample No.	Sample Depth	Log	Materials & Remarks	recovery:
	WH	WH	S-1	0'-2'		Gray brown CLAY and PEAT, trace Silt	4 inches
	WH	WH					
	WH	WH	S-2	2'-4'		Gray brown CLAY, some Peat, trace Silt	10 inches
	WH	WH					
	WH	WH	S-3	5'-7'		Gray brown CLAY, some Peat, trace Silt	10 inches
	WH	WH					
					10.0 ft		
	WH	5	S-4	10'-12'		Gray SILT, little fine Sand	10 inches
	12	13					
	10	30	S-5	15'-17'		Gray SILT, little fine Gravel, trace fine Sand	14 inches
	31	32					
	8	11	S-6	20'-22'		Gray SILT, little fine Gravel, trace fine Sand	12 inches
	21	29					
	36	100/5"	S-7	25'-27'		Gray SILT, little fine Gravel, trace fine Sand	6 inches
	-	-					
					29.0 ft		
			RC-1	29'-34'		Red brown very closely to closely jointed,	36 inches
						slightly weathered SHALE	
						REC: 60%	
						RQD: 17%	
					34.0 ft		
						Boring CR-69 completed @ 34' on 12/21/05	

Boring No.: CR-72
Sheet No.: 1

Tremley Point Connector Road
Edwards & Kelcey

Warren George

CONTRACT NO _____ PURPOSE _____ STRUCTURE NO. _____
LOCATION Station _____ offset _____ RDWY _____

RIG No.		TYPE		DRILLER		HELPERS	
DATE							
TIME STARTED	1/20/2006						
TIME FINISHED	1/24/2006						
WEATHER							
DEPTH REACHED	35.0 ft						

GROUND ELEVATION 8.18 ft M.L.W. ELEVATION _____
ZERO OF BORING LOG _____ ELEVATION GROUNDWATER _____

PAY QUANTITIES										
LINEAL FEET OF BORING					SAMPLES			LIN. FT. OF ROCK CORE		
					ORDINARY DRY	UNDIST. DRY				
ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM

	UNIT WEIGHT		SIZE	WEIGHT OF HAMMER		AVG. FALL
CASING				140 lbs		30 inches
ORDINARY DRY SAMPLES		O.D.:	I.D.:	140 lbs		30 inches
UNDISTURBED SAMPLES		TYPE:		LENGTH	O.D.:	I.D.:

GROUNDWATER READINGS
DATE 1/20/2006
TIME
DEPTH 1'

GENERAL REMARKS _____

INSPECTOR: Robert Pace RESIDENT ENGINEER: _____

Boring No.: CR-72
Sheet No.: 2

Tremley Point Connector Road

CONTRACT NO PURPOSE

Elev. 8.18	Blows on Spoon for 6" Penetration		Sample No.	Sample Depth	Log	Materials & Remarks	recovery:
	1	1	S-1	0'-2'		Black organic medium to fine SAND, little Silt	12 inches
	1	1					
	1	2	S-2	2'-4'		Black medium to fine SAND, little Silt	14 inches
	2	1					
	1	2	S-3	4'-6'		Black medium to fine SAND, little Silt	18 inches
	2	2					
	2	2	S-4	6'-8'		Black medium to fine SAND, some Silt	18 inches
	3	3					
	2	3	S-5	8'-10'		Black medium to fine SAND, little Silt	20 inches
	3	4					
	21	22	S-6	15'-17'		Red brown coarse to fine SAND, little Silt	19 inches
	23	20					
	31	40	S-7	20'-22'		Red brown coarse to fine SAND, some coarse	12 inches
	47	61				to fine Gravel, trace Silt	
	25	27	S-8	25'-27'		Brown coarse to fine SAND, some Silt, little fine	16 inches
	25	29				Gravel	
					30.0 ft		
	50/0	-	RC-1	30'-35'		Red brown very closely to medium jointed,	34 inches
	-	-				moderately weathered SHALE	
						REC: 57%	
						RQD: 28%	
					35.0 ft		
						Boring CR-72 completed @ 35' on 1/24/06	

Boring No.: CR-74
Sheet No.: 1

Tremley Point Connector Road
Edwards & Kelcey

Warren George

CONTRACT NO _____ PURPOSE _____ STRUCTURE NO. _____
LOCATION Station _____ offset _____ RDWY _____

RIG No.		TYPE		DRILLER		HELPERS	
DATE							
TIME STARTED	1/19/2006						
TIME FINISHED	1/19/2006						
WEATHER							
DEPTH REACHED	30.5 ft						

GROUND ELEVATION 6.07 ft M.L.W. ELEVATION _____
ZERO OF BORING LOG _____ ELEVATION GROUNDWATER _____

PAY QUANTITIES										
LINEAL FEET OF BORING					SAMPLES			LIN. FT. OF ROCK CORE		
					ORDINARY DRY	UNDIST. DRY				
ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM

	UNIT WEIGHT		SIZE	WEIGHT OF HAMMER		AVG. FALL
CASING				140 lbs		30 inches
ORDINARY DRY SAMPLES		O.D.:	I.D.:	140 lbs		30 inches
UNDISTURBED SAMPLES		TYPE:		LENGTH	O.D.:	I.D.:

GROUNDWATER READINGS
DATE 1/19/2006
TIME
DEPTH 3'

GENERAL REMARKS _____

INSPECTOR: Robert Pace RESIDENT ENGINEER: _____

Boring No.: CR-74
Sheet No.: 2

Tremley Point Connector Road

CONTRACT NO PURPOSE

Elev. 6.07	Blows on Spoon for 6" Penetration		Sample No.	Sample Depth	Log	Materials & Remarks	recovery:
	1	1	S-1	0'-2'		Gray coarse to fine SAND, little Silt	22 inches
	1	1					
	1	2	S-2	2'-4'		Gray coares to fine SAND, little Silt	18 inches
	2	2					
	1	1	S-3	4'-6'		Gray coarse to fine SAND, little Silt	24 inches
	2	2			6.0 ft		
	1	1	S-4	6'-8'		Gray SILT, some medium to fine Sand	24 inches
	1	1					
			ST-1	8'-10'		Gray SILT, some medium to fine Sand	20 inches
	8	10	S-5	15'-17'		Brown SILT, some coarse to fine Sand	24 inches
	17	16					
					20.0 ft		
	30	40	S-6	20'-22'		Brown coarse to fine SAND, some Silt	17 inches
	50/5"						
					25.0 ft		
	50/5"		S-7	25'-25.5'	25.5 ft	Brown highly weathered SHALE	
			RC-1	25.5-30.5		Red brown very closely to closely jointed,	56 inches
						moderately weathered SHALE	
						REC: 93%	
						RQD: 30%	
					30.5 ft		
						Boring CR-74 completed @ 30.5' on 1/19/06	

Boring No.: CR-77
Sheet No.: 1

Tremley Point Connector Road
Edwards & Kelcey

Warren George

CONTRACT NO _____ PURPOSE _____ STRUCTURE NO. _____
LOCATION Station _____ offset _____ RDWY _____

RIG No.		TYPE		DRILLER		HELPERS	
DATE							
TIME STARTED	1/13/2006						
TIME FINISHED	1/17/2006						
WEATHER							
DEPTH REACHED	45.0 ft						

GROUND ELEVATION 4.52 ft M.L.W. ELEVATION _____
ZERO OF BORING LOG _____ ELEVATION GROUNDWATER _____

PAY QUANTITIES

LINEAL FEET OF BORING					SAMPLES			LIN. FT. OF ROCK CORE		
					ORDINARY DRY	UNDIST. DRY				
ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM

	UNIT WEIGHT		SIZE	WEIGHT OF HAMMER		AVG. FALL
CASING				140 lbs		30 inches
ORDINARY DRY SAMPLES		O.D.:	I.D.:	140 lbs		30 inches
UNDISTURBED SAMPLES		TYPE:		LENGTH	O.D.:	I.D.:

GROUNDWATER READINGS
DATE 1/13/2006
TIME
DEPTH 3'

GENERAL REMARKS _____

INSPECTOR: Robert Pace RESIDENT ENGINEER: _____

Boring No.: CR-77
Sheet No.: 2

Tremley Point Connector Road

CONTRACT NO _____ PURPOSE _____

Elev. 4.52	Blows on Spoon for 6" Penetration		Sample No.	Sample Depth	Log	Materials & Remarks	recovery:
	WR	WR	S-1	0'-2'		Brown SILT, little coarse to fine Sand	8 inches
	WR	WR					
	2	1	S-2	2'-4'		Brown SILT, little coares to fine Sand, trace fine	14 inches
	2	2				Gravel	
	6	9	S-3	4'-6'		Brown SILT, some fine Gravel, little coarse to fine	20 inches
	7	10				Sand	
	8	18	S-4	6'-8'		Brown SILT, trace coarse to fine Sand	20 inches
	14	14					
	8	11	S-5	8'-10'		Brown SILT, trace coarse to fine Sand	15 inches
	16	17					
					15.0 ft		
	11	17	S-6	15'-17'		Brown coarse to fine SAND, little Silt	13 inches
	11	14					
	26	46	S-7	20'-22'		Brown coarse to fine SAND, little Silt	24 inches
	27	25					
	14	11	S-8	25'-27'		Brown coarse to fine SAND, little Silt	20 inches
	13	15					
	50/5"		S-9	30'-32'		Brown coarse to fine SAND, little Silt, trace fine	4 inches
						Gravel	
	50/5"		S-10	35'-37'		Brown coarse to fine SAND, little Silt, trace fine	4 inches
						Gravel	
					40.0 ft		
			RC-1	40'-45'		Red brown closely to medium jointed, slightly	60 inches
						weathered SHALE	
						REC: 100%	
						RQD: 62%	
					45.0 ft		
						Boring CR-77 completed @ 45' on 1/17/06	

Boring No.: A5-1
Sheet No.: 1

Tremley Point Connector Road
Edwards & Kelcey

Warren George

CONTRACT NO _____ PURPOSE _____ STRUCTURE NO. _____
LOCATION Station 34+48 offset 83' Right RDWY _____

RIG No.		TYPE	CME 55 off-land	DRILLER	Bob	HELPERS	Lenny
DATE	12/23/2005						
TIME STARTED	12/23/2005						
TIME FINISHED	12/27/2005						
WEATHER							
DEPTH REACHED	52.5 ft						

GROUND ELEVATION -8.14 ft M.L.W. ELEVATION _____
ZERO OF BORING LOG _____ ELEVATION GROUNDWATER _____

PAY QUANTITIES

LINEAL FEET OF BORING					SAMPLES			LIN. FT. OF ROCK CORE		
					ORDINARY DRY	UNDIST. DRY				
ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM

	UNIT WEIGHT		SIZE	WEIGHT OF HAMMER		AVG. FALL
CASING				140 lbs		30 inches
ORDINARY DRY SAMPLES		O.D.:	I.D.:	140 lbs		30 inches
UNDISTURBED SAMPLES		TYPE:	(none)	LENGTH	O.D.:	I.D.:

GROUNDWATER READINGS
DATE
TIME
DEPTH

GENERAL REMARKS Boring performed in Rahway River

INSPECTOR: Robert Pace RESIDENT ENGINEER: _____

Boring No.: A5-1
Sheet No.: 2

Tremley Point Connector Road

CONTRACT NO PURPOSE

Elev. -8.14	Blows on Spoon for 6" Penetration		Sample No.	Sample Depth	Log	Materials & Remarks	recovery:
	WR	WR	S-1	0'-2'		Brown organic SILT and PEAT, trace Clay	20 inches
	WR	WR			2.0 ft		
	WR	WR	S-2	2'-4'		Gray brown organic CLAY, some Silt, trace	24 inches
	WR	WR			4.0 ft	Peat	
	WR	WR	S-3	4'-6'		Gray brown CLAY. Some Silt	24 inches
	WR	WR					
	WR	WR	S-4	6'-8'		Gray brown CLAY, some Silt	24 inches
	WR	WR					
	WR	WR	S-5	8'-10'		Gray brown CLAY, little Silt	24 inches
	WR	WR			10.0 ft		
	4	9	S-6	10'-12'		Red brown coarse to fine SAND, little Silt, trace	24 inches
	12	12				coarse to fine Gravel	
	16	13	S-7	15'-17'		No recovery	0 inches
	26	38					
					20.0 ft		
	100/3"	-	S-8	20'-22'		Red brown completely weathered SHALE	3 inches
	-	-			22.5 ft		
			RC-1	22.5-27.5		Red brown very closely jointed, highly weathered	58 inches
						SHALE	
						REC: 97%	
						RQD: 0%	
			RC-2	27.5-32.5		Red brown very closely to medium jointed ,	60 inches
						slightly weathered SHALE	
						REC: 100%	
						RQD: 44%	
			RC-3	32.5-37.5		Red brown closely to medium jointed, slightly	60 inches
						weathered SHALE	
						REC: 100%	
						RQD: 40%	
			RC-4	37.5-42.5		Red brown closely to medium jointed, slightly	60 inches
						weathered SHALE	
						REC: 100%	
						RQD: 53%	
			RC-5	42.5-47.5		Red brown very closely to closely jointed, slightly	48 inches
						weathered SHALE	
						REC: 80%	
						RQD: 13%	
			RC-6	47.5-52.5		Red brown very closely to closely jointed,	56 inches
						slightyl weathered SHALE	
						REC: 93%	

Boring No.: A5-1
Sheet No.: 3

Tremley Point Connector Road

CONTRACT NO _____ PURPOSE _____

Elev.	Blows on Spoon for 6" Penetration		Sample No.	Sample Depth	Log	Materials & Remarks recovery:
						RQD: 0%
					52.5 ft	
						Boring A5-1 completed @ 52.5' on 12/27/05

Boring No.: A5-2
Sheet No.: 1

Tremley Point Connector Road
Edwards & Kelcey

Warren George

CONTRACT NO _____ PURPOSE _____ STRUCTURE NO. _____
LOCATION Station _____ offset _____ RDWY _____

RIG No.	1	TYPE	MV Rotary	DRILLER	Bob	HELPERS	Lenny
DATE	12/19/2005						
TIME STARTED	12/19/2005 8:30						
TIME FINISHED	12/20/2005 10:40						
WEATHER	30's						
DEPTH REACHED	50.1 ft						

GROUND ELEVATION -5.80 ft
ZERO OF BORING LOG _____
M.L.W. ELEVATION _____
ELEVATION GROUNDWATER _____

PAY QUANTITIES

LINEAL FEET OF BORING					SAMPLES			LIN. FT. OF ROCK CORE		
					ORDINARY DRY	UNDIST. DRY				
ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM

	UNIT WEIGHT		SIZE	WEIGHT OF HAMMER		AVG. FALL
CASING			30' of 4" dia	140 lbs		30 inches
ORDINARY DRY SAMPLES		O.D.:	I.D.:	140 lbs		30 inches
UNDISTURBED SAMPLES		TYPE:		LENGTH	O.D.:	I.D.:

GROUNDWATER READINGS
DATE N/A
TIME
DEPTH

GENERAL REMARKS
Boring performed in the Rahway River

INSPECTOR: Robert Pace
RESIDENT ENGINEER: _____

Boring No.: A5-2
Sheet No.: 2

Tremley Point Connector Road

CONTRACT NO _____ PURPOSE _____

Elev. -5.8	Blows on Spoon for 6" Penetration		Sample No.	Sample Depth	Log	Materials & Remarks	recovery:
	WR	WR	S-1	0'-2'		Black organic SILT, some fine to medium Sand	8 inches
	WR	WR					
	WH	WH	S-2	2'-4'		Gray brown organic SILT, some fine to medium	10 inches
	WH	WH			4.0 ft	Sand, trace Shells	
	WH	WH	S-3	4'-6'		Gray brown SILT, some Peat, trace Clay	12 inches
	WH	WH					
	WH	WH	S-4	6'-8'		Gray SILT, some Peat, trace Clay	24 inches
	WH	WH					
	WH	WH	S-5	8'-10'		Gray SILT, some Peat, trace Clay	24 inches
	WH	WH					
	WH	WH	S-6	10'-12'		Dary gray SILT, some Clay, trace Peat	24 inches
	WH	WH					
					15.0 ft		
	6	7	S-7	15'-17'		Red brown SILT, some coarse to fine Sand, trace	6 inches
	6	5				fine Gravel	
					18.0 ft		
	100/1"	-	S-8	20'-21'	20.1 ft	Red brown completely weathered SHALE	1 inch
	-	-	RC-1	20.1-25.1		Red brown closely jointed, highly weathered	60 inches
						SHALE	
						REC: 100%	
						RQD: 27%	
			RC-2	25.1-30.1		Red brown very closely jointed, highly weathered	39 inches
						SHALE	
						REC: 65%	
						RQD: 0%	
			RC-3	30.1-35.1		Red brown closely jointed, highly weathered	59 inches
						SHALE	
						REC: 98%	
						RQD: 28%	
			RC-4	35.1-40.1		Red brown very closely jointed, highly	30 inches
						weathered SHALE	
						REC: 50%	
						RQD: 0%	
			RC-5	40.1-45.1		Red brown closely jointed, highly weathered	54 inches
						SHALE	
						REC: 90%	
						RQD: 35%	
			RC-6	45.1-50.1		Red brown closely jointed, slightly weathered	60 inches
						SHALE	
						REC: 100%	
						RQD: 58%	
					50.1 ft		

Boring No.: A5-2
Sheet No.: 3

Tremley Point Connector Road

CONTRACT NO _____ PURPOSE _____

Elev.	Blows on Spoon for 6" Penetration		Sample No.	Sample Depth	Log	Materials & Remarks recovery:
						Boring A5-2 completed @ 50.1' on 12/20/05

Boring No.: A5-3
Sheet No.: 1

Tremley Point Connector Road
Edwards & Kelcey

Warren George

CONTRACT NO _____ PURPOSE _____ STRUCTURE NO. _____
LOCATION Station _____ offset _____ RDWY _____

RIG No.		TYPE		DRILLER		HELPERS	
DATE							
TIME STARTED	1/25/2006						
TIME FINISHED	1/25/2006						
WEATHER	Sunny						
DEPTH REACHED	35.0 ft						

GROUND ELEVATION 4.54 ft
ZERO OF BORING LOG _____
M.L.W. ELEVATION _____
ELEVATION GROUNDWATER _____

PAY QUANTITIES

LINEAL FEET OF BORING					SAMPLES			LIN. FT. OF ROCK CORE		
					ORDINARY DRY	UNDIST. DRY				
ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM

		UNIT WEIGHT	SIZE	WEIGHT OF HAMMER		AVG. FALL
CASING				140 lbs		30 inches
ORDINARY DRY SAMPLES	O.D.:		I.D.:	140 lbs		30 inches
UNDISTURBED SAMPLES	TYPE:			LENGTH	O.D.:	I.D.:

GROUNDWATER READINGS
DATE 1/25/2006
TIME
DEPTH 2'

GENERAL REMARKS _____

INSPECTOR: Robert Pace
RESIDENT ENGINEER: _____

Boring No.: A5-3
Sheet No.: 2

Tremley Point Connector Road

CONTRACT NO PURPOSE

Elev. 4.54	Blows on Spoon for 6" Penetration		Sample No.	Sample Depth	Log	Materials & Remarks	recovery:
	WR	WR	S-1	0'-2'		Black organic SILT, trace fine Sand	24 inches
	WR	WR					
	WR	WR	S-2	2'-4'		Black organic SILT, trace fine Sand, trace Clay	24 inches
	WR	WR					
			ST-1	4'-6'		Black organic SILT, trace fine Sand, trace Clay	24 inches
					6.0 ft		
	WR	WR	S-3	6'-8'		Dark brown PEAT, some Silt, trace Clay	24 inches
	WR	WR			8.0 ft		
	WR	WR	S-4	8'-10'		Dark brown SILT, some Peat, trace Clay	12 inches
	WR	WR					
	WH	WH	S-5	15'-17'		Dark brown SILT, some Clay, trace fine Sand,	24 inches
	WH	WH				trace Peat	
	WH	WH	S-6	20'-22'		Dark brown SILT, some Clay, little Peat, trace	14 inches
	WH	WH				fine Sand	
					25.0 ft		
	15	23	S-7	25'-27'		Red brown SILT, some decomposed Shale, trace	13 inches
	47	38				fine Gravel, trace coarse to fine Sand	
					30.0 ft		
	100/0	-	RC-1	30'-35'		Red brown very closely to closely jointed,	45 inches
						moderately weathered SHALE	
						REC: 75%	
						RQD: 28%	
					35.0 ft		
						Boring A5-3 completed @ 35' on 1/25/06	

Boring No.: A5-4
Sheet No.: 1

Tremley Point Connector Road
Edwards & Kelcey

Warren George

CONTRACT NO _____ PURPOSE _____ STRUCTURE NO. _____
LOCATION Station _____ offset _____ RDWY _____

RIG No.		TYPE		DRILLER		HELPERS	
DATE					
TIME STARTED	1/20/2006				
TIME FINISHED	1/20/2006				
WEATHER	Cloudy				
DEPTH REACHED	35.0 ft				

GROUND ELEVATION 4.71 ft M.L.W. ELEVATION _____
ZERO OF BORING LOG _____ ELEVATION GROUNDWATER _____

PAY QUANTITIES

LINEAL FEET OF BORING					SAMPLES			LIN. FT. OF ROCK CORE		
					ORDINARY DRY	UNDIST. DRY				
ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM

	UNIT WEIGHT		SIZE	WEIGHT OF HAMMER		AVG. FALL
CASING				140 lbs		30 inches
ORDINARY DRY SAMPLES		O.D.:	I.D.:	140 lbs		30 inches
UNDISTURBED SAMPLES		TYPE:		LENGTH	O.D.:	I.D.:

GROUNDWATER READINGS
DATE 1/20/2006
TIME
DEPTH 1'

GENERAL REMARKS Probable boulder from 30 to 35 feet

INSPECTOR: Robert Pace RESIDENT ENGINEER: _____

Boring No.: A5-4
Sheet No.: 2

Tremley Point Connector Road

CONTRACT NO PURPOSE

Elev. 4.71	Blows on Spoon for 6" Penetration		Sample No.	Sample Depth	Log	Materials & Remarks	recovery:
	WR	WR	S-1	0'-2'		Dark gray SILT, little fine Sand	24 inches
	WR	WR					
			ST-1	2'-4'		Dark gray SILT, little fine Sand	24 inches
	WR	WR	S-2	4'-6'		Dark gray SILT, little fine Sand, trace Clay	20 inches
	WR	WR			6.0 ft		
	WR	WR	S-3	6'-8'		Dark brown PEAT, some Silt, trace Clay	12 inches
	WR	WR			8.0 ft		
	1	2	S-4	8'-10'		Dark brown SILT, some Peat, trace Clay, trace	18 inches
	1	2				fine Sand	
	WR	WR	S-5	15'-17'		Brown SILT, little PEAT, trace Clay	24 inches
	WR	WR					
	WH	WH	S-6	20'-22'		Dark brown SILT, trace Peat, trace Clay	8 inches
	WH	WH					
					25.0 ft		
	6	6	S-7	25'-27'		Red brown SILT, some coarse to fine Sand, little	24 inches
	10	12				fine Gravel	
					30.0 ft		
	100/0	-	RC-1	30'-35'		Brown closely to medium jointed, slightly	52 inches
						weathered congolomerate (possibly a boulder)	
						REC: 87%	
						RQD: 60%	
					35.0 ft		
						Boring A5-4 completed @ 35' on 1/20/06	

Boring No.: A7-1
Sheet No.: 1

Tremley Point Connector Road
Edwards & Kelcey

Warren George

CONTRACT NO _____ PURPOSE _____ STRUCTURE NO. _____
LOCATION Station _____ offset _____ RDWY _____

RIG No.		TYPE		DRILLER		HELPERS	
DATE							
TIME STARTED	1/11/2006						
TIME FINISHED	1/11/2006						
WEATHER							
DEPTH REACHED	45.0 ft						

GROUND ELEVATION 2.88 ft
ZERO OF BORING LOG _____
M.L.W. ELEVATION _____
ELEVATION GROUNDWATER _____

PAY QUANTITIES

LINEAL FEET OF BORING					SAMPLES			LIN. FT. OF ROCK CORE		
					ORDINARY DRY	UNDIST. DRY				
ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM

	UNIT WEIGHT		SIZE	WEIGHT OF HAMMER		AVG. FALL
CASING				140 lbs		30 inches
ORDINARY DRY SAMPLES		O.D.:	I.D.:	140 lbs		30 inches
UNDISTURBED SAMPLES		TYPE:		LENGTH	O.D.:	I.D.:

GROUNDWATER READINGS
DATE 1/11/2006
TIME
DEPTH 3'

GENERAL REMARKS _____

INSPECTOR: Chris Feldman
RESIDENT ENGINEER: _____

Boring No.: A7-1
Sheet No.: 2

Tremley Point Connector Road

CONTRACT NO PURPOSE

Elev. 2.88	Blows on Spoon for 6" Penetration		Sample No.	Sample Depth	Log	Materials & Remarks	recovery:
	WH	WH	S-1	0'-2'		No recovery	0 inches
	WH	WH					
	WH	WH	S-2	2'-4'		No recovery	0 inches
	WH	WH					
	WH	WH	S-3	4'-6'		No recovery	0 inches
	WH	WH					
	1	1	S-4	8'-10'		Gray brown organic SILT, trace fine Sand	12 inches
	WH	1					
			ST-1	10'-12'		Gray brown organic SILT, trace fine Sand	24 inches
					15.0 ft		
	WH	2	S-5	15'-17'		Gray brown SILT, some Clay	18 inches
	1	11					
	7	6	S-6	20'-22'		Brown SILT, some fine Sand	18 inches
	7	8					
	6	7	S-7	25'-27'		Brown SILT, some fine Sand, trace Clay	18 inches
	12	14					
	12	19	S-8	30'-32'		Brown SILT, some fine Sand, trace Clay, trace	10 inches
	21	27				fine Gravel	
	17	24	S-9	35'-37'		Red brown SILT, some fine Gravel,	18 inches
	56	70/5"				trace fine Sand	
					40.0 ft		
			RC-1	40'-45'		Red brown very closely to closely jointed,	38 inches
						moderately weathered SHALE	
						REC: 63%	
						RQD: 30%	
					45.0 ft		
						Boring A7-1 completed @ 45' on 1/11/06	

Boring No.: A7-2
Sheet No.: 1

Tremley Point Connector Road
Edwards & Kelcey

Warren George

CONTRACT NO _____ PURPOSE _____ STRUCTURE NO. _____
LOCATION Station _____ offset _____ RDWY _____

RIG No.		TYPE		DRILLER		HELPERS	
DATE							
TIME STARTED	1/11/2006						
TIME FINISHED	1/12/2006						
WEATHER							
DEPTH REACHED	37.0 ft						

GROUND ELEVATION 2.61 ft M.L.W. ELEVATION _____
ZERO OF BORING LOG _____ ELEVATION GROUNDWATER _____

PAY QUANTITIES										
LINEAL FEET OF BORING					SAMPLES			LIN. FT. OF ROCK CORE		
					ORDINARY DRY	UNDIST. DRY				
ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM

	UNIT WEIGHT		SIZE	WEIGHT OF HAMMER		AVG. FALL
CASING				140 lbs		30 inches
ORDINARY DRY SAMPLES		O.D.:	I.D.:	140 lbs		30 inches
UNDISTURBED SAMPLES		TYPE:		LENGTH	O.D.:	I.D.:

GROUNDWATER READINGS
DATE 1/11/2006
TIME
DEPTH 3'

GENERAL REMARKS _____

INSPECTOR: Chris Feldman RESIDENT ENGINEER: _____

Boring No.: A7-2
Sheet No.: 2

Tremley Point Connector Road

CONTRACT NO PURPOSE

Elev. 2.61	Blows on Spoon for 6" Penetration		Sample No.	Sample Depth	Log	Materials & Remarks	recovery:
	WR	WR	S-1	0'-2'		No recovery	0 inches
	WR	WR					
	WR	WR	S-2	2'-4'		No recovery	0 inches
	WR	WR					
	WR	WR	S-3	4'-6'		No recovery	0 inches
	WR	WR					
	WR	WR	S-4	6'-8'		Dark brown PEAT, some Silt	10 inches
	WR	WR					
	WR	WR	S-5	8'-10'		Dark brown PEAT, little Silt	10 inches
	WR	1			10.0 ft		
	WR	WR	S-6	10'-12'		Gray brown SILT, some Clay, trace fine Gravel	18 inches
	1	1					
	6	7	S-7	15'-17'		Red brown SILT, trace coarse to fine Sand,	18 inches
	8	8				trace fine Gravel, trace Clay	
	8	10	S-8	20'-22'		Red brown SILT, trace coarse to fine Sand,	20 inches
	10	11				trace Clay	
	11	13	S-9	25'-27'		Red brown SILT, trace fine Sand, trace Clay	16 inches
	15	17					
	100/3"	-	S-10	30'-32'		Red brown SILT, little fine Sand	3 inches
					32.0 ft		
			RC-1	32'-37'		Red brown very closely to closely jointed,	34 inches
						moderately weathered SHALE	
						REC: 57%	
						RQD: 20%	
					37.0 ft		
						Boring A7-2 completed @ 37' on 1/12/06	

Boring No.: A7-3
Sheet No.: 1

Tremley Point Connector Road
Edwards & Kelcey

Warren George

CONTRACT NO _____ PURPOSE _____ STRUCTURE NO. _____
LOCATION Station _____ offset _____ RDWY _____

RIG No.		TYPE	Barge	DRILLER	Bob	HELPERS	Lenny
DATE	1/6/2005						
TIME STARTED	1/6/2005 11:50						
TIME FINISHED	1/9/2005 3:25						
WEATHER							
DEPTH REACHED	60.0 ft						

GROUND ELEVATION -3.50 ft M.L.W. ELEVATION _____
ZERO OF BORING LOG _____ ELEVATION GROUNDWATER _____

PAY QUANTITIES

LINEAL FEET OF BORING					SAMPLES			LIN. FT. OF ROCK CORE		
					ORDINARY DRY	UNDIST. DRY				
ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM

		UNIT WEIGHT		SIZE		WEIGHT OF HAMMER		AVG. FALL
CASING	03"			39' 0-4"		140 lbs		30 inches
ORDINARY DRY SAMPLES			O.D.:	I.D.:		140 lbs		30 inches
UNDISTURBED SAMPLES			TYPE:	Shelby Tube		LENGTH	24 O.D.:	I.D.:

WATER DEPTH

DATE	1/6/2005	1/9/2005
TIME	11:45 a.m	9:15 a.m.
DEPTH	5.0'	2.50'

GENERAL REMARKS Drilled in Rahway River

INSPECTOR: Robert Pace RESIDENT ENGINEER: _____

Boring No.: A7-3
Sheet No.: 2

Tremley Point Connector Road

CONTRACT NO PURPOSE

Elev. -3.5	Blows on Spoon for 6" Penetration		Sample No.	Sample Depth	Log	Materials & Remarks	recovery:
	WH	WH	S-1	0'-2'		Black organic CLAY, some Silt	8 inches
	WH	WH					
	WH	WH	S-2	2'-4'		Black organic CLAY, some Silt	12 inches
	WH	WH					
	WH	WH	S-3	4'-6'		Black organic CLAY, some Silt	12 inches
	WH	WH			6.0 ft		
	WH	WH	S-4	6'-8'		Gray brown SILT, some Clay	16 inches
	WH	WH					
	-	-	ST-1	8'-10'		Gray brown SILT and CLAY, trace Peat	24 inches
	-	-					
	WH	WH	S-5	10'-12'		Gray brown SILT, some Clay, trace Peat	18 inches
	WH	WH					
					15.0 ft		
	WH	WH	S-7	15'-17'		Gray brown coarse to fine SAND, trace Silt, trace	4 inches
	WH	2				medium to fine Gravel	
					20.0 ft		
	16	22	S-8	20'-22'		Red brown SILT, some coarse to fine Sand, little	6 inches
	60	46				coarse to fine Gravel	
					25.0 ft		
	34	100/5"	S-9	25'-27'		Red brown coarse to fine SAND, some Silt, little	8 inches
	-	-				medium to fine Gravel, trace fractured Shale	
					30.0 ft		
			RC-1	30'-35'		Red brown very closely to closely jointed,	53 inches
						slightly weathered SHALE	
						REC: 88%	
						RQD: 8%	
			RC-2	35'-40'		Red brown very closely to closely jointed,	53 inches
						slightly weathered SHALE	
						REC: 88%	
						RQD: 17%	
			RC-3	40'-45'		Red brown very closely to closely jointed	36 inches
						moderately weathered SHALE	
						REC: 60%	
						RQD: 7%	
			RC-4	45'-50'		Red brown closely to medium jointed,	60 inches
						slightly weathered SHALE	
						REC: 100%	
						RQD: 58%	

Boring No.: A7-3
Sheet No.: 3

Tremley Point Connector Road

CONTRACT NO _____ PURPOSE _____

Elev.	Blows on Spoon for 6" Penetration		Sample No.	Sample Depth	Log	Materials & Remarks	recovery:
			RC-5	50'-55'		Red brown closely to moderately jointed,	55 inches
						slightly weathered SHALE	
						REC: 92%	
						RQD: 38%	
			RC-6	55'-60'		Red brown very closely to closely jointed,	57 inches
						slightly weathered SHALE	
						REC: 95%	
						RQD 42%	
					60.0 ft		
						Boring A7-3 completed @ 60' on 1/9/06	

Boring No.: A7-4
Sheet No.: 1

Tremley Point Connector Road
Edwards & Kelcey

Warren George

CONTRACT NO _____ PURPOSE _____ STRUCTURE NO. _____
LOCATION Station _____ offset _____ RDWY _____

RIG No.		TYPE		DRILLER		HELPERS	
DATE							
TIME STARTED	1/5/2006						
TIME FINISHED	1/6/2006						
WEATHER							
DEPTH REACHED	64.0 ft						

GROUND ELEVATION -10.40 ft M.L.W. ELEVATION _____
ZERO OF BORING LOG _____ ELEVATION GROUNDWATER _____

PAY QUANTITIES										
LINEAL FEET OF BORING					SAMPLES			LIN. FT. OF ROCK CORE		
					ORDINARY DRY	UNDIST. DRY				
ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM

	UNIT WEIGHT		SIZE	WEIGHT OF HAMMER		AVG. FALL
CASING				140 lbs		30 inches
ORDINARY DRY SAMPLES		O.D.:	I.D.:	140 lbs		30 inches
UNDISTURBED SAMPLES		TYPE:		LENGTH	O.D.:	I.D.:

GROUNDWATER READINGS
DATE
TIME
DEPTH

GENERAL REMARKS Boring drilled in Rahway River

INSPECTOR: Robert Pace RESIDENT ENGINEER: _____

Boring No.: A7-4
Sheet No.: 2

Tremley Point Connector Road

CONTRACT NO PURPOSE

Elev. -10.4	Blows on Spoon for 6" Penetration		Sample No.	Sample Depth	Log	Materials & Remarks	recovery:
	WR	WR	S-1	0'-2'		Black organic SILT, little coarse to fine Sand	2 inches
	WR	WR					
	WR	WR	S-2	2'-4'		Black organic SILT, little coarse to fine Sand	4 inches
	WR	WR					
	WR	1	S-3	4'-6'		Black organic SILT, little coarse to fine Sand	8 inches
	WR	1					
	WR	1	S-4	6'-8'		Gray SILT, little coarse to fine Sand	8 inches
	1	1					
	1	2	S-5	8'-10'		Gray SILT, little coarse to fine Sand	20 inches
	6	10			10.0 ft		
	35	21	S-6	10'-12'		Gray SILT, some coarse to fine Sand, some	12 inches
	14	17				fine Gravel	
	31	81	S-7	15'-17'		Red brown SILT, some coarse to fine Sand, some	14 inches
	100/3"					coarse to fine Gravel	
	100/3"		S-8	20'-22'		Red brown SILT, some coarse to fine Sand, some	3 inches
						coarse to fine Gravel	
	100/3"		S-9	25'-27'		Red brown SILT, some coarse to fine Sand, some	2 inches
						coarse to fine Gravel	
					30.0 ft		
	87	74	S-10	30'-32'		Red brown completely weathered SHALE	4 inches
	100/5"						
					34.0 ft		
			RC-1	34'-39'		Red brown very closely to closely jointed,	50 inches
						moderately weathered SHALE	
						REC: 83%	
						RQD: 13%	
			RC-2	39'-44'		Red brown very closely to closely jointed,	34 inches
						moderately weathered SHALE	
						REC: 57%	
						RQD: 7%	
			RC-3	44'-49'		Red brown very closely to closely jointed,	55 inches
						slightly weathered SHALE	
						REC: 93%	
						RQD: 13%	
			RC-4	49'-54'		Red brown closely to medium jointed, slightly	48 inches

Boring No.: A7-4
Sheet No.: 3

Tremley Point Connector Road

CONTRACT NO PURPOSE

Elev.	Blows on Spoon for 6" Penetration		Sample No.	Sample Depth	Log	Materials & Remarks	recovery:
						weathered SHALE	
						REC: 80%	
						RQD: 51%	
			RC-5	54'-59'		Red brown closely to medium jointed , slightly	56 inches
						weathered SHALE	
						REC: 93%	
						RQD: 52%	
			RC-6	59'-64'		Red brown closely to medium jointed, moderately	45 inches
						weathered SHALE	
						REC: 75%	
						RQD: 40%	
					64.0 ft		
						Boring A7-4 completed @ 64' on 1/6/06	

Boring No.: A7-5
Sheet No.: 1

Tremley Point Connector Road
Edwards & Kelcey

Warren George

CONTRACT NO _____ PURPOSE _____ STRUCTURE NO. _____
LOCATION Station 34+70 offset 552' left RDWY _____

RIG No.		TYPE	Barge	DRILLER	Bob	HELPERS	Lenny/Diego
DATE	1/4/2006						
TIME STARTED	1/4/2006						
TIME FINISHED	1/5/2006						
WEATHER							
DEPTH REACHED	63.0 ft						

GROUND ELEVATION -4.00 ft M.L.W. ELEVATION _____
ZERO OF BORING LOG _____ ELEVATION GROUNDWATER _____

PAY QUANTITIES

LINEAL FEET OF BORING					SAMPLES			LIN. FT. OF ROCK CORE		
					ORDINARY DRY	UNDIST. DRY				
ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM

	UNIT WEIGHT		SIZE	WEIGHT OF HAMMER		AVG. FALL
CASING				140 lbs		30 inches
ORDINARY DRY SAMPLES		O.D.:	I.D.:	140 lbs		30 inches
UNDISTURBED SAMPLES		TYPE:		LENGTH	O.D.:	I.D.:

RIVER DEPTH READINGS

DATE	1/4/2006	1/5/2006
TIME	12:50	8:25
DEPTH	7.0'	3.50'

GENERAL REMARKS Drilled in Rahway River

INSPECTOR: Lee Paltingca RESIDENT ENGINEER: C.A.

Boring No.: A7-5
Sheet No.: 2

Tremley Point Connector Road

CONTRACT NO PURPOSE

Elev. -4	Blows on Spoon for 6" Penetration		Sample No.	Sample Depth	Log	Materials & Remarks	recovery:
	WH	WH	S-1	0'-2'		Black organic CLAY, some Silt	18 inches
	WH	WH					
	WH	WH	S-2	2'-4'		Black organic CLAY, some Silt	16 inches
	WH	WH					
	WH	WH	S-3	4'-6'		Dark gray/brown CLAY, some Silt, trace fine Sand	16 inches
	WH	WH			6.0 ft		
	WH	WH	S-4	6'-8'		Gray brown SILT, little Clay, trace fine Sand	12 inches
	WH	WH					
	WH	WH	S-5	8'-10'		Gray brown SILT, some fine Sand, trace Clay	18 inches
	WH	WH			10.0 ft		
	1	1	S-6	10'-12'		Gray brown medium to fine SAND, some Silt, trace	10 inches
	1	1				Clay	
					15.0 ft		
	7	11	S-7	15'-17'		Red brown SILT, some coarse to fine Sand, little	16 inches
	16	20				medium to fine Gravel	
	14	18	S-8	20'-22'		Red brown SILT, some coarse to fine Sand, little	16 inches
	27	28				medium to fine Gravel	
	51	100/4"	S-9	25'-27'		Red brown SILT, some coarse to fine Sand, little	6 inches
						medium to fine Gravel	
	75	100/2"	S-10	30'-32'		Red brown SILT, some highly weathered Shale,	5 inches
						little medium to fine Sand	
					33.0 ft		
			RC-1	33'-38'		Red brown closely to medium jointed,	51 inches
						slightly weathered SHALE	
						REC: 85%	
						RQD: 58%	
					38.0 ft		
			RC-2	38'-43'		Red brown closely to medium jointed,	60 inches
						slightly weathered SHALE	
						REC: 100%	
						RQD: 38%	
					43.0 ft		
			RC-3	43'-48'		Red brown medium jointed, slightly weathered	60 inches
						SHALE	
						REC: 100%	
						RQD: 91%	
					48.0 ft		
			RC-4	48'-53'		Red brown medium jointed, slightly weathered	60 inches
						SHALE	

Boring No.: A7-5
Sheet No.: 3

Tremley Point Connector Road

CONTRACT NO _____ PURPOSE _____

Elev.	Blows on Spoon for 6" Penetration		Sample No.	Sample Depth	Log	Materials & Remarks recovery:	
						REC: 100%	
						RQD: 63%	
			RC-5	53'-58'		Red brown medium jointed, slightly weathered	60 inches
						SHALE	
						REC:100%	
						RQD: 47%	
			RC-6	58'-63'		Red brown medium jointed, slightly weathered	60 inches
						SHALE	
						REC: 100%	
						RQD: 52%	
					63.0 ft		
						Boring A7-5 completed @ 63' on 1/5/06	

Boring No.: A7-6
Sheet No.: 1

Tremley Point Connector Road
Edwards & Kelcey

Warren George

CONTRACT NO _____ PURPOSE _____ STRUCTURE NO. _____
LOCATION Station _____ offset _____ RDWY _____

RIG No.		TYPE		DRILLER		HELPERS	
DATE							
TIME STARTED	1/30/2005						
TIME FINISHED	1/31/2005						
WEATHER							
DEPTH REACHED	38.0 ft						

GROUND ELEVATION 2.60 ft M.L.W. ELEVATION _____
ZERO OF BORING LOG _____ ELEVATION GROUNDWATER _____

PAY QUANTITIES										
LINEAL FEET OF BORING					SAMPLES			LIN. FT. OF ROCK CORE		
					ORDINARY DRY	UNDIST. DRY				
ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM

	UNIT WEIGHT		SIZE	WEIGHT OF HAMMER		AVG. FALL
CASING				140 lbs		30 inches
ORDINARY DRY SAMPLES		O.D.:	I.D.:	140 lbs		30 inches
UNDISTURBED SAMPLES		TYPE:		LENGTH	O.D.:	I.D.:

GROUNDWATER READINGS
DATE 1/30/2005
TIME
DEPTH 1'

GENERAL REMARKS _____

INSPECTOR: Robert Pace RESIDENT ENGINEER: _____

Boring No.: A7-6
Sheet No.: 2

Tremley Point Connector Road

CONTRACT NO _____ PURPOSE _____

Elev. 2.6	Blows on Spoon for 6" Penetration		Sample No.	Sample Depth	Log	Materials & Remarks	recovery:
	WH	WH	S-1	0'-2'		No recovery	0 inches
	WH	WH					
	WH	WH	S-2	2'-4'		Brown organic SILT, trace fine Sand	1 inch
	WH	WH					
	WH	WH	S-3	4'-6'		No recovery	0 inches
	WH	WH					
	WH	WH	S-4	6'-8'		No recovery	0 inches
	WH	WH					
	WH	WH	S-5	8'-10'		No recovery	0 inches
	WH	WH			10.0 ft		
	WH	WH	S-6	10'-12'		Brown PEAT, trace Silt	1 inch
	WH	WH					
	WH	WH	S-7	12'-14'		No recovery	0 inches
	WH	WH					
	WH	WH	S-8	15'-17'		Brown PEAT, some Silt	3 inches
	WH	WH					
					20.0 ft		
	8	11	S-9	20'-22'		Red brown coarse to fine SAND, some coarse to	10 inches
	11	11				fine Gravel, trace Silt	
					25.0 ft		
	11	23	S-10	25'-27'		Red brown SILT, some coarse to fine Sand, little	13 inches
	19	41				fine Gravel	
	35	42	S-11	30'-32'		Red brown SILT, some fractured Shale	15 inches
	50/3	-			33.0 ft		
			RC-1	33'-38'		Red brown very closely to closely jointed,	27"
						moderately weathered SHALE	
						REC: 45%	
						RQD: 20%	
					38.0 ft		
						Boring A7-6 completed @ 38' on 1/31/06	

Boring No.: A7-7
Sheet No.: 1

Tremley Point Connector Road
Edwards & Kelcey

Warren George

CONTRACT NO _____ PURPOSE _____ STRUCTURE NO. _____
LOCATION Station _____ offset _____ RDWY _____

RIG No.		TYPE		DRILLER		HELPERS	
DATE							
TIME STARTED	1/27/2006						
TIME FINISHED	1/27/2006						
WEATHER	Sunny						
DEPTH REACHED	42.0 ft						

GROUND ELEVATION -6.39 ft
ZERO OF BORING LOG _____
M.L.W. ELEVATION _____
ELEVATION GROUNDWATER _____

PAY QUANTITIES

LINEAL FEET OF BORING					SAMPLES			LIN. FT. OF ROCK CORE		
					ORDINARY DRY	UNDIST. DRY				
ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM	ITEM

	UNIT WEIGHT		SIZE	WEIGHT OF HAMMER		AVG. FALL
CASING				140 lbs		30 inches
ORDINARY DRY SAMPLES		O.D.:	I.D.:	140 lbs		30 inches
UNDISTURBED SAMPLES		TYPE:		LENGTH	O.D.:	I.D.:

GROUNDWATER READINGS
DATE
TIME
DEPTH

GENERAL REMARKS _____

INSPECTOR: Robert Pace
RESIDENT ENGINEER: _____

Boring No.: A7-7
Sheet No.: 2

Tremley Point Connector Road

CONTRACT NO _____ PURPOSE _____

Elev. -6.39	Blows on Spoon for 6" Penetration		Sample No.	Sample Depth	Log	Materials & Remarks	recovery:
	WH	WH	S-1	0'-2'		Brown PEAT, some Silt, trace Clay	8 inches
	WH	WH					
	WH	WH	S-2	2'-4'		Dark brown PEAT and SILT, trace fine Sand	8 inches
	WH	WH			4.0 ft		
	WH	WH	S-3	4'-6'		Dark brown SILT, some Peat, trace fine Sand	24 inches
	WH	WH					
	WH	WH	S-4	6'-8'		Brown SILT and PEAT, trace Clay	24 inches
	WH	WH					
	WR	WR	S-5	8'-10'		Dark brown SILT, some Clay, trace fine Peat	24 inches
	WR	WR					
	WH	WH	S-6	15'-17'		Brown SILT and CLAY, trace fine Sand	24 inches
	WH	WH					
					20.0 ft		
	7	7	S-7	20'-22'		Red brown SILT, little fine Sand, trace fine Gravel	12 inches
	7	8					
	15	26	S-8	25'-27'		Red brown SILT, some fine Gravel, little coarse	12 inches
	50/4	-			27.0 ft	to fine Sand	
			RC-1	27'-32'		Red brown very closely to closely jointed,	47 inches
						moderately weathered SHALE	
						REC: 78%	
						RQD: 15%	
			RC-2	32'-37'		Red brown closely to medium jointed, slightly	48 inches
						weathered SHALE	
						REC: 80%	
						RQD: 45%	
			RC-3	37'-42'		Red brown closely to medium jointed, slightly	49 inches
						weathered SHALE	
						REC: 82%	
						RQD: 43%	
					42.0 ft		
						Boring A7-7 completed @ 42' on 1/27/06	

New Jersey Turnpike Authority

INTERCHANGE 12 IMPROVEMENTS

TREMLEY POINT CONNECTOR ROAD
PHASE-I GEOTECHNICAL REPORT
(Industrial Road to Tremley Point Road)

APPENDIX B

Laboratory Test Data

Project No.: 31737848-20 File: Indx1.xls

Edwards and Kelcey
Tremley Point Connector Road
LABORATORY TESTING DATA SUMMARY

BORING NO.	SAMPLE NO.	DEPTH (ft)	IDENTIFICATION TESTS: WATER CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PLAS. INDEX	USCS SYMB. (1)	SIEVE MINUS NO. 200 (%)	HYDRO. % MINUS 2 µm (%)	TOTAL UNIT WEIGHT (pcf)	DRY UNIT WEIGHT (pcf)	STRENGTH: Type Test	PEAK DEVIATOR STRESS (tsf)	AXIAL STRAIN @ PEAK STRESS (%)	CONSOL. INITIAL CONDITIONS: VOID RATIO (-)	SATUR-ATION (%)	REMARKS
A-5-3	TS-1	4-6								94.4							
A-5-3	TS-1	4.4	68.2														
A-5-3	TS-1	4.95	63.6														
A-5-3	TS-1B	5.2	66.1				CL-ML			98.8	59.5	UC	0.3	8.9			UC030d
A-5-3	TS-1	5.5	73.6														
A-5-3	TS-1C	5.75	93.6	52	40	12	MH	98.3	17	89.2	46.1				2.643	95	C06019
A-5-4	TS-1	2-4								94.3							
A-5-4	TS-1	2.45	64.1														
A-5-4	TS-1A	2.65	69.9				ML			95.3	56.1	UC	0.2	3.1			UC031b
A-5-4	TS-1	3	77.1														
A-5-4	TS-1B	3.25	75.8	38	32	6	ML	98.4	3	97.5	55.5				2.106	99	C06020
A-7-1		10-12								104.1							
A-7-1		10.15	454.1														
A-7-1	A	10.45	154.2	258	105	153	PT	63.6	21	80.2	31.5				3.650	99	C06013
A-7-1		10.75	111.5														
A-7-1	B	11	58.8				PT			107.4	67.7	UC	0.2	7.5			UC026h
A-7-1		11.25	18.4														
A-7-3		8-10								91.2							
A-7-3		8.15	145.9														
A-7-3	A	8.4	101.4				CH-OH			91.7	45.6	UC	0.1	3.8			UC026d
A-7-3		8.65	96.5														
A-7-3	B	8.9	129.4	106	37	69	CH-OH	86.2	32	86.7	37.8				3.620	100	C06014
A-7-3		10.15	47.3														
CR-10		8-10								117.5							
CR-10		8.65	22.4														
CR-10	B	8.9	21.6	28	20	8	CL	88.6	10	127.9	105.2				0.591	98	C06012

Reviewed by: GET Date: 3/30/2006

Project No.: 31737848-20 File: Indx1.xls

Edwards and Kelcey
Tremley Point Connector Road
LABORATORY TESTING DATA SUMMARY

BORING NO.	SAMPLE NO.	DEPTH (ft)	IDENTIFICATION TESTS: WATER CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PLAS. INDEX	USCS SYMB. (1)	SIEVE MINUS NO. 200 (%)	HYDRO. % MINUS 2 µm (%)	TOTAL UNIT WEIGHT (pcf)	DRY UNIT WEIGHT (pcf)	STRENGTH: Type Test	PEAK DEVIATOR STRESS (tsf)	AXIAL STRAIN @ PEAK STRESS (%)	CONSOL. INITIAL CONDITIONS: VOID RATIO (-)	SATUR-ATION (%)	REMARKS
CR-24		6-8								74.0							
CR-24		6.45	89.8														
CR-24		7	523.2														
CR-24	C	7.25	494.6				PT			68.6	11.5	UC	0.1	15.2			UC004b
CR-24		7.55	467.6														
CR-24	D	7.8	557.8	398	144	254	PT	80.2	27	65.6	10.0				10.147	98	C06002
CR-36	ST-1	5-7								91.2							
CR-36	ST-1	5.25	109.9														
CR-36	ST-1	5.8	133.9														
CR-36	ST-1B	6.05	142.4	122	42	80	CH-OH	98.4	38	83.2	34.3				3.802	99	C06001
CR-36	ST-1	6.35	97.3														
CR-36	ST-1C	6.6	92.2				CH-OH			97.9	51.0	UC	0.1	14.5			UC004c
CR-41		7-9								97.5							
CR-41		7.15	50.3														
CR-41		7.8	71.3														
CR-41	B	8.05	74.3				MH			97.7	56.1	UC	0.2	8.4			UC030c
CR-41		8.35	80.8														
CR-41	C	8.6	91.6	59	41	18	MH	96.4	13	91.4	47.7				2.405	99	C06018
CR-66	TS-2	6-8								126.2							
CR-66	TS-2	6.2	19.6														
CR-66	TS-2A	6.45	22.0	24	16	8	CL	64.6	10	132.5	108.6				0.604	102	C06004
CR-66	TS-2	6.75	20.2														
CR-66	TS-2	7.3	15.3														

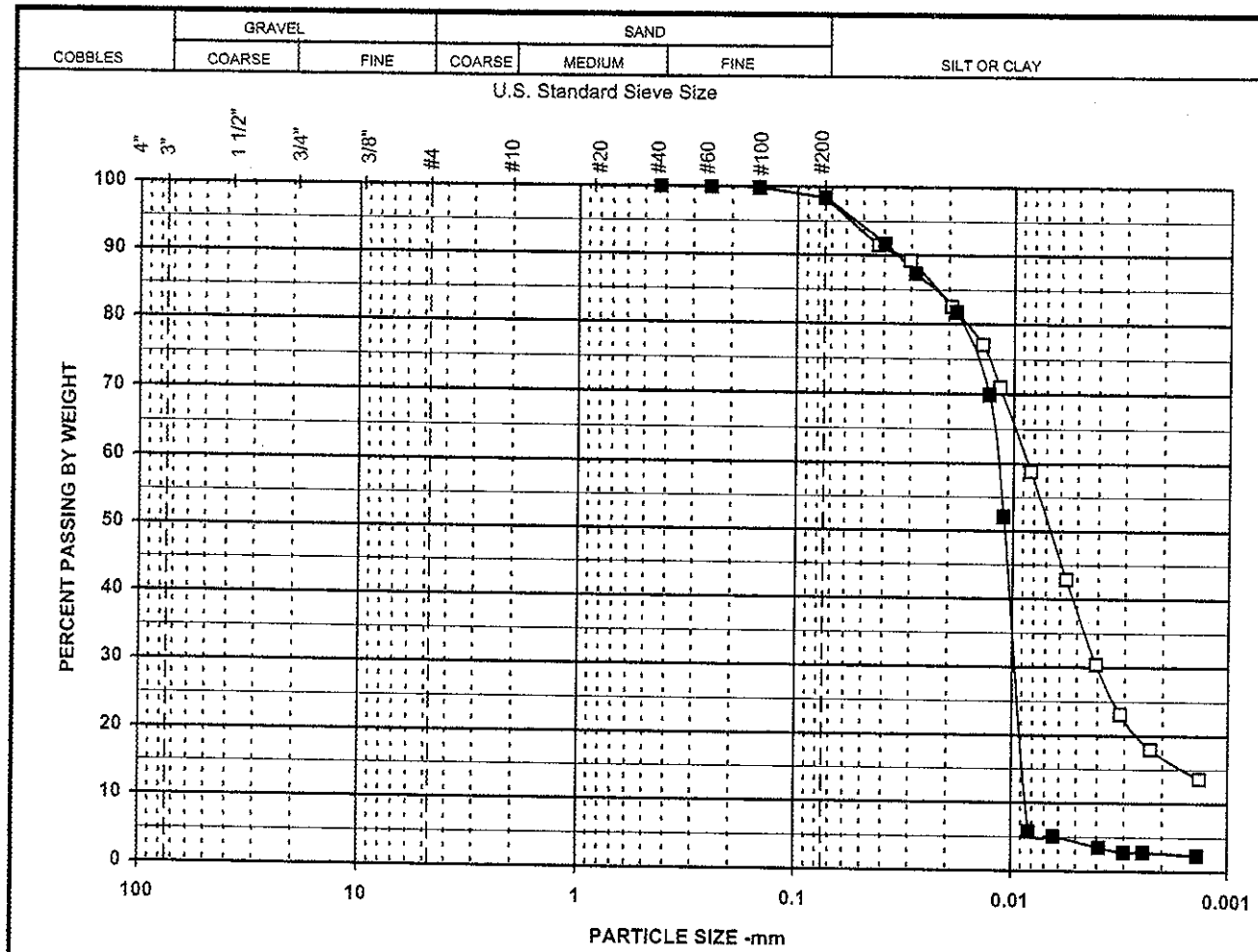
Reviewed by: GET Date: 3/30/2006

Edwards and Kelcey
Tremley Point Connector Road
LABORATORY TESTING DATA SUMMARY

BORING NO.	SAMPLE NO.	DEPTH (ft)	IDENTIFICATION TESTS									STRENGTH			CONSOL. INITIAL CONDITIONS		REMARKS
			WATER CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PLAS. INDEX	USCS SYMB. (1)	SIEVE MINUS NO. 200 (%)	HYDRO. % MINUS 2 µm (%)	TOTAL UNIT WEIGHT (pcf)	DRY UNIT WEIGHT (pcf)	Type Test	PEAK DEVIATOR STRESS (tsf)	AXIAL STRAIN @ PEAK STRESS (%)	VOID RATIO (-)	SATUR-ATION (%)	
CR-74	TS-1	8-10								99.0							
CR-74	TS-1	8.6	54.0														
CR-74	TS-1B	8.85	51.4				SM			102.4	67.7	UC	0.3	2.7			UC030b
CR-74	TS-1	9.15	56.4														
CR-74	TS-1C	9.2	60.8	44	39	5	ML	89.6	11	101.2	63.0				1.578	100	C06017

Note: (1) USCS symbol based on visual observation and Sieve and Atterberg limits reported.

Reviewed by: GET Date: 3/30/2006



Symbol	□	■	○
Boring	A-5-3	A-5-4	
Sample	TS-1C	TS-1B	
Spec			
Depth	5.75	3.25	
% +3"			
% Gravel			
% SAND	1.7	1.6	
% FINES	98.3	98.4	
% -2μ	17	3	
Cc			
Cu			
LL	52	38	
PL	40	32	
PI	12	6	
USCS	MH	ML	
w (%)			

Particle Size (Sieve #)	PERCENT FINER □	■	○
4"			
3"			
1 1/2"			
3/4"			
3/8"			
4			
10			
20			
40	100.0	100.0	
60	99.9	99.9	
100	99.8	99.8	
200	98.3	98.4	

SYMBOL	DESCRIPTION AND REMARKS
□	dark gray clayey SILT, trace f. sand; odor noted.
■	dark gray SILT, trace f. sand.
○	

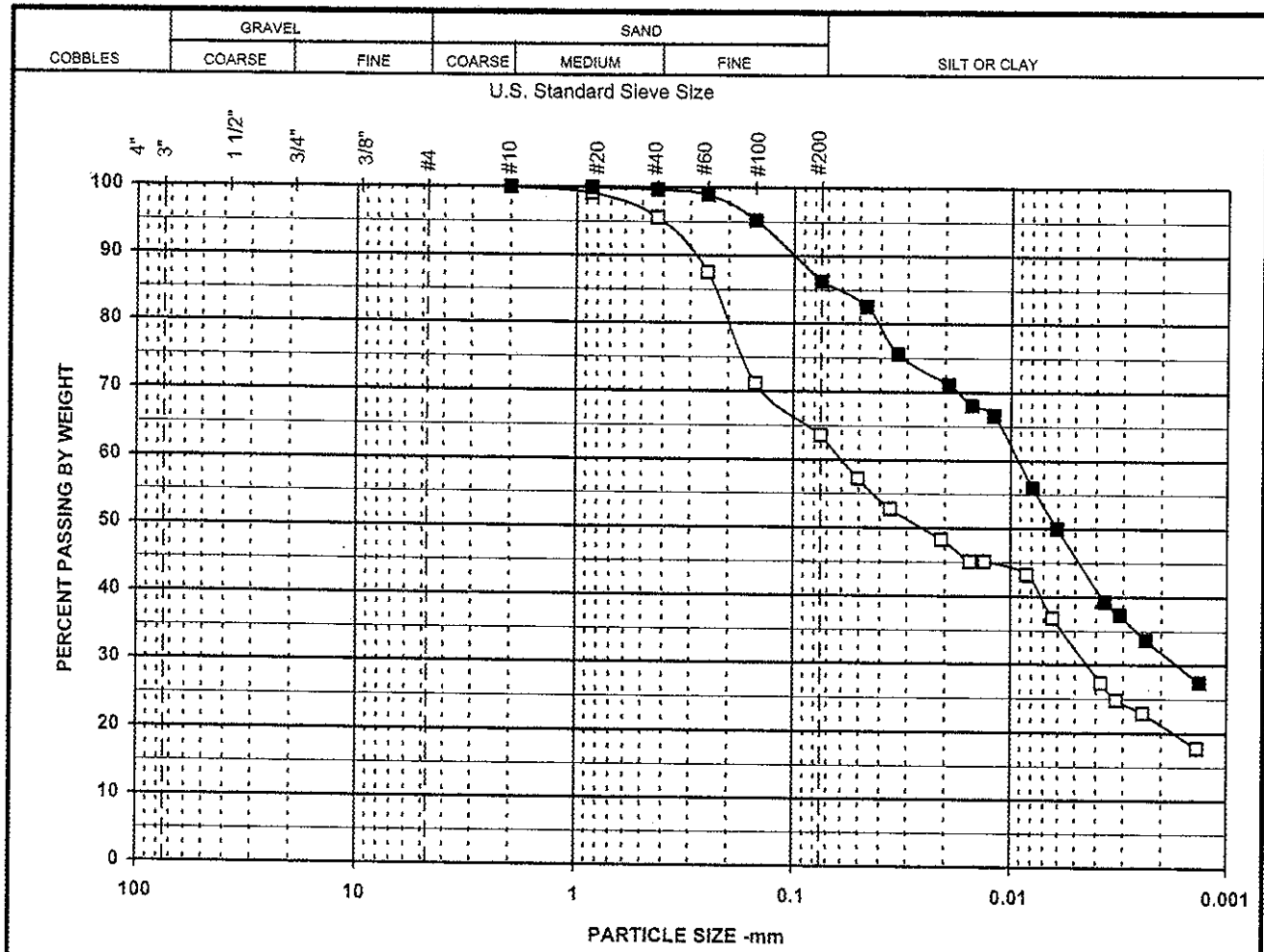
PARTICLE SIZE DISTRIBUTION

Tremley Point Connector Road

Project No.		Figure
31737848-20	March 2006	

Geotesting Services, Inc.

siev1d.xls 3/9/2006



Symbol	□	■	○
Boring	A-7-1	A-7-3	
Sample	A	B	
Spec			
Depth	10.45	8.9	
% +3"			
% Gravel			
% SAND	36.4	13.8	
% FINES	63.6	86.2	
% -2μ	21	32	
Cc			
Cu			
LL	258	106	
PL	105	37	
PI	153	69	
USCS	PT	CH-OH	
w (%)			

Particle Size (Sieve #)	PERCENT FINER □	■	○
4"			
3"			
1 1/2"			
3/4"			
3/8"			
4			
10	100.0	100.0	
20	99.1	100.0	
40	95.6	99.7	
60	87.5	98.9	
100	71.2	95.2	
200	63.6	86.2	

SYMBOL	DESCRIPTION AND REMARKS
□	gray m-f sandy clayey PEAT.
■	gray ORGANIC CLAY, some f. sand.
○	

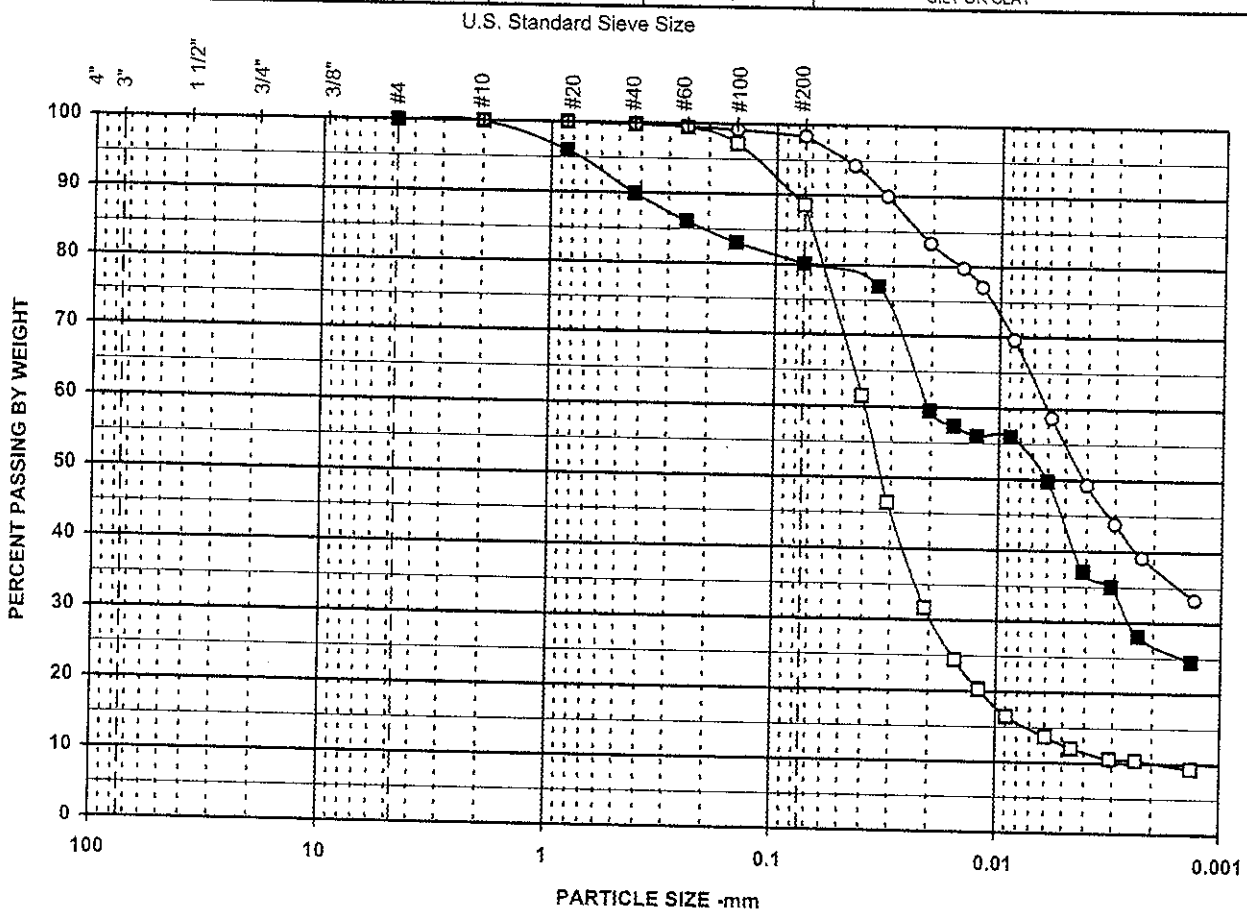
PARTICLE SIZE DISTRIBUTION

Tremley Point Connector Road

Project No.		Figure
31737848-20	March 2006	

Geotesting Services, Inc.

sieve1c.xls 3/9/2006



Symbol	□	■	○
Boring	CR-10	CR-24	CR-36
Sample	B	D	ST-1B
Spec			
Depth	8.9	7.8	6.05
% +3"			
% Gravel			
% SAND	11.4	19.8	1.6
% FINES	88.6	80.2	98.4
% -2μ	10	27	38
Cc			
Cu			
LL	28	398	122
PL	20	144	42
PI	8	254	80
USCS	CL	PT	CH-OH
w (%)			

Particle Size (Sieve #)	PERCENT FINER □	■	○
4"			
3"			
1 1/2"			
3/4"			
3/8"			
4		100.0	
10		99.9	
20	100.0	96.0	100.0
40	99.8	89.9	99.8
60	99.5	86.1	99.5
100	97.2	83.0	99.2
200	88.6	80.2	98.4

SYMBOL	DESCRIPTION AND REMARKS
□	brown silty CLAY, trace f. sand.
■	brown fibrous PEAT.
○	gray ORGANIC CLAY, trace f. sand.

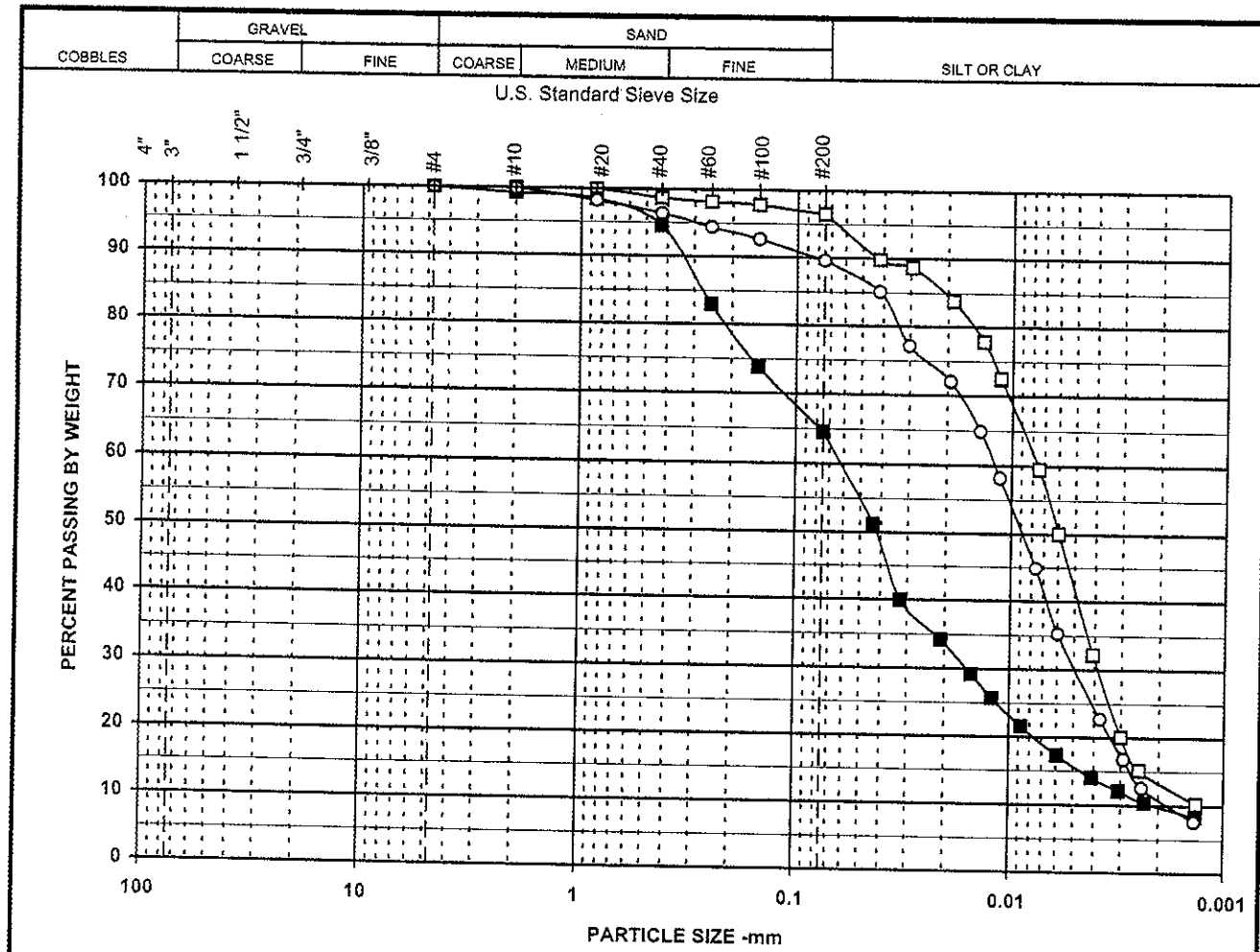
PARTICLE SIZE DISTRIBUTION

Tremley Point Connector Road

Project No.		Figure
31737848-20	March 2006	

Geotesting Services, Inc.

siev1b.xls 3/9/2006



SYMBOL	DESCRIPTION AND REMARKS
□	gray clayey SILT, trace f. sand.
■	brown m-f sandy silty CLAY; roots and vegetation noted.
○	gray SILT, trace m-f sand.

Symbol	□	■	○
Boring	CR-41	CR-66	CR-74
Sample	C	TS-2A	TS-1C
Spec Depth	8.6	6.45	9.4
% +3"			
% Gravel			
% SAND	3.6	35.4	10.4
% FINES	96.4	64.6	89.6
% -2μ	13	10	11
Cc			
Cu			
LL	59	24	44
PL	41	16	39
PI	18	8	5
USCS	MH	CL	ML
w (%)			

Particle Size (Sieve #)	PERCENT FINER □	■	○
4"			
3"			
1 1/2"			
3/4"			
3/8"			
4		100.0	100.0
10		99.3	99.9
20	99.9	98.5	98.2
40	98.7	94.5	96.3
60	98.2	83.0	94.3
100	97.8	73.8	92.6
200	96.4	64.6	89.6

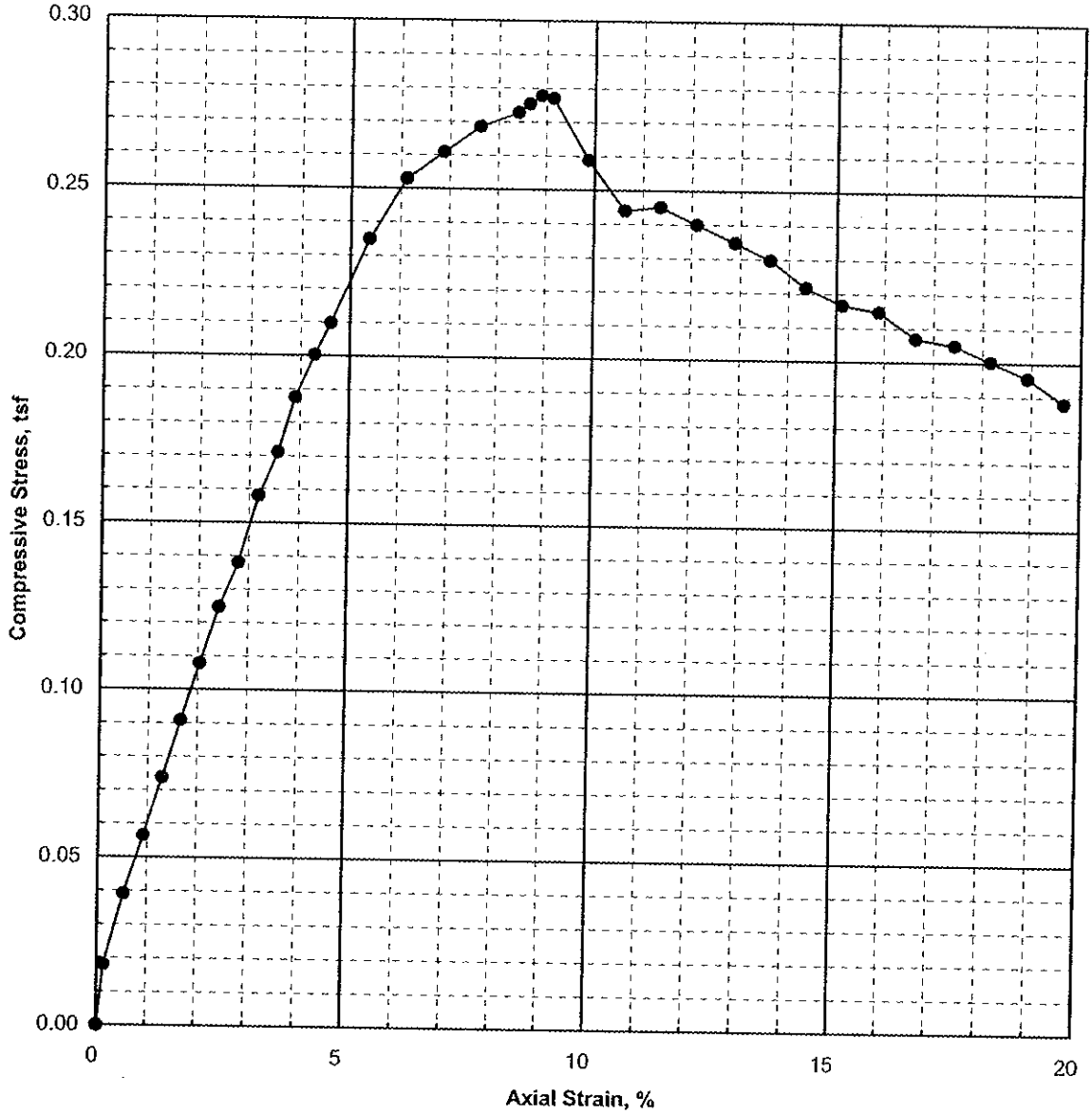
PARTICLE SIZE DISTRIBUTION

Tremley Point Connector Road

Project No.		Figure
31737848-20	March 2006	

Geotesting Services, Inc.

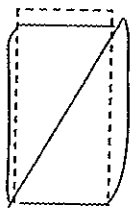
siev1a.xls 3/30/2006



Specimen Information

Water Content (%)	Wet Unit Weight (pcf)	Dry Unit Weight (pcf)	LL	PI	Length (in)	Diameter (in)
66.1	98.8	59.5			5.852	2.888

Description and/or Classification: CL-ML, gray silty CLAY, trace f. sand.



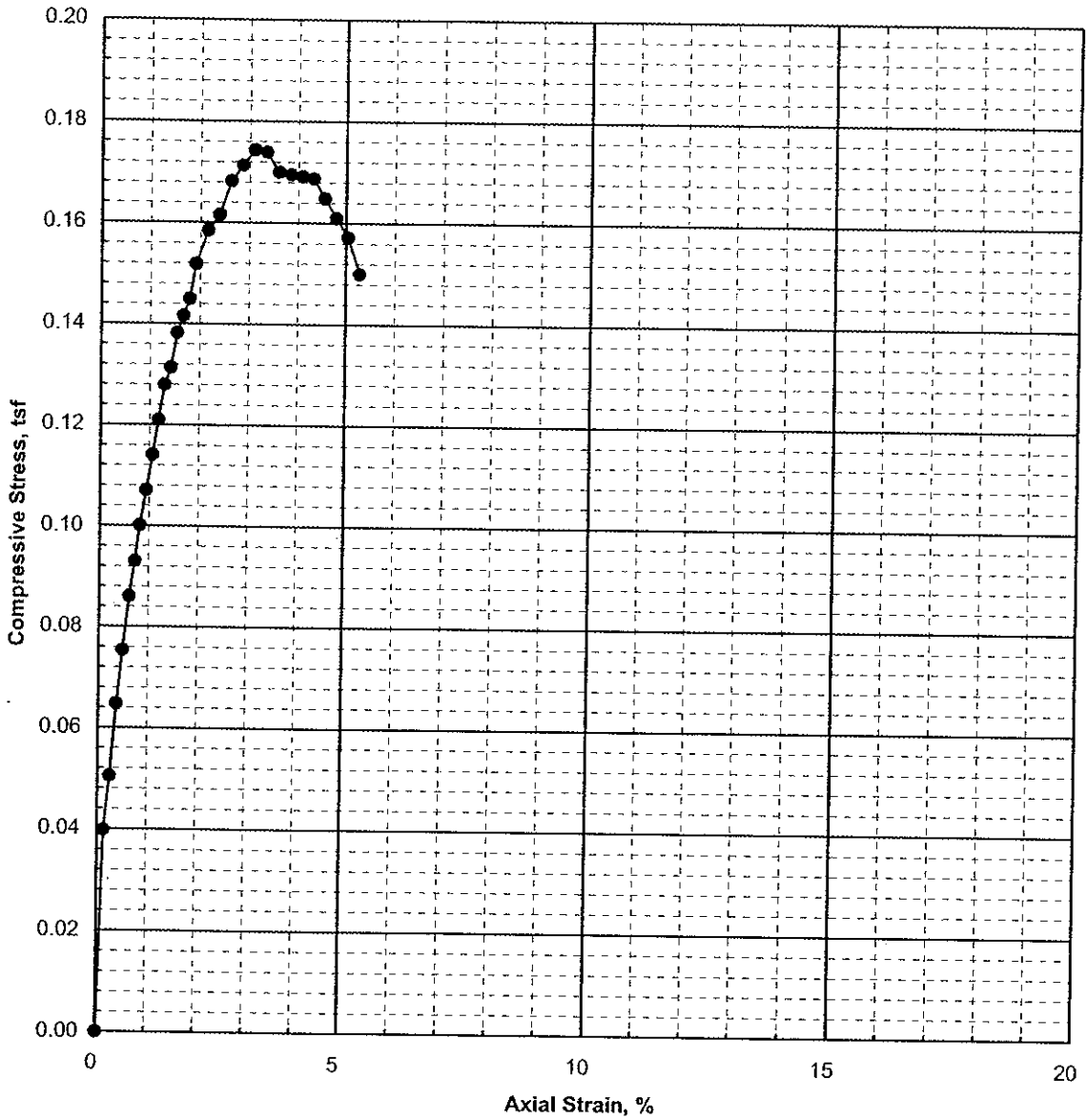
FAILURE SKETCH

Test Summary

q_u (tsf)	Strain to Peak (%)	Strain Rate (%/min)
0.28	8.9	0.75

Tested by: BB
Test Date: Jan-30-06
Reviewed by: CMJ

Project No. 31737848	Tremley Point Connector Road	UNCONFINED COMPRESSION TEST Boring: A-5-3	
Geotesting Services, Inc.		Sample: TS-1B Depth:5.2	March 2006



Specimen Information

Water Content (%)	Wet Unit Weight (pcf)	Dry Unit Weight (pcf)	LL	PI	Length (in)	Diameter (in)
69.9	95.3	56.1			6.000	2.868

Description and/or Classification: ML, dark gray SILT, trace f. sand.

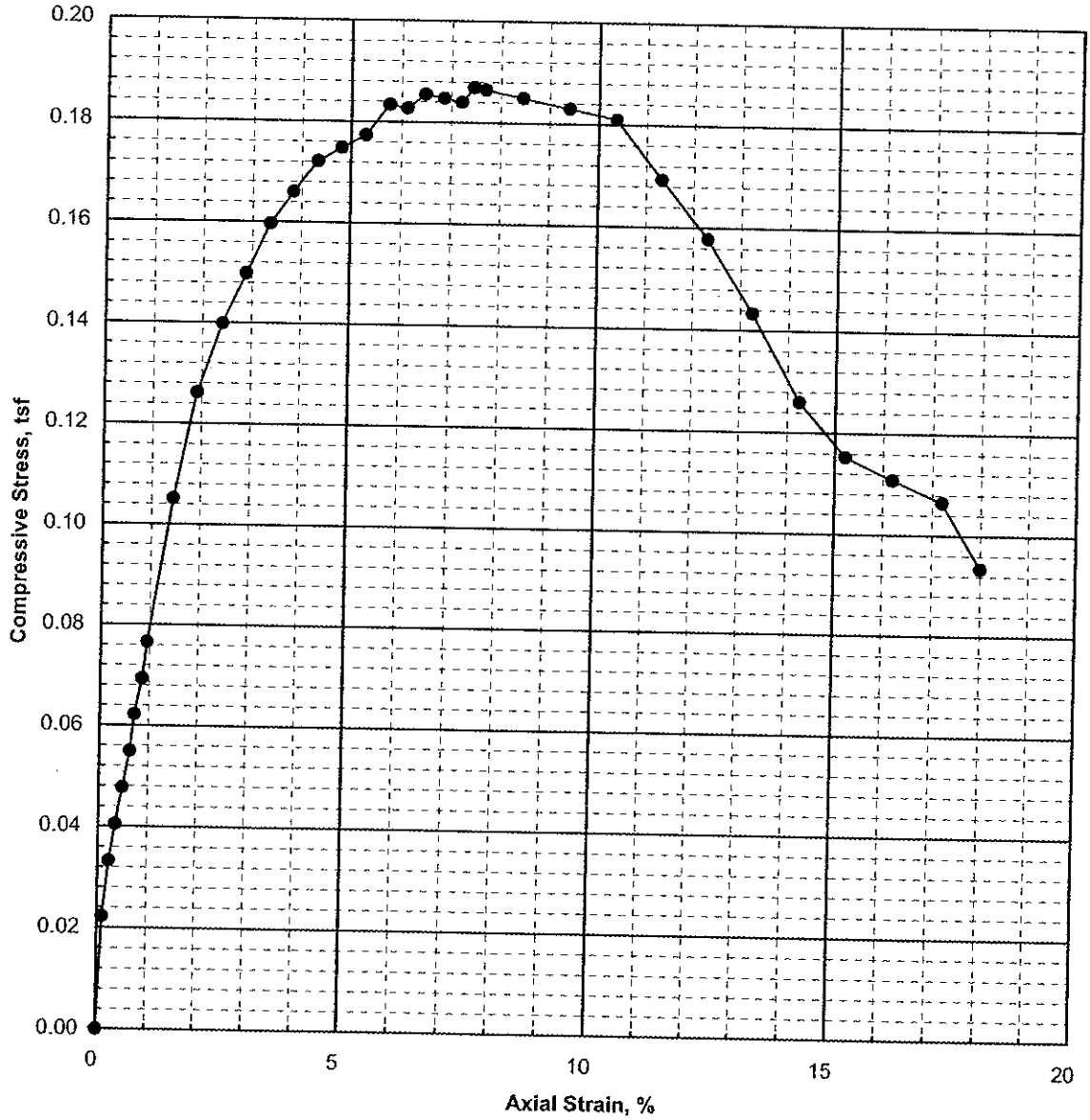
FAILURE SKETCH

Test Summary

q_u (tsf)	Strain to Peak (%)	Strain Rate (%/min)
0.17	3.1	0.72

Tested by: BB
Test Date: Jan-31-06
Reviewed by: CMJ

Project No. 31737848	Tremley Point Connector Road	UNCONFINED COMPRESSION TEST Boring: A-5-4	
Geotesting Services, Inc.		Sample: TS-1A Depth:2.65	March 2006



Specimen Information

Water Content (%)	Wet Unit Weight (pcf)	Dry Unit Weight (pcf)	LL	PI	Length (in)	Diameter (in)
58.8	107.4	67.7			6.004	2.839

Description and/or Classification: PT, gray PEAT, trace f. sand; sand at bottom.

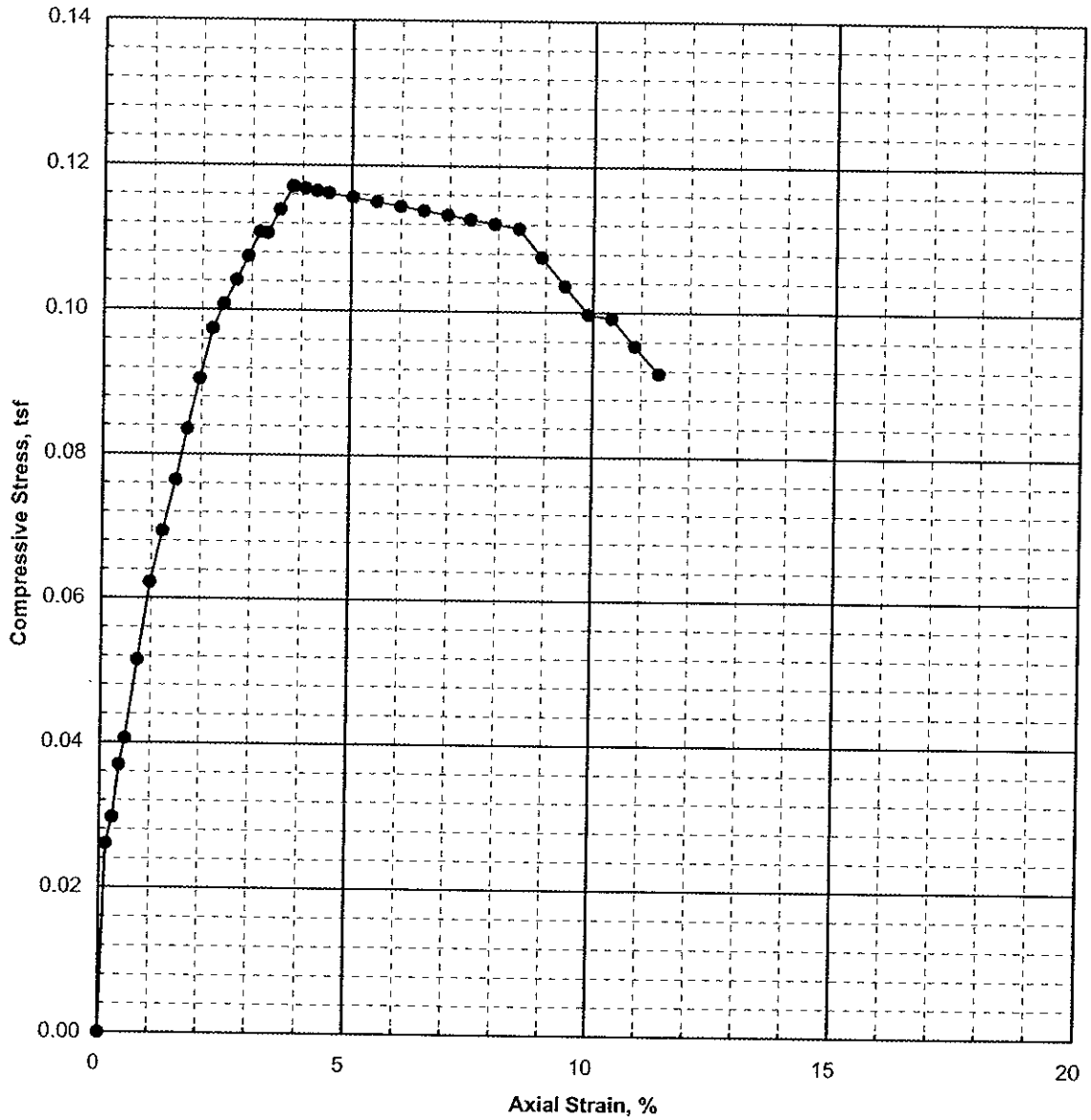
FAILURE SKETCH

Test Summary

q_u (tsf)	Strain to Peak (%)	Strain Rate (%/min)
0.19	7.5	0.72

Tested by: BB
Test Date: Jan-26-06
Reviewed by: CMJ

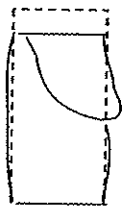
Project No. 31737848	Tremley Point Connector Road	UNCONFINED COMPRESSION TEST Boring: A-7-1 Sample: B Depth:11	March 2006
Geotesting Services, Inc.			



Specimen Information

Water Content (%)	Wet Unit Weight (pcf)	Dry Unit Weight (pcf)	LL	PI	Length (in)	Diameter (in)
101.4	91.7	45.6			6.008	2.834

Description and/or Classification: CH-OH, gray ORGANIC CLAY.



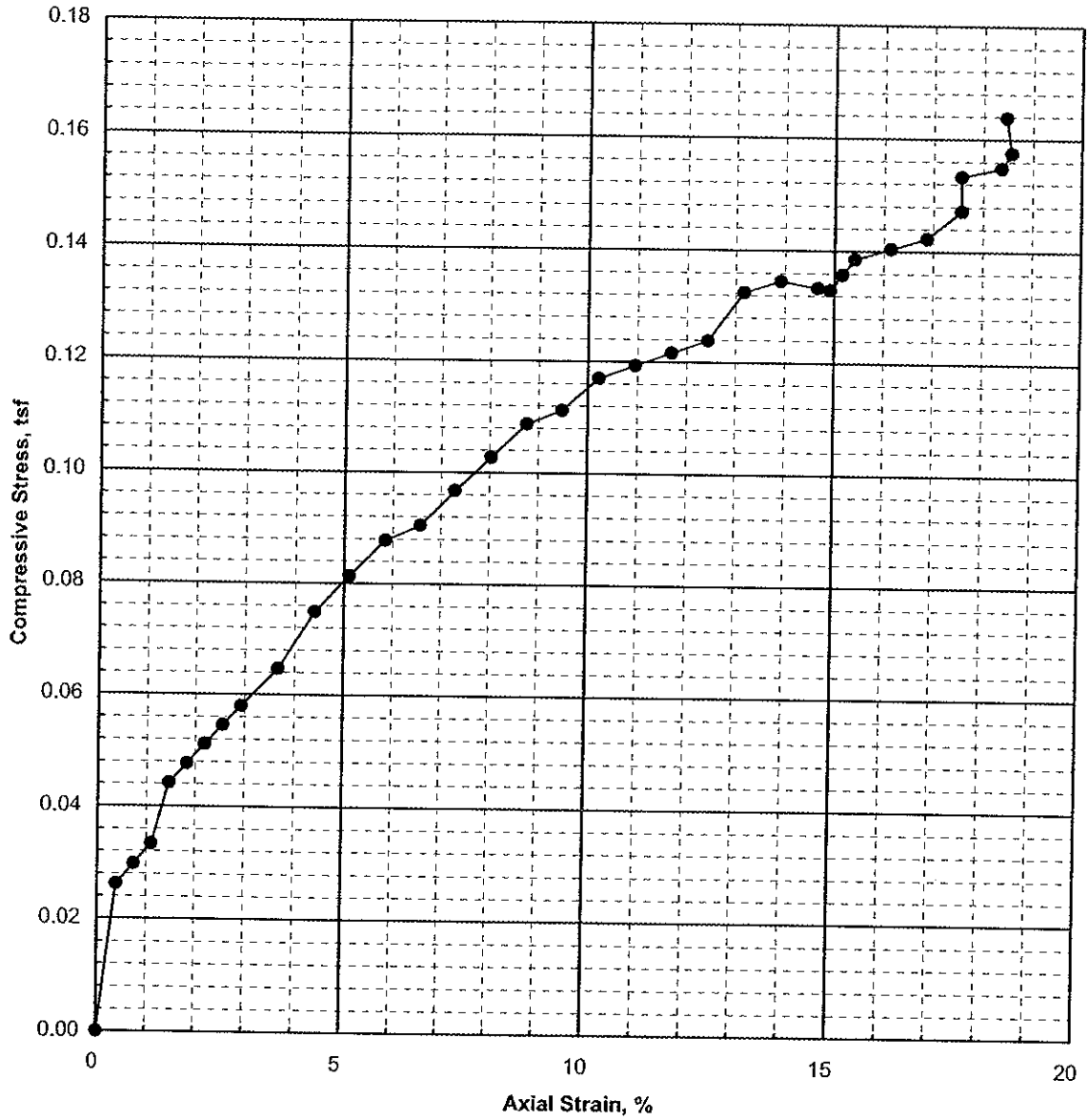
FAILURE SKETCH

Test Summary

q_u (tsf)	Strain to Peak (%)	Strain Rate (%/min)
0.12	3.8	0.73

Tested by: BB
Test Date: Jan-26-06
Reviewed by: CMJ

Project No. 31737848	Tremley Point Connector Road	UNCONFINED COMPRESSION TEST Boring: A-7-3	
Geotesting Services, Inc.		Sample: A Depth:8.4	March 2006



Specimen Information

Water Content (%)	Wet Unit Weight (pcf)	Dry Unit Weight (pcf)	LL	PI	Length (in)	Diameter (in)
494.6	68.6	11.5			6.010	2.820

Description and/or Classification: PT, brown PEAT.

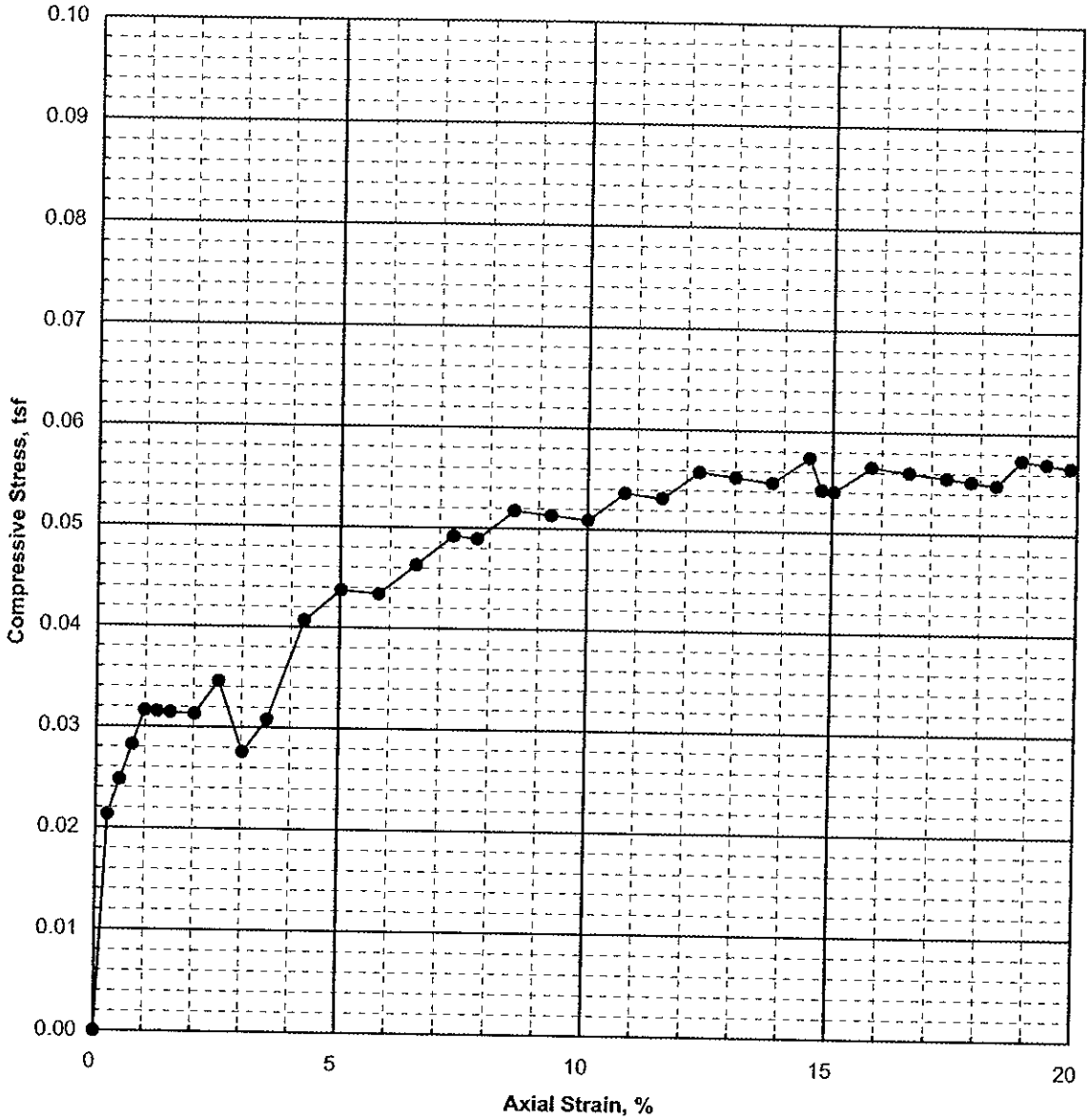
FAILURE SKETCH

Tested by: BB
Test Date: Jan-04-06
Reviewed by: CMJ

Test Summary

q_u (tsf)	Strain to Peak (%)	Strain Rate (%/min)
0.14	15.2	0.62

Project No. 31737848-20	Edwards and Kelcey Tremley Point Connector Road	UNCONFINED COMPRESSION TEST Boring: CR-24	
Geotesting Services, Inc.		Sample: C Depth:7.25	March 2006



Specimen Information

Water Content (%)	Wet Unit Weight (pcf)	Dry Unit Weight (pcf)	LL	PI	Length (in)	Diameter (in)
92.2	97.9	51.0			5.904	2.898

Description and/or Classification: CH-OH, gray CLAY, trace f. sand; shell fragments noted.

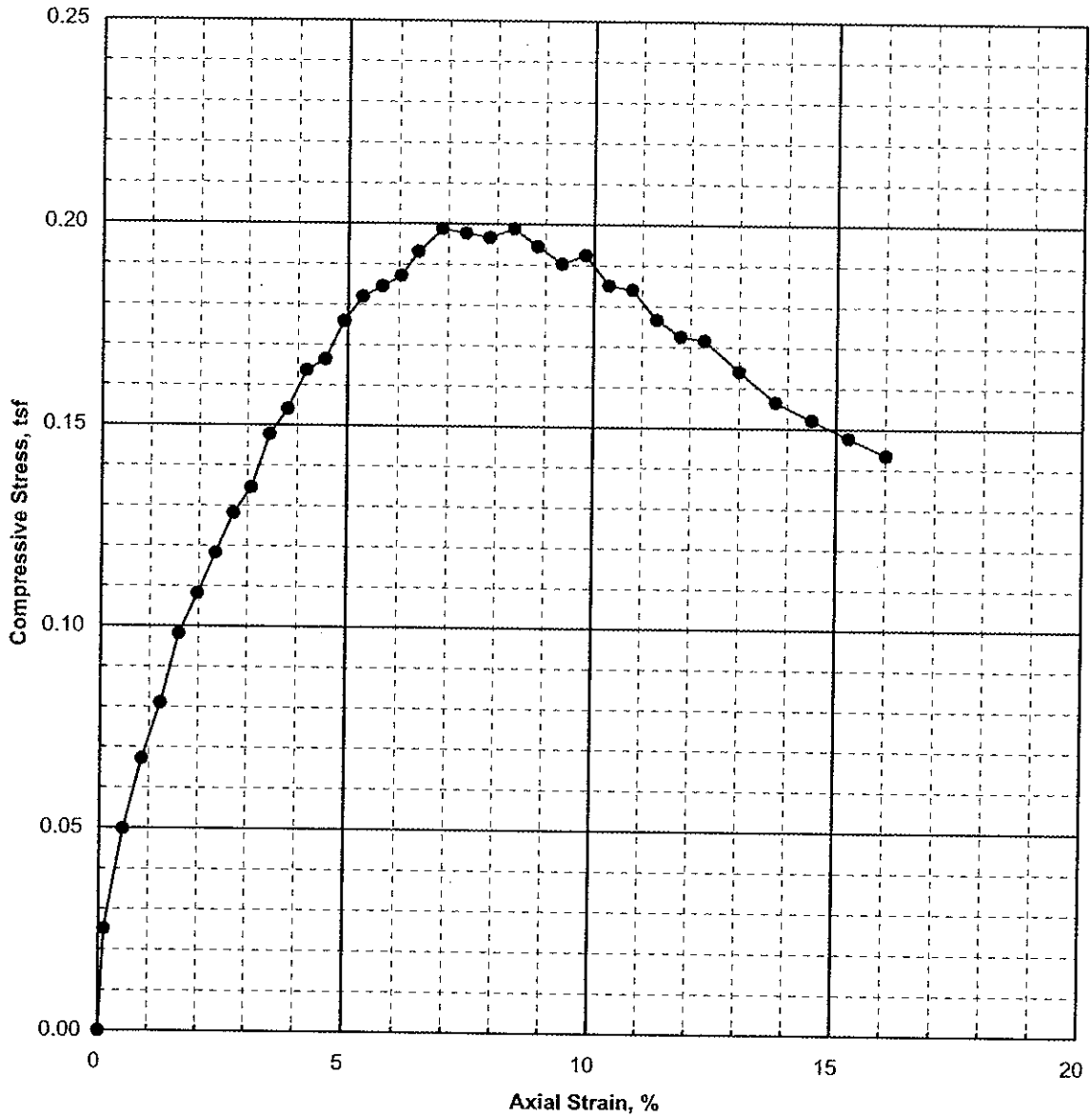
FAILURE SKETCH

Test Summary

q_u (tsf)	Strain to Peak (%)	Strain Rate (%/min)
0.06	14.5	0.75

Tested by: BB
Test Date: Jan-04-06
Reviewed by: CMJ

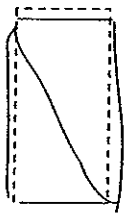
Project No. 31737848-20	Edwards and Kelcey Tremley Point Connector Road	UNCONFINED COMPRESSION TEST Boring: CR-36	
Geotesting Services, Inc.		Sample: ST-1C Depth:6.6	March 2006



Specimen Information

Water Content (%)	Wet Unit Weight (pcf)	Dry Unit Weight (pcf)	LL	PI	Length (in)	Diameter (in)
74.3	97.7	56.1			5.935	2.884

Description and/or Classification: MH, gray clayey SILT, trace f. sand.



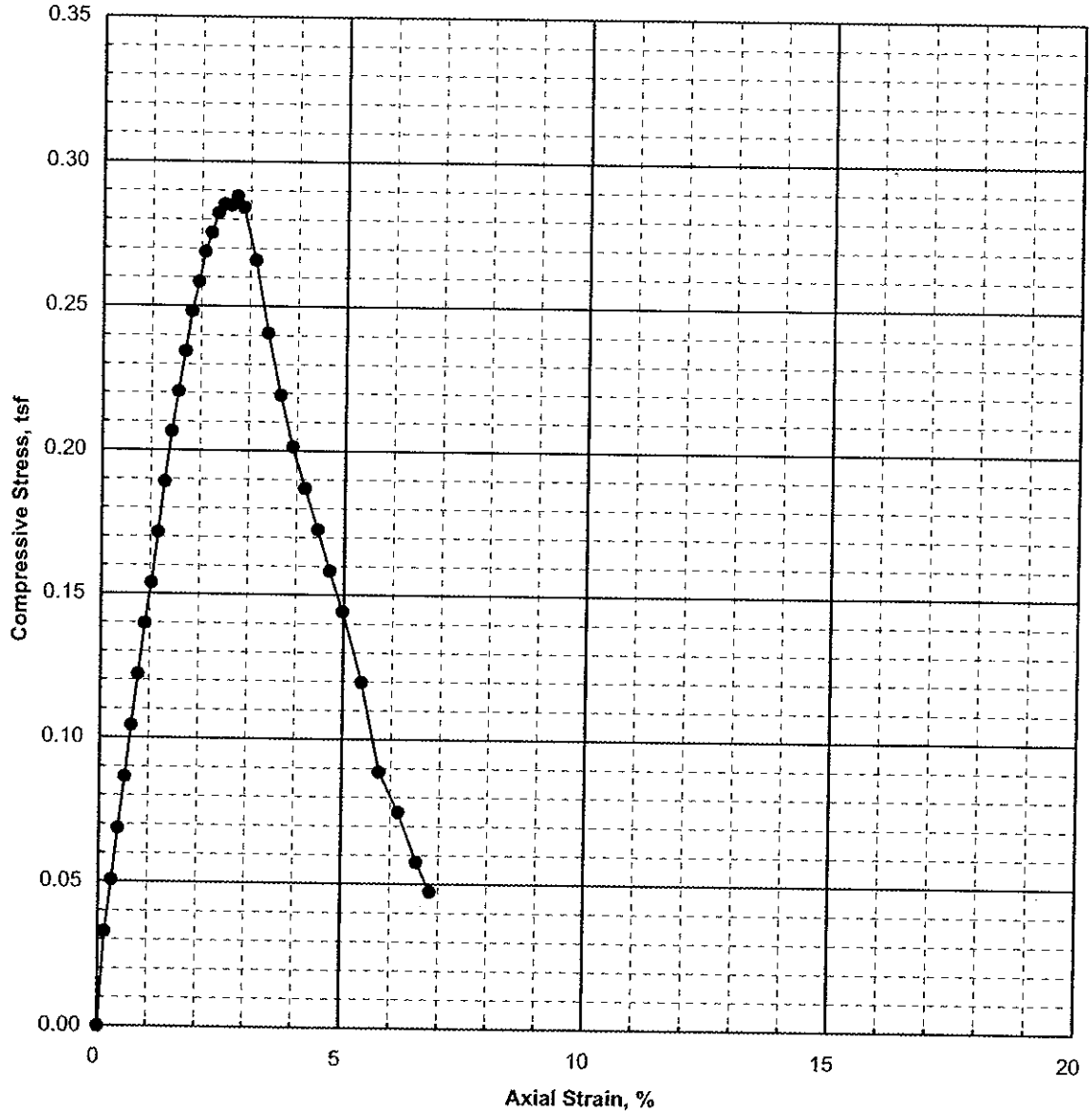
FAILURE SKETCH

Test Summary

q_u (tsf)	Strain to Peak (%)	Strain Rate (%/min)
0.20	8.4	0.74

Tested by: BB
Test Date: Jan-30-06
Reviewed by: CMJ

Project No. 31737848	Tremley Point Connector Road	UNCONFINED COMPRESSION TEST Boring: CR-41	
Geotesting Services, Inc.		Sample: B Depth:8.05	March 2006



Specimen Information

Water Content (%)	Wet Unit Weight (pcf)	Dry Unit Weight (pcf)	LL	PI	Length (in)	Diameter (in)
51.4	102.4	67.7			5.520	2.862

Description and/or Classification: SM, gray silty f. SAND, trace m. sand.

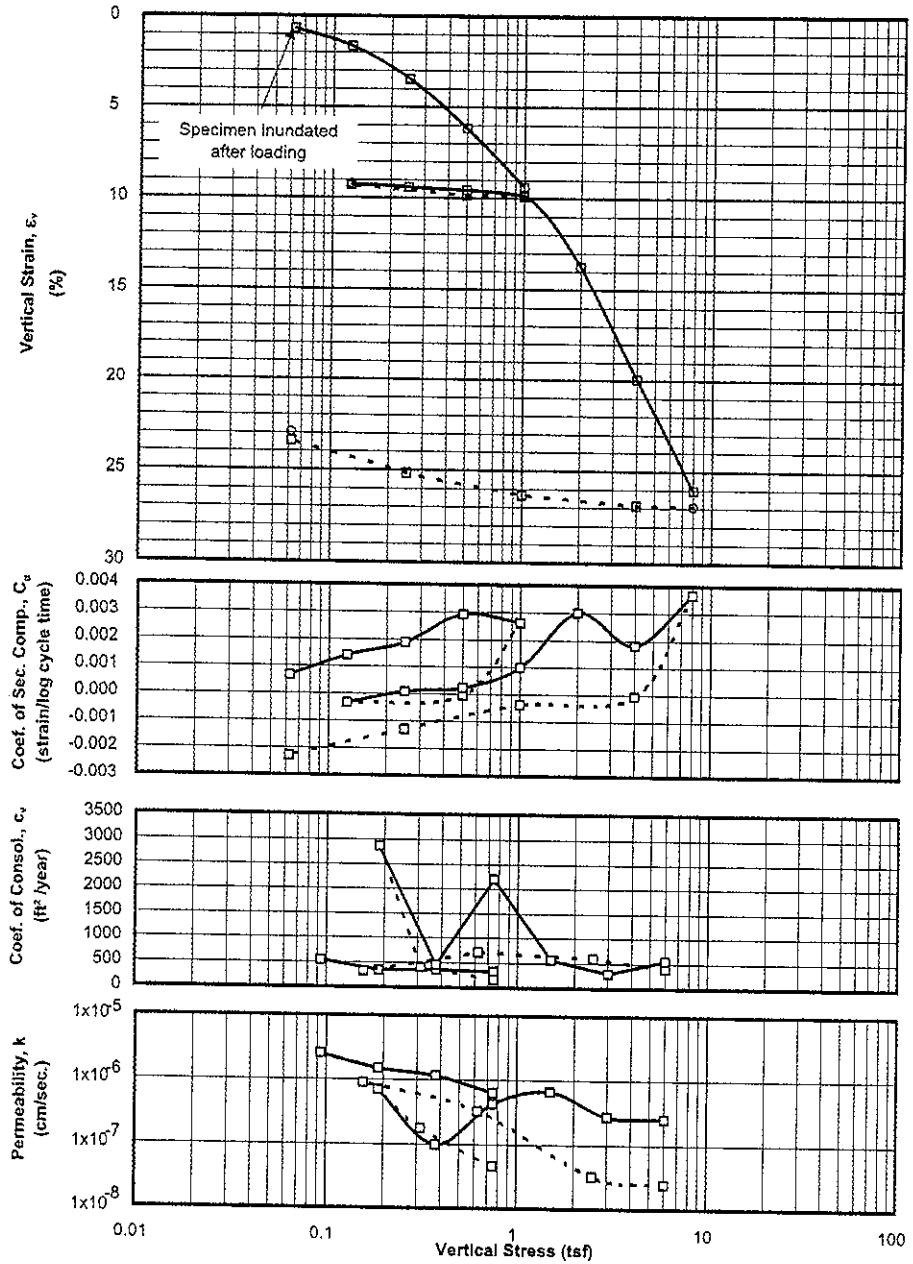
FAILURE SKETCH

Test Summary

q_u (tsf)	Strain to Peak (%)	Strain Rate (%/min)
0.29	2.7	0.76

Tested by: BB
Test Date: Jan-30-06
Reviewed by: CMJ

Project No. 31737848	Tremley Point Connector Road	UNCONFINED COMPRESSION TEST Boring: CR-74	
Geotesting Services, Inc.		Sample: TS-1B Depth:8.85	March 2006



SAMPLE INFORMATION

Boring:	A-5-3
Sample:	TS-1C
Depth:	5.75 feet
Elevation:	
Type:	3-inch thin wall tube
Description:	MH, dark gray clayey SILT, trace f. sand; odor noted. LL = 52, PL = 40, PI = 12

SPECIMEN INFORMATION

(NOTE: Initial and final states refer to beginning and end of test)

Initial height:	0.61	inch
Diameter:	2.50	inch

Initial water content:	93.6	%
Initial total unit weight:	89.2	pcf
Initial dry unit weight:	46.1	pcf
Initial void ratio:	2.643	
Initial degree of saturation:	95	%

Final water content:	70.8	%
Final total unit weight:	98.7	pcf
Final dry unit weight:	57.8	pcf
Final void ratio:	1.905	
Final degree of saturation:	100	% (assumed specific gravity = 2.69)

TEST SUMMARY

Construction Method:	Casagrande (Log)
Estimated preconsolidation stress (tsf):	1.0 (Range: 0.9 to 1.1)
Estimated in situ effective overburden stress (tsf):	
Compression Ratio (strain per log cycle stress):	0.204
Compression Index (void ratio per log cycle stress):	0.743
Swell Ratio (strain per log cycle stress):	0.009
Swell Index (void ratio per log cycle stress):	0.033
Recompression Ratio (strain per log cycle stress):	0.007
Recompression Index (void ratio per log cycle stress):	0.026
Remarks:	

LEGEND: □ End of primary ○ End of Stage ——— Loading - - - - - - Unloading

Test Date: 1/30/06 Tested By: RV Checked By: CMJ

Edwards and Kelcey	Tremley Point Connector Road	ONE DIMENSIONAL CONSOLIDATION TEST Boring: A-5-3 Depth: 5.75 feet
Geotesting Services, Inc.	Project No. 31737848-20	March 2006

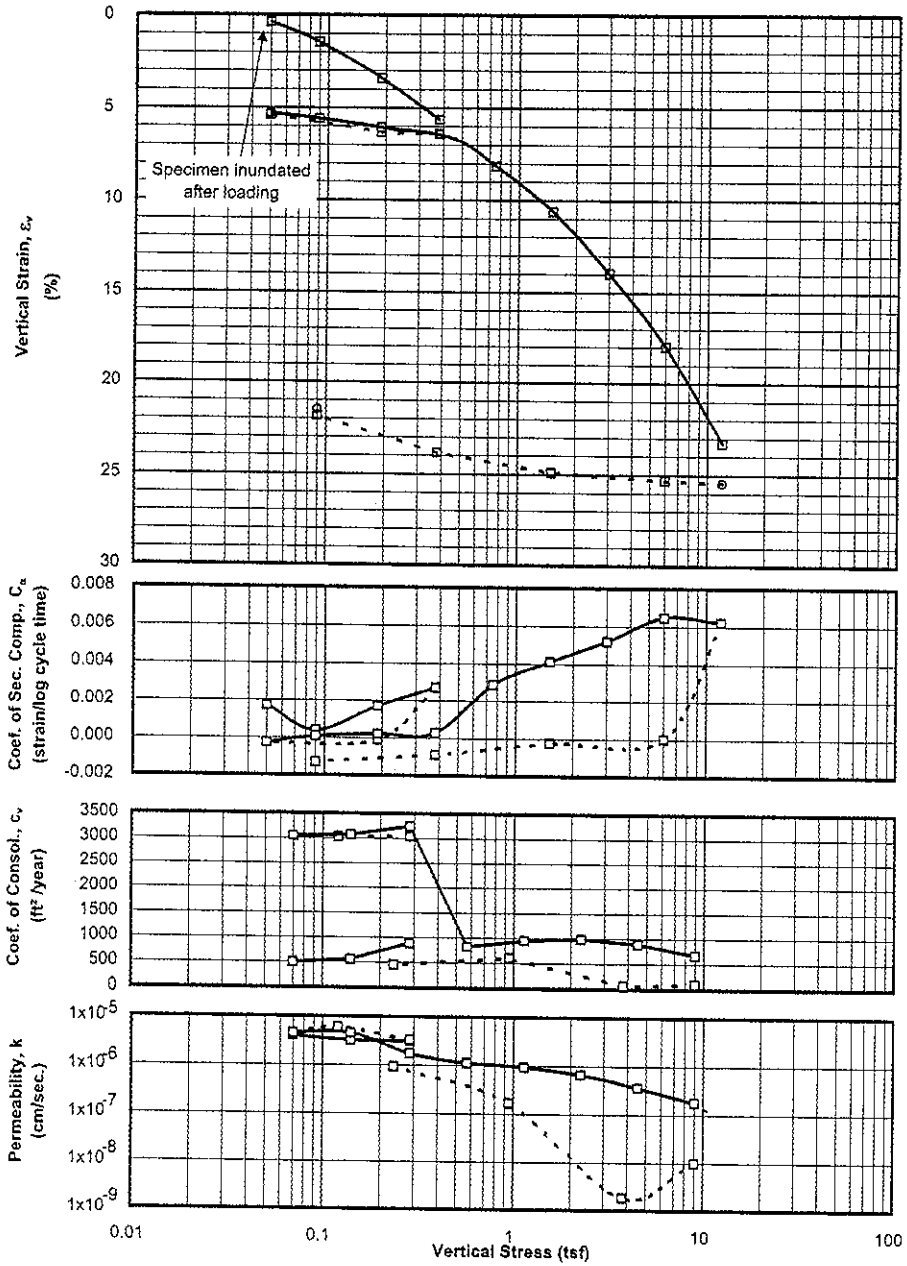
PROJECT:	Tremley Point Connector Road				
PROJECT NO.:	31737848-20	Initial height:	0.608 inch	Final height:	0.477 inch
BORING:	A-5-3	Initial water content:	93.6 %	Final water content:	70.8 %
SAMPLE:	TS-1C	Initial dry density:	46.1 pcf	Final dry density:	57.8 pcf
TEST:	C06019	Initial total density:	89.2 pcf	Final total density:	98.7 pcf
DEPTH, feet:	5.75	Initial saturation:	95 %	Final saturation:	100 %
BY:	RV	Initial void ratio:	2.643	Final void ratio:	1.905
TEST DATE:	1/30/2006			Final strain:	21.5 %

EQUIPMENT:
Load Frame No.: 7
Ring Diameter: 2.5 inch

SPECIMEN DESCRIPTION: MH, dark gray clayey SILT, trace f. sand; odor noted.

G	LL	PL	PI
2.69	52	40	12

Load No.	Load (tsf)	d_{100} (inch)	t_{100} Strain (%)	t_{100} Void Ratio (-)	Final Strain (%)	Final Void Ratio (-)	c_v (ft²/year)	C_α (strain/logt)	Constrained Modulus (tsf)	Permeability (cm/sec)
1	0.063	0.0041	0.678	2.619	0.873	2.612	317.87	0.0007	9.22	1.04E-06
2	0.125	0.0101	1.660	2.583	1.955	2.572	542.10	0.0014	6.37	2.57E-06
3	0.250	0.0211	3.470	2.517	3.820	2.504	345.39	0.0019	6.91	1.51E-06
4	0.500	0.0375	6.165	2.419	6.736	2.398	356.06	0.0029	9.28	1.16E-06
5	1.00	0.0571	9.389	2.301	9.896	2.283	324.86	0.0026	15.51	6.32E-07
6	0.500	0.0599	9.856	2.284	9.843	2.285	162.52	-0.0001	107.00	4.58E-08
7	0.125	0.0566	9.308	2.304	9.235	2.307	404.70	-0.0004	68.40	1.78E-07
8	0.250	0.0572	9.410	2.301	9.431	2.300	2861.46	0.0001	122.71	7.03E-07
9	0.500	0.0583	9.589	2.294	9.657	2.292	454.08	0.0002	139.71	9.80E-08
10	1.00	0.0603	9.910	2.282	10.260	2.270	2200.90	0.0010	155.69	4.26E-07
11	2.00	0.0836	13.750	2.142	14.458	2.117	569.36	0.0030	26.04	6.60E-07
12	4.00	0.1213	19.943	1.917	20.472	1.898	294.61	0.0018	32.29	2.75E-07
13	8.00	0.1583	26.037	1.695	26.931	1.662	556.79	0.0037	65.64	2.56E-07
14	4.00	0.1634	26.877	1.664	26.860	1.665	390.48	-0.0001	475.85	2.48E-08
15	1.00	0.1602	26.341	1.684	26.227	1.688	599.29	-0.0004	559.56	3.23E-08
16	0.250	0.1531	25.183	1.726	24.846	1.738	711.84	-0.0013	64.76	3.32E-07
17	0.063	0.1425	23.438	1.789	22.965	1.807	318.45	-0.0023	10.74	8.94E-07



SAMPLE INFORMATION

Boring:	A-5-4
Sample:	TS-1B
Depth:	3.25 feet
Elevation:	
Type:	3-inch thin wall tube
Description:	ML, gray SILT, trace f. sand.

LL = 38, PL = 32, PI = 6

SPECIMEN INFORMATION

(NOTE: Initial and final states refer to beginning and end of test)

Initial height:	0.62	inch
Diameter:	2.50	inch
Initial water content:	75.8	%
Initial total unit weight:	97.5	pcf
Initial dry unit weight:	55.5	pcf
Initial void ratio:	2.106	
Initial degree of saturation:	99	%
Final water content:	53.1	%
Final total unit weight:	107.1	pcf
Final dry unit weight:	69.9	pcf
Final void ratio:	1.464	
Final degree of saturation:	100	% (assumed specific gravity = 2.76)

TEST SUMMARY

Construction Method:	Casagrande (Log)
Estimated preconsolidation stress (tsf):	2.1 (Range: 1.6 to 2.8)
Estimated in situ effective overburden stress (tsf):	
Compression Ratio (strain per log cycle stress):	0.176
Compression Index (void ratio per log cycle stress):	0.547
Swell Ratio (strain per log cycle stress):	0.016
Swell Index (void ratio per log cycle stress):	0.050
Recompression Ratio (strain per log cycle stress):	0.012
Recompression Index (void ratio per log cycle stress):	0.037
Remarks:	

LEGEND: ☐ End of primary ○ End of Stage ——— Loading - - - - - - Unloading

Test Date: 1/31/06 Tested By: RV Checked By: GET

Edwards and Kelcey	Tremley Point Connector Road	ONE DIMENSIONAL CONSOLIDATION TEST Boring: A-5-4 Depth: 3.25 feet
Geotesting Services, Inc.	Project No. 31737848	March 2006

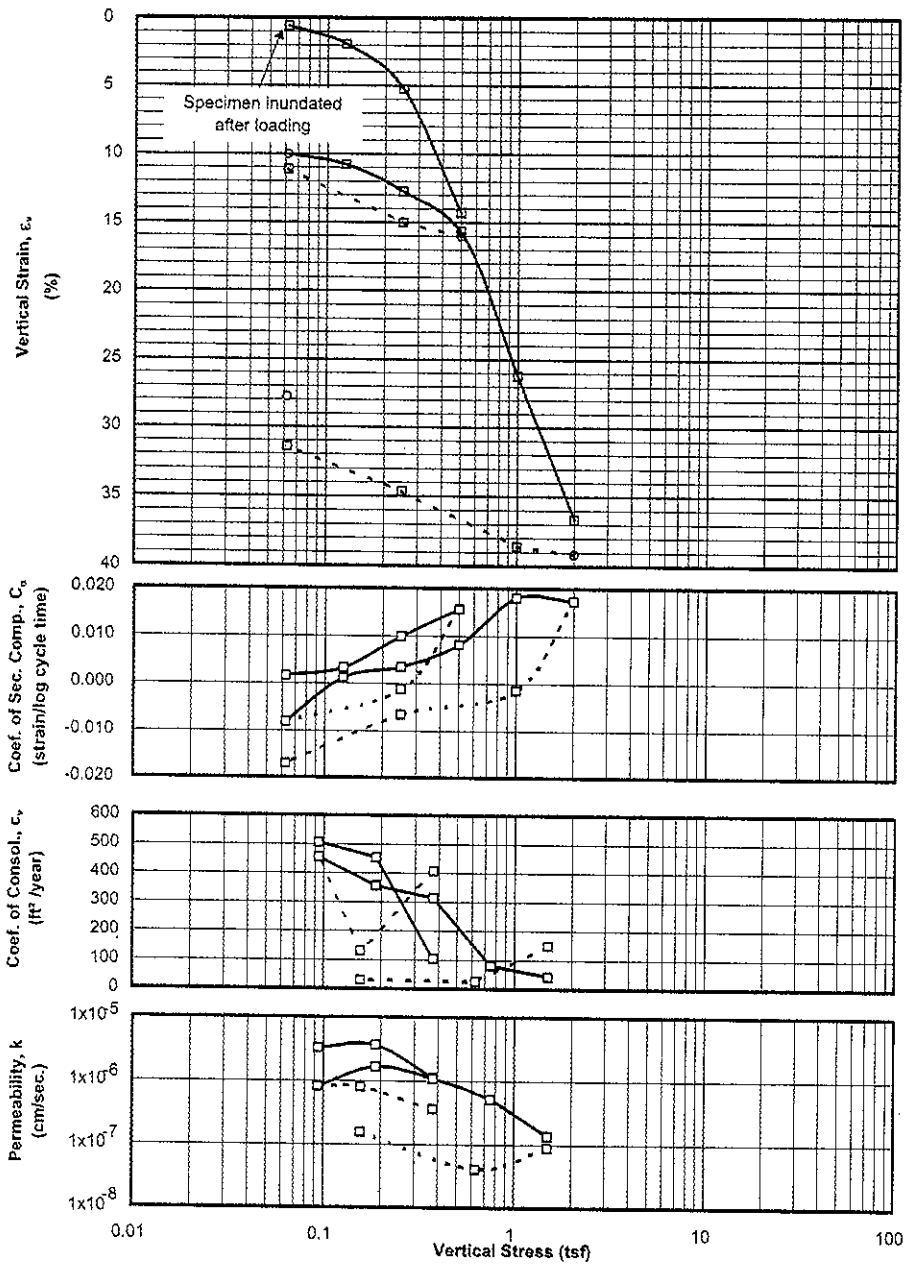
PROJECT:	Tremley Point Connector Road				
PROJECT NO.:	31737848	Initial height:	0.617 inch	Final height:	0.490 inch
BORING:	A-5-4	Initial water content:	75.8 %	Final water content:	53.1 %
SAMPLE:	TS-1B	Initial dry density:	55.5 pcf	Final dry density:	69.9 pcf
TEST:	C06020	Initial total density:	97.5 pcf	Final total density:	107.1 pcf
DEPTH, feet:	3.25	Initial saturation:	99 %	Final saturation:	100 %
BY:	RV	Initial void ratio:	2.106	Final void ratio:	1.464
TEST DATE:	1/31/2006			Final strain:	20.7 %

EQUIPMENT:
Load Frame No.: 3
Ring Diameter: 2.5 inch

SPECIMEN DESCRIPTION: ML, gray SILT, trace f. sand.

G	LL	PL	PI
2.76	38	32	6

Load No.	Load (tsf)	d_{100} (inch)	t_{100} Strain (%)	t_{100} Void Ratio (-)	Final Strain (%)	Final Void Ratio (-)	c_v (ft²/year)	C_α (strain/logt)	Constrained Modulus (tsf)	Permeability (cm/sec)
1	0.050	0.0023	0.373	2.095	1.168	2.070	1706.96	0.0017	13.42	3.84E-06
2	0.090	0.0090	1.459	2.061	1.535	2.059	490.14	0.0004	3.68	4.02E-06
3	0.190	0.0210	3.401	2.001	3.769	1.989	556.60	0.0017	5.15	3.26E-06
4	0.380	0.0348	5.630	1.932	6.451	1.906	878.17	0.0027	8.52	3.11E-06
5	0.190	0.0390	6.323	1.910	6.283	1.911	3038.46	-0.0001	27.42	3.34E-06
6	0.050	0.0333	5.387	1.939	5.294	1.942	3029.55	-0.0003	14.95	6.11E-06
7	0.090	0.0345	5.586	1.933	5.598	1.933	3043.59	0.0001	20.16	4.55E-06
8	0.190	0.0375	6.080	1.918	6.143	1.916	3068.76	0.0002	20.22	4.58E-06
9	0.380	0.0396	6.417	1.907	6.511	1.904	3242.97	0.0003	56.46	1.73E-06
10	0.760	0.0503	8.151	1.853	9.096	1.824	817.37	0.0029	21.91	1.13E-06
11	1.51	0.0655	10.615	1.777	11.699	1.743	951.38	0.0041	30.44	9.43E-07
12	3.00	0.0862	13.967	1.673	15.369	1.629	985.24	0.0052	44.44	6.69E-07
13	6.00	0.1109	17.969	1.548	19.650	1.496	887.72	0.0065	74.97	3.57E-07
14	12.0	0.1436	23.265	1.384	25.445	1.316	668.74	0.0062	113.28	1.78E-07
15	6.00	0.1563	25.313	1.320	25.321	1.320	96.93	0.0000	292.97	9.98E-09
16	1.51	0.1537	24.902	1.333	24.850	1.335	66.97	-0.0003	1091.63	1.85E-09
17	0.380	0.1473	23.854	1.365	23.616	1.373	600.17	-0.0009	107.82	1.68E-07
18	0.090	0.1348	21.839	1.428	21.510	1.438	449.37	-0.0013	14.39	9.42E-07



SAMPLE INFORMATION

Boring:	A-7-1
Sample:	A
Depth:	10.45 feet
Elevation:	
Type:	3-inch thin wall tube
Description:	PT, dark brown PEAT, trace sand.

LL = 258, PL = 105, PI = 153

SPECIMEN INFORMATION

(NOTE: Initial and final states refer to beginning and end of test)

Initial height:	0.61	inch
Diameter:	2.50	inch

Initial water content:	154.2	%
Initial total unit weight:	80.2	pcf
Initial dry unit weight:	31.5	pcf
Initial void ratio:	3.650	
Initial degree of saturation:	99	%
Final water content:	110.0	%
Final total unit weight:	86.0	pcf
Final dry unit weight:	40.9	pcf
Final void ratio:	2.584	
Final degree of saturation:	100	% (assumed specific gravity = 2.35)

TEST SUMMARY

Construction Method:	Casagrande (Log)
Estimated preconsolidation stress (tsf):	0.3 (Range: 0.3 to 0.3)
Estimated in situ effective overburden stress (tsf):	
Compression Ratio (strain per log cycle stress):	0.396
Compression Index (void ratio per log cycle stress):	1.841
Swell Ratio (strain per log cycle stress):	0.064
Swell Index (void ratio per log cycle stress):	0.298
Recompression Ratio (strain per log cycle stress):	0.051
Recompression Index (void ratio per log cycle stress):	0.237
Remarks:	

LEGEND: ☐ End of primary ○ End of Stage ——— Loading - - - - - - Unloading

Test Date: 1/25/06 Tested By: RV Checked By: CMJ

Edwards and Kelcey	Tremley Point Connector Road	ONE DIMENSIONAL CONSOLIDATION TEST Boring: A-7-1 Depth: 10.45 feet
Geotesting Services, Inc.	Project No. 31737848	March 2006

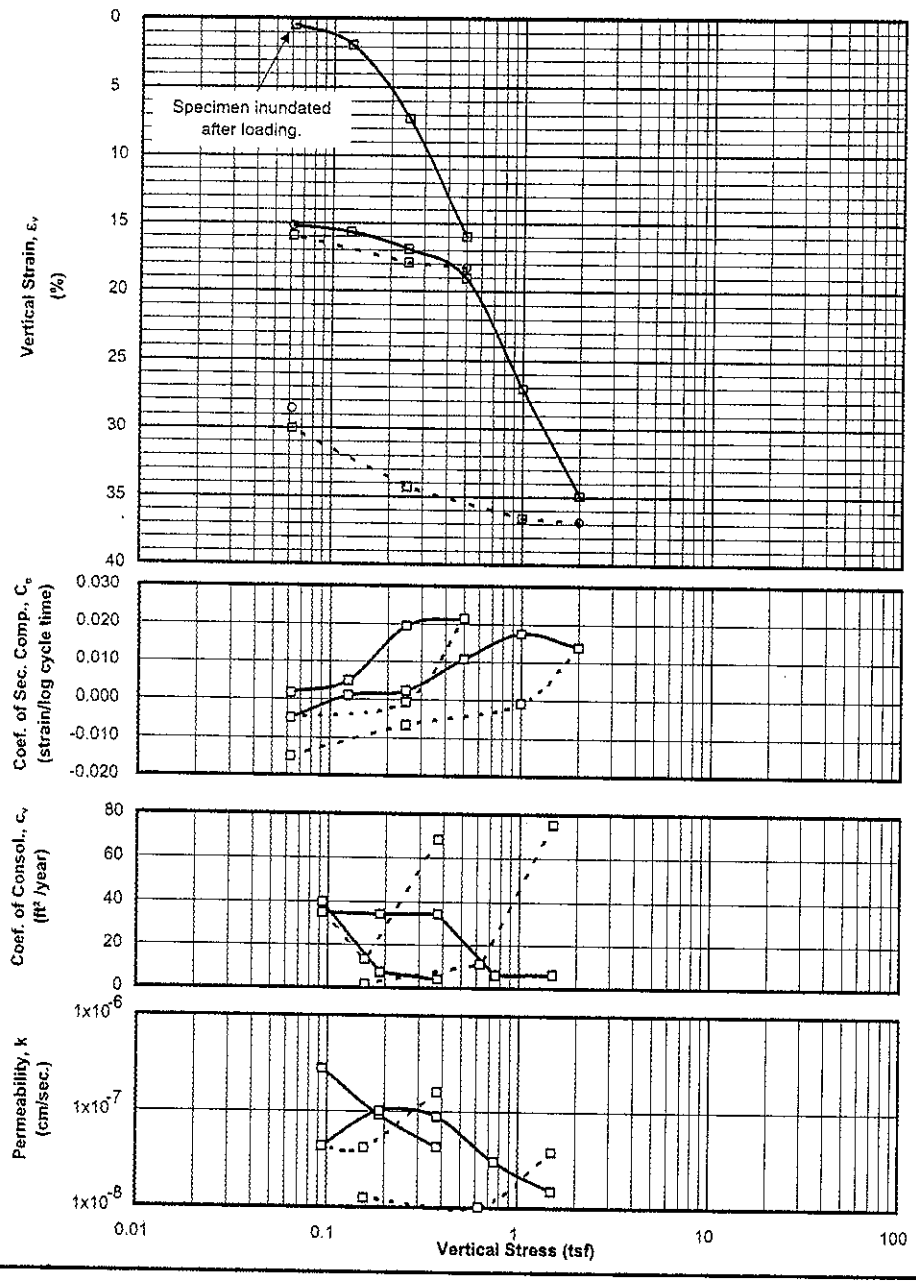
PROJECT:	Tremley Point Connector Road				
PROJECT NO.:	31737848	Initial height:	0.606 inch	Final height:	0.467 inch
BORING:	A-7-1	Initial water content:	154.2 %	Final water content:	110.0 %
SAMPLE:	A	Initial dry density:	31.5 pcf	Final dry density:	40.9 pcf
TEST:	c06013	Initial total density:	80.2 pcf	Final total density:	86.0 pcf
DEPTH, feet:	10.45	Initial saturation:	99 %	Final saturation:	100 %
BY:	RV	Initial void ratio:	3.650	Final void ratio:	2.584
TEST DATE:	1/25/2006			Final strain:	23.0 %

EQUIPMENT:
Load Frame No.: 5
Ring Diameter: 2.5 inch

SPECIMEN DESCRIPTION: PT, dark brown PEAT, trace sand.

G	LL	PL	PI
2.35	258	105	153

Load No.	Load (tsf)	d_{100} (inch)	t_{100} Strain (%)	t_{100} Void Ratio (-)	Final Strain (%)	Final Void Ratio (-)	c_v (ft²/year)	C_α (strain/logt)	Constrained Modulus (tsf)	Permeability (cm/sec)
1	0.063	0.0034	0.565	3.624	0.575	3.623	630.44	0.0016	11.06	1.72E-06
2	0.125	0.0117	1.931	3.560	2.632	3.528	505.70	0.0033	4.58	3.33E-06
3	0.250	0.0321	5.288	3.404	8.439	3.258	453.33	0.0099	3.72	3.67E-06
4	0.500	0.0867	14.292	2.985	16.027	2.905	104.13	0.0156	2.78	1.13E-06
5	0.250	0.0911	15.031	2.951	14.745	2.964	406.84	-0.0013	33.84	3.63E-07
6	0.063	0.0677	11.162	3.131	10.033	3.184	130.60	-0.0082	4.85	8.13E-07
7	0.125	0.0654	10.790	3.148	11.072	3.135	456.10	0.0012	16.80	8.19E-07
8	0.250	0.0773	12.753	3.057	13.486	3.023	354.62	0.0034	6.37	1.68E-06
9	0.500	0.0950	15.666	2.922	17.173	2.852	313.36	0.0081	8.58	1.10E-06
10	1.00	0.1590	26.226	2.431	30.001	2.255	80.72	0.0180	4.73	5.14E-07
11	2.00	0.2222	36.638	1.946	39.146	1.830	43.31	0.0174	9.60	1.36E-07
12	1.00	0.2341	38.606	1.855	38.307	1.869	149.55	-0.0015	50.81	8.88E-08
13	0.250	0.2103	34.681	2.037	33.680	2.084	25.69	-0.0066	19.11	4.06E-08
14	0.063	0.1907	31.453	2.187	27.785	2.358	29.70	-0.0171	5.81	1.54E-07



SAMPLE INFORMATION

Boring:	A-7-3
Sample:	B
Depth:	8.90 feet
Elevation:	
Type:	3-inch thin wall tube
Description:	CH-OH, gray ORGANIC CLAY, trace f. sand.

LL = 106, PL = 37, PI = 69

SPECIMEN INFORMATION

(NOTE: Initial and final states refer to beginning and end of test)

Initial height:	0.61	inch
Diameter:	2.50	inch

Initial water content:	129.4	%
Initial total unit weight:	86.7	pcf
Initial dry unit weight:	37.8	pcf
Initial void ratio:	3.620	
Initial degree of saturation:	100	%
Final water content:	95.0	%
Final total unit weight:	92.2	pcf
Final dry unit weight:	47.3	pcf
Final void ratio:	2.695	
Final degree of saturation:	99	% (assumed specific gravity = 2.80)

TEST SUMMARY

Construction Method:	Casagrande (Log)
Estimated preconsolidation stress (tsf):	0.3 (Range: 0.2 to 0.3)
Estimated in situ effective overburden stress (tsf):	
Compression Ratio (strain per log cycle stress):	0.369
Compression Index (void ratio per log cycle stress):	1.705
Swell Ratio (strain per log cycle stress):	0.038
Swell Index (void ratio per log cycle stress):	0.176
Recompression Ratio (strain per log cycle stress):	0.035
Recompression Index (void ratio per log cycle stress):	0.162
Remarks:	

LEGEND: ☐ End of primary ○ End of Stage ——— Loading - - - - - - Unloading

Test Date: 1/25/06 Tested By: RV Checked By: GET

Edwards and Kelcey	Tremley Point Connector Road	ONE DIMENSIONAL CONSOLIDATION TEST Boring: A-7-3 Depth: 8.90 feet
Geotesting Services, Inc.	Project No. 31737848	March 2006

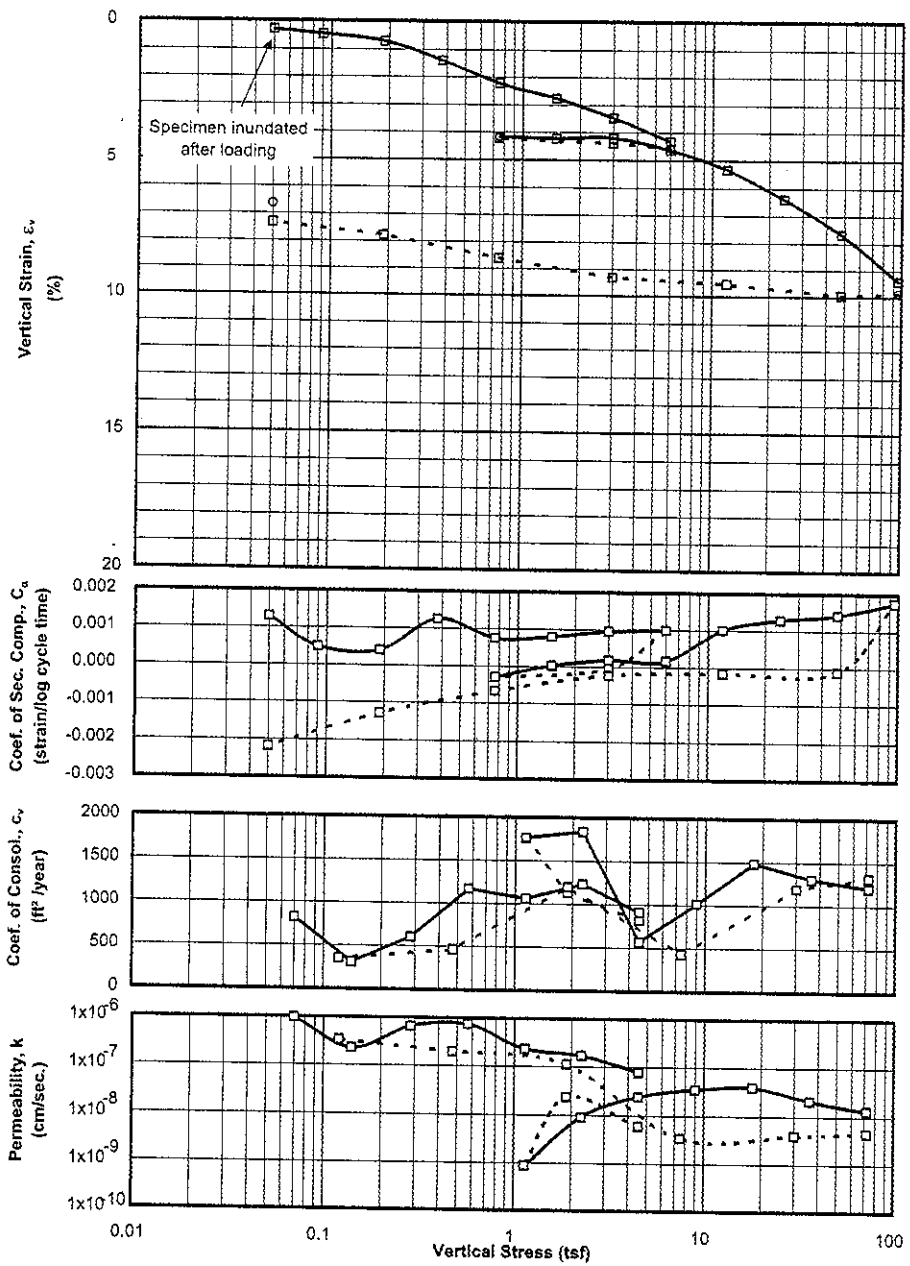
PROJECT:	Tremley Point Connector Road				
PROJECT NO.:	31737848	Initial height:	0.606 inch	Final height:	0.484 inch
BORING:	A-7-3	Initial water content:	129.4 %	Final water content:	95.0 %
SAMPLE:	B	Initial dry density:	37.8 pcf	Final dry density:	47.3 pcf
TEST:	C06014	Initial total density:	86.7 pcf	Final total density:	92.2 pcf
DEPTH, feet:	8.9	Initial saturation:	100 %	Final saturation:	99 %
BY:	RV	Initial void ratio:	3.620	Final void ratio:	2.695
TEST DATE:	1/25/2006			Final strain:	20.2 %

EQUIPMENT:
Load Frame No.: 4
Ring Diameter: 2.5 inch

SPECIMEN DESCRIPTION: CH-OH, gray ORGANIC CLAY, trace f. sand.

G	LL	PL	PI
2.79784726	106	37	69

Load No.	Load (tsf)	d_{100} (inch)	t_{100} Strain (%)	t_{100} Void Ratio (-)	Final Strain (%)	Final Void Ratio (-)	c_v (ft²/year)	C_α (strain/logt)	Constrained Modulus (tsf)	Permeability (cm/sec)
1	0.063	0.0026	0.432	3.600	0.433	3.600	190.46	0.0017	14.48	3.97E-07
2	0.125	0.0114	1.889	3.532	2.855	3.488	39.62	0.0049	4.29	2.79E-07
3	0.250	0.0440	7.268	3.284	9.711	3.171	7.07	0.0194	2.32	9.18E-08
4	0.500	0.0968	15.981	2.881	18.279	2.775	4.07	0.0215	2.87	4.28E-08
5	0.250	0.1086	17.918	2.792	17.794	2.798	68.37	-0.0005	12.91	1.60E-07
6	0.063	0.0966	15.944	2.883	15.212	2.917	13.05	-0.0050	9.50	4.15E-08
7	0.125	0.0951	15.688	2.895	15.821	2.889	34.84	0.0010	24.42	4.30E-08
8	0.250	0.1025	16.920	2.838	17.253	2.823	34.06	0.0023	10.15	1.01E-07
9	0.500	0.1154	19.048	2.740	21.464	2.628	34.38	0.0107	11.75	8.82E-08
10	1.00	0.1642	27.093	2.368	29.469	2.258	6.15	0.0175	6.22	2.99E-08
11	2.00	0.2115	34.898	2.008	36.858	1.917	6.38	0.0139	12.81	1.50E-08
12	1.00	0.2217	36.584	1.930	36.436	1.936	75.46	-0.0009	59.29	3.84E-08
13	0.250	0.2078	34.288	2.036	33.454	2.074	11.03	-0.0067	32.66	1.02E-08
14	0.063	0.1821	30.046	2.232	28.575	2.300	1.83	-0.0149	4.42	1.25E-08



SAMPLE INFORMATION

Boring:	CR-10
Sample:	B
Depth:	8.90 feet
Elevation:	
Type:	3-inch thin wall tube
Description:	CL, brown silty CLAY, trace f. sand.

LL = 28, PL = 20, PI = 8

SPECIMEN INFORMATION

(NOTE: Initial and final states refer to beginning and end of test)

Initial height:	0.62	inch
Diameter:	2.50	inch

Initial water content:	21.6	%
Initial total unit weight:	127.9	pcf
Initial dry unit weight:	105.2	pcf
Initial void ratio:	0.591	
Initial degree of saturation:	98	%
Final water content:	19.7	%
Final total unit weight:	131.1	pcf
Final dry unit weight:	109.5	pcf
Final void ratio:	0.528	
Final degree of saturation:	100	% (assumed specific gravity = 2.68)

TEST SUMMARY

Construction Method:	Casagrande (Log)
Estimated preconsolidation stress (tsf):	4.7 (Range: 0.8 to 14.0)
Estimated in situ effective overburden stress (tsf):	
Compression Ratio (strain per log cycle stress):	0.039
Compression Index (void ratio per log cycle stress):	0.062
Swell Ratio (strain per log cycle stress):	0.003
Swell Index (void ratio per log cycle stress):	0.005
Recompression Ratio (strain per log cycle stress):	0.004
Recompression Index (void ratio per log cycle stress):	0.006
Remarks:	

LEGEND: □ End of primary ○ End of Stage ——— Loading - - - - - - Unloading

Test Date: 1/16/06 Tested By: RV Checked By: GET

Edwards and Kelcey	Tremley Point Connector Road	ONE DIMENSIONAL CONSOLIDATION TEST Boring: CR-10 Depth: 8.90 feet
Geotesting Services, Inc.	Project No. 31737848-20	March 2006

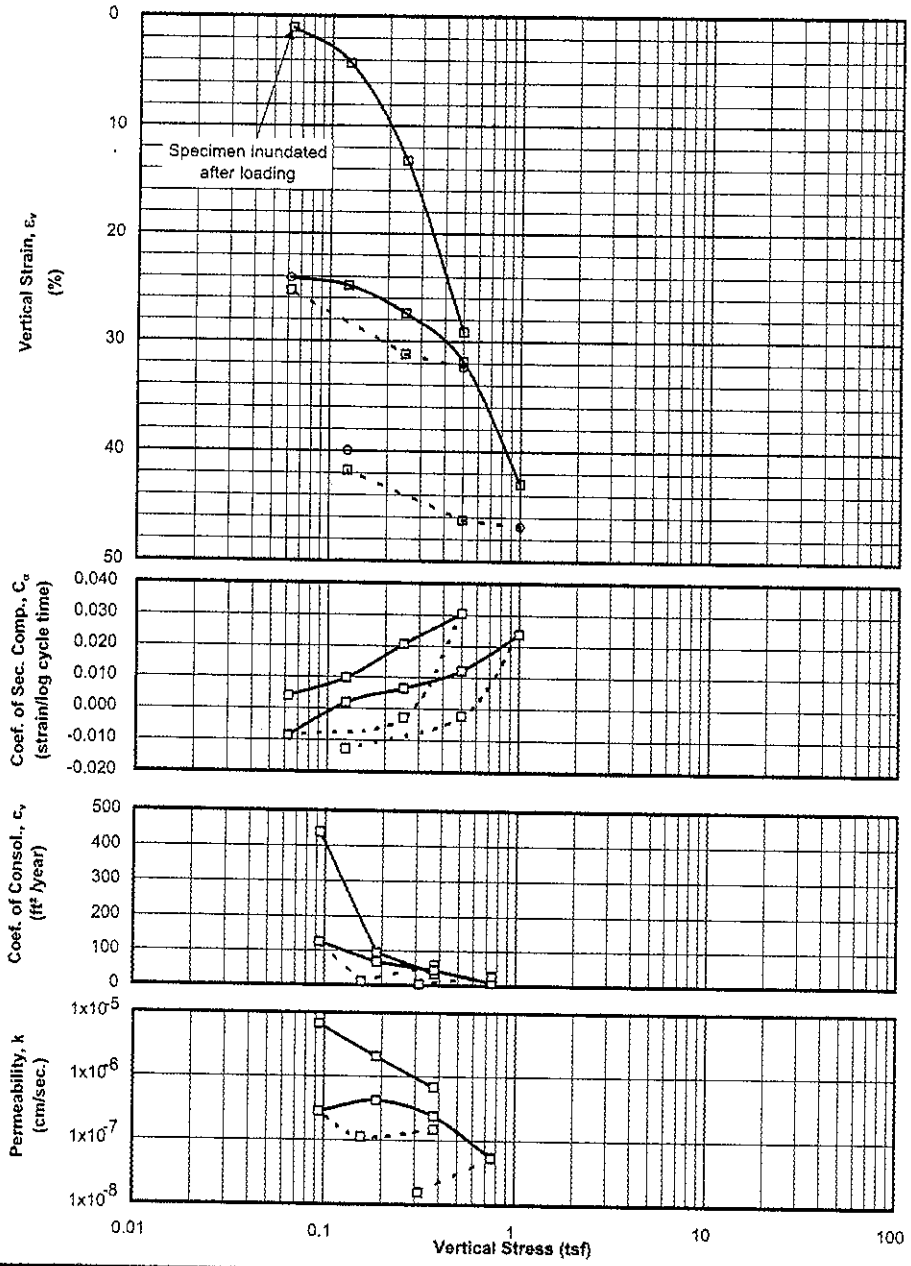
PROJECT:	Tremley Point Connector Road				
PROJECT NO.:	31737848-20	Initial height:	0.617 inch	Final height:	0.591 inch
BORING:	CR-10	Initial water content:	21.6 %	Final water content:	19.7 %
SAMPLE:	B	Initial dry density:	105.2 pcf	Final dry density:	109.5 pcf
TEST:	C06012	Initial total density:	127.9 pcf	Final total density:	131.1 pcf
DEPTH, feet:	8.9	Initial saturation:	98 %	Final saturation:	100 %
BY:	RV	Initial void ratio:	0.591	Final void ratio:	0.528
TEST DATE:	1/16/2006			Final strain:	4.3 %

EQUIPMENT:
Load Frame No.: 2
Ring Diameter: 2.5 inch

SPECIMEN DESCRIPTION: CL, brown silty CLAY, trace f. sand.

G	LL	PL	PI
2.68	28	20	8

Load No.	Load (tsf)	d_{100} (inch)	t_{100} Strain (%)	t_{100} Void Ratio (-)	Final Strain (%)	Final Void Ratio (-)	c_v (ft²/year)	C_α (strain/logt)	Constrained Modulus (tsf)	Permeability (cm/sec)
1	0.050	0.0020	0.316	0.586	0.433	0.584	1535.67	0.0013	15.80	2.93E-06
2	0.090	0.0029	0.474	0.584	0.640	0.581	815.71	0.0005	25.43	9.68E-07
3	0.190	0.0045	0.722	0.580	0.803	0.578	308.12	0.0004	40.32	2.31E-07
4	0.380	0.0087	1.414	0.569	1.686	0.564	597.23	0.0013	27.46	6.56E-07
5	0.760	0.0137	2.220	0.556	2.405	0.553	1164.13	0.0008	47.11	7.45E-07
6	1.51	0.0171	2.772	0.547	2.964	0.544	1060.40	0.0008	135.86	2.35E-07
7	3.00	0.0214	3.461	0.536	3.848	0.530	1228.44	0.0010	216.45	1.71E-07
8	6.00	0.0267	4.320	0.522	4.556	0.519	909.26	0.0010	349.31	7.85E-08
9	3.00	0.0271	4.392	0.521	4.384	0.521	811.93	-0.0001	4119.36	5.95E-09
10	0.760	0.0262	4.237	0.524	4.162	0.525	1125.30	-0.0003	1443.90	2.35E-08
11	1.51	0.0262	4.236	0.524	4.220	0.524	1765.50	0.0000	60817.47	8.76E-10
12	3.00	0.0260	4.212	0.524	4.256	0.523	1839.89	0.0002	6094.36	9.11E-09
13	6.00	0.0287	4.641	0.517	4.662	0.517	565.49	0.0002	698.37	2.44E-08
14	12.0	0.0329	5.333	0.506	5.706	0.500	1009.89	0.0010	866.82	3.51E-08
15	24.0	0.0395	6.394	0.489	6.717	0.484	1486.69	0.0013	1131.38	3.96E-08
16	48.0	0.0474	7.675	0.469	8.053	0.463	1306.42	0.0014	1873.43	2.10E-08
17	96.1	0.0580	9.397	0.442	9.866	0.434	1201.29	0.0018	2792.59	1.30E-08
18	48.0	0.0614	9.939	0.433	9.911	0.433	1319.75	-0.0001	8877.07	4.49E-09
19	12.0	0.0589	9.542	0.439	9.493	0.440	1189.24	-0.0002	9060.68	3.96E-09
20	3.00	0.0575	9.308	0.443	9.249	0.444	428.77	-0.0002	3842.70	3.37E-09
21	0.760	0.0532	8.610	0.454	8.424	0.457	1196.84	-0.0007	321.01	1.12E-07
22	0.190	0.0480	7.781	0.467	7.472	0.472	460.91	-0.0013	68.73	2.02E-07
23	0.050	0.0453	7.331	0.474	6.646	0.485	350.36	-0.0022	31.14	3.39E-07



SAMPLE INFORMATION

Boring:	CR-24
Sample:	D
Depth:	7.80 feet
Elevation:	
Type:	3-inch thin wall tube
Description:	PT, brown fibrous PEAT.

LL = 398, PL = 144, PI = 254

SPECIMEN INFORMATION

(NOTE: Initial and final states refer to beginning and end of test)

Initial height:	0.62	inch
Diameter:	2.50	inch

Initial water content:	557.8	%
Initial total unit weight:	65.6	pcf
Initial dry unit weight:	9.97	pcf
Initial void ratio:	10.147	
Initial degree of saturation:	98	%
Final water content:	391.2	%
Final total unit weight:	68.6	pcf
Final dry unit weight:	14.0	pcf
Final void ratio:	6.961	
Final degree of saturation:	100	% (assumed specific gravity = 1.78)

TEST SUMMARY

Construction Method:	Casagrande (Log)
Estimated preconsolidation stress (tsf):	0.2 (Range: 0.2 to 0.3)
Estimated in situ effective overburden stress (tsf):	
Compression Ratio (strain per log cycle stress):	0.460
Compression Index (void ratio per log cycle stress):	5.127
Swell Ratio (strain per log cycle stress):	0.098
Swell Index (void ratio per log cycle stress):	1.092
Recompression Ratio (strain per log cycle stress):	0.086
Recompression Index (void ratio per log cycle stress):	0.959
Remarks:	

LEGEND: □ End of primary ○ End of Stage ——— Loading - - - - - - Unloading

Test Date: 1/4/06 Tested By: RV Checked By: GET

Edwards and Kelcey	Tremley Point Connector Road	ONE DIMENSIONAL CONSOLIDATION TEST Boring: CR-24 Depth: 7.80 feet
Geotesting Services, Inc.	Project No. 31737848-20	March 2006

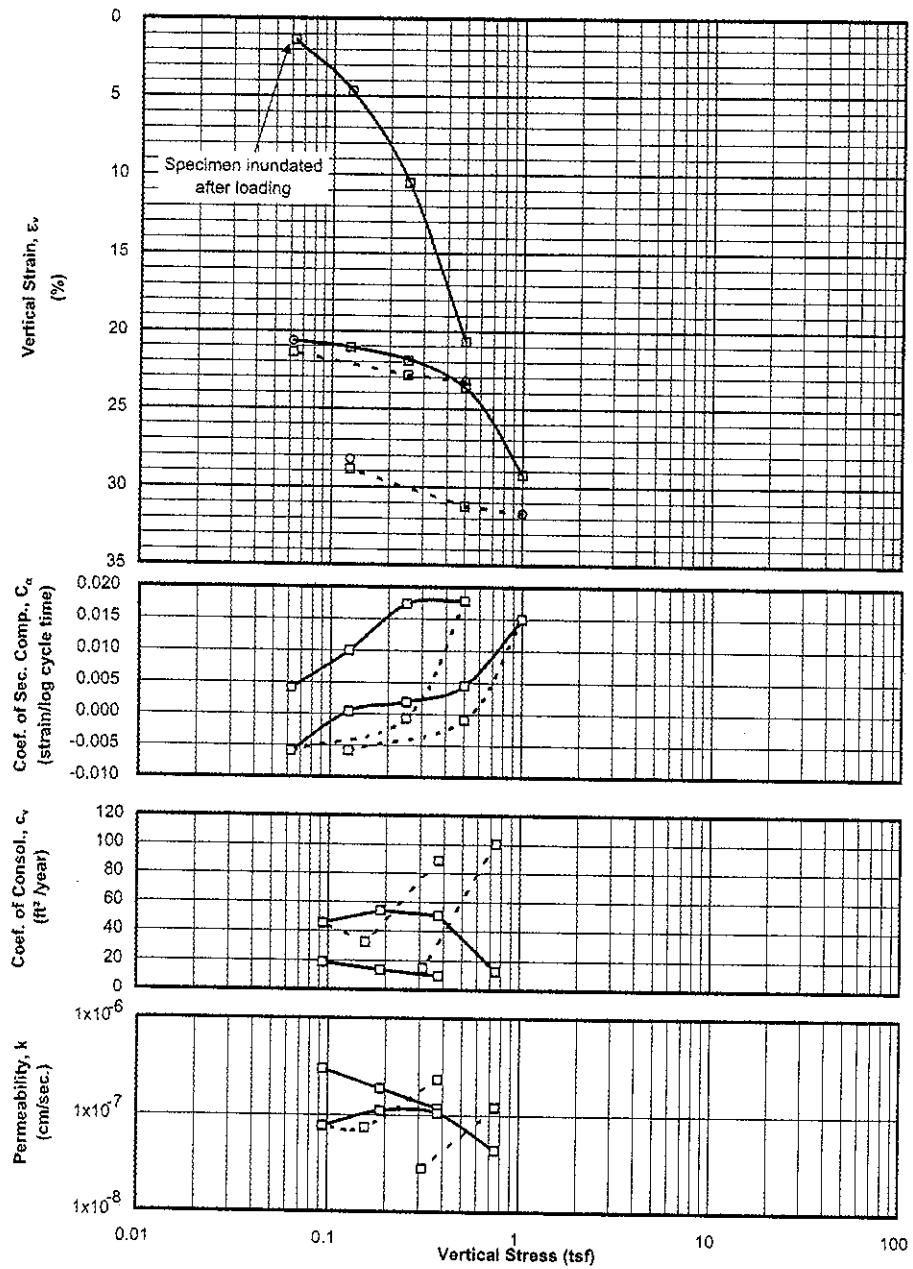
PROJECT:	Tremley Point Connector Road				
PROJECT NO.:	31737848-20	Initial height:	0.623 inch	Final height:	0.445 inch
BORING:	CR-24	Initial water content:	557.8 %	Final water content:	391.2 %
SAMPLE:	D	Initial dry density:	9.97 pcf	Final dry density:	14.0 pcf
TEST:	C06002	Initial total density:	65.6 pcf	Final total density:	68.6 pcf
DEPTH, feet:	7.8	Initial saturation:	98 %	Final saturation:	100 %
BY:	RV	Initial void ratio:	10.147	Final void ratio:	6.961
TEST DATE:	1/4/2006			Final strain:	28.6 %

EQUIPMENT:
Load Frame No.: 1
Ring Diameter: 2.5 inch

SPECIMEN DESCRIPTION: PT, brown fibrous PEAT.

G	LL	PL	PI
1.78	398	144	254

Load No.	Load (tsf)	d_{100} (inch)	t_{100} Strain (%)	t_{100} Void Ratio (-)	Final Strain (%)	Final Void Ratio (-)	c_v (ft^2/year)	C_α (strain/logt)	Constrained Modulus (tsf)	Permeability (cm/sec)
1	0.063	0.0066	1.060	10.028	1.987	9.925	676.02	0.0038	5.90	3.46E-06
2	0.125	0.0265	4.261	9.672	7.516	9.309	439.27	0.0097	1.95	6.79E-06
3	0.250	0.0823	13.218	8.673	15.402	8.430	94.39	0.0205	1.40	2.04E-06
4	0.500	0.1814	29.110	6.902	32.383	6.537	34.96	0.0305	1.57	6.70E-07
5	0.250	0.1943	31.182	6.671	30.762	6.718	59.55	-0.0030	12.07	1.49E-07
6	0.063	0.1576	25.304	7.326	24.145	7.455	11.93	-0.0087	3.19	1.13E-07
7	0.125	0.1548	24.843	7.377	25.056	7.354	124.42	0.0017	13.56	2.77E-07
8	0.250	0.1709	27.427	7.089	28.190	7.004	66.57	0.0064	4.84	4.15E-07
9	0.500	0.1982	31.816	6.600	33.112	6.456	44.79	0.0121	5.70	2.37E-07
10	1.00	0.2676	42.952	5.359	46.852	4.924	8.32	0.0239	4.49	5.59E-08
11	0.500	0.2881	46.238	4.993	45.955	5.024	27.48	-0.0023	15.22	5.45E-08
12	0.125	0.2600	41.735	5.495	39.995	5.689	4.33	-0.0128	8.33	1.57E-08



SAMPLE INFORMATION

Boring:	CR-36
Sample:	ST-1B
Depth:	6.05 feet
Elevation:	
Type:	3-inch thin wall tube
Description:	CH-OH, gray CLAY, trace f. sand.

LL = 122, PL = 42, PI = 80

SPECIMEN INFORMATION

(NOTE: Initial and final states refer to beginning and end of test)

Initial height:	0.61	inch
Diameter:	2.50	inch
Initial water content:	142.4	%
Initial total unit weight:	83.2	pcf
Initial dry unit weight:	34.3	pcf
Initial void ratio:	3.802	
Initial degree of saturation:	99	%
Final water content:	102.6	%
Final total unit weight:	90.0	pcf
Final dry unit weight:	44.4	pcf
Final void ratio:	2.709	
Final degree of saturation:	100	% (assumed specific gravity = 2.64)

TEST SUMMARY

Construction Method:	Casagrande (Log)
Estimated preconsolidation stress (tsf):	0.2 (Range: 0.2 to 0.2)
Estimated in situ effective overburden stress (tsf):	
Compression Ratio (strain per log cycle stress):	0.338
Compression Index (void ratio per log cycle stress):	1.623
Swell Ratio (strain per log cycle stress):	0.024
Swell Index (void ratio per log cycle stress):	0.115
Recompression Ratio (strain per log cycle stress):	0.025
Recompression Index (void ratio per log cycle stress):	0.120
Remarks:	

LEGEND: ☐ End of primary ○ End of Stage ——— Loading - - - - - - Unloading

Test Date: 1/4/06 Tested By: RV Checked By: CMJ

Edwards and Kelcey	Tremley Point Connector Road	ONE DIMENSIONAL CONSOLIDATION TEST Boring: CR-36 Depth: 6.05 feet
Geotesting Services, Inc.	Project No. 31737848	March 2006

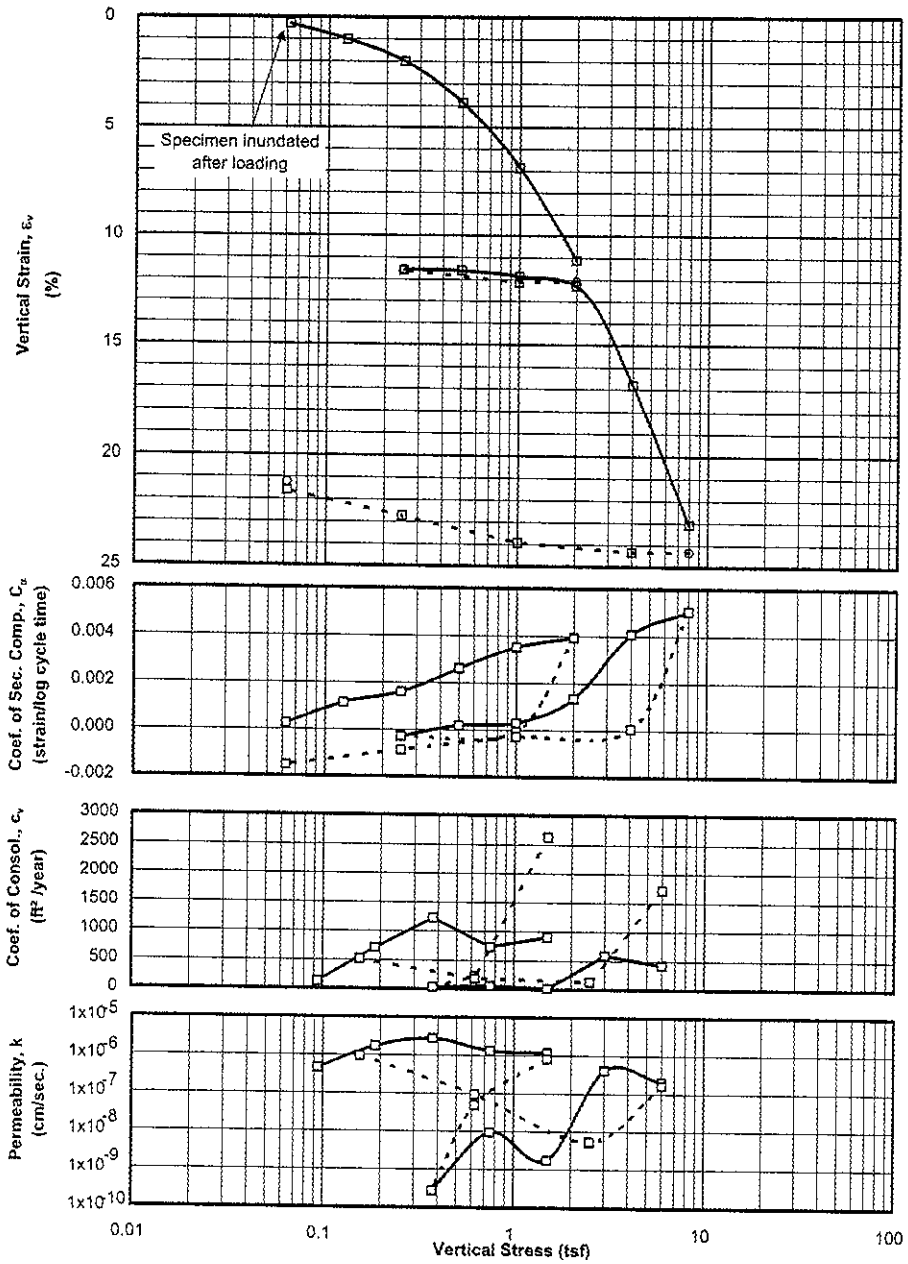
PROJECT:	Tremley Point Connector Road				
PROJECT NO.:	31737848	Initial height:	0.609 inch	Final height:	0.469 inch
BORING:	CR-36	Initial water content:	142.4 %	Final water content:	102.6 %
SAMPLE:	ST-1B	Initial dry density:	34.3 pcf	Final dry density:	44.4 pcf
TEST:	C06001	Initial total density:	83.2 pcf	Final total density:	90.0 pcf
DEPTH, feet:	6.05	Initial saturation:	99 %	Final saturation:	100 %
BY:	RV	Initial void ratio:	3.802	Final void ratio:	2.709
TEST DATE:	1/4/2006			Final strain:	23.0 %

EQUIPMENT:
Load Frame No.: 7
Ring Diameter: 2.5 inch

SPECIMEN DESCRIPTION: CH-OH, gray CLAY, trace f. sand.

G	LL	PL	PI
2.64	122	42	80

Load No.	Load (tsf)	d_{100} (inch)	t_{100} Strain (%)	t_{100} Void Ratio (-)	Final Strain (%)	Final Void Ratio (-)	c_v (ft^2/year)	C_α (strain/logt)	Constrained Modulus (tsf)	Permeability (cm/sec)
1	0.063	0.0083	1.370	3.736	2.167	3.698	46.57	0.0041	4.56	3.08E-07
2	0.125	0.0287	4.708	3.576	6.081	3.510	18.69	0.0099	1.87	3.01E-07
3	0.250	0.0640	10.506	3.297	13.630	3.147	13.44	0.0174	2.16	1.88E-07
4	0.500	0.1259	20.667	2.810	23.228	2.687	9.62	0.0178	2.46	1.18E-07
5	0.250	0.1393	22.852	2.705	22.680	2.713	88.65	-0.0007	11.44	2.34E-07
6	0.063	0.1305	21.418	2.773	20.659	2.810	32.34	-0.0060	13.08	7.46E-08
7	0.125	0.1284	21.065	2.790	21.110	2.788	45.25	0.0004	17.69	7.72E-08
8	0.250	0.1336	21.915	2.750	22.124	2.740	53.85	0.0019	14.71	1.10E-07
9	0.500	0.1440	23.627	2.667	24.098	2.645	50.68	0.0045	14.61	1.05E-07
10	1.00	0.1782	29.239	2.398	31.703	2.280	12.86	0.0150	8.91	4.35E-08
11	0.500	0.1903	31.233	2.302	31.103	2.308	100.45	-0.0010	25.07	1.21E-07
12	0.125	0.1760	28.881	2.415	28.243	2.446	14.93	-0.0058	15.94	2.83E-08



SAMPLE INFORMATION

Boring:	CR-41
Sample:	C
Depth:	8.60 feet
Elevation:	
Type:	3-inch thin wall tube
Description:	MH, gray clayey SILT, trace f. sand.

LL = 59, PL = 41, PI = 18

SPECIMEN INFORMATION

(NOTE: Initial and final states refer to beginning and end of test)

Initial height:	0.61	inch
Diameter:	2.50	inch

Initial water content:	91.6	%
Initial total unit weight:	91.4	pcf
Initial dry unit weight:	47.7	pcf
Initial void ratio:	2.405	
Initial degree of saturation:	99	%

Final water content:	68.4	%
Final total unit weight:	98.5	pcf
Final dry unit weight:	58.5	pcf
Final void ratio:	1.774	
Final degree of saturation:	100	%

(assumed specific gravity = 2.60)

TEST SUMMARY

Construction Method:	Casagrande (Log)
Estimated preconsolidation stress (tsf):	1.2 (Range: 1.1 to 1.4)
Estimated in situ effective overburden stress (tsf):	
Compression Ratio (strain per log cycle stress):	0.199
Compression Index (void ratio per log cycle stress):	0.678
Swell Ratio (strain per log cycle stress):	0.009
Swell Index (void ratio per log cycle stress):	0.031
Recompression Ratio (strain per log cycle stress):	0.008
Recompression Index (void ratio per log cycle stress):	0.027
Remarks:	

LEGEND: ☐ End of primary ○ End of Stage ——— Loading - - - - - Unloading

Test Date: 1/30/06 Tested By: RV Checked By: CMJ

Edwards and Kelcey	Tremley Point Connector Road	ONE DIMENSIONAL CONSOLIDATION TEST Boring: CR-41 Depth: 8.60 feet
Geotesting Services, Inc.	Project No. 31737848	March 2006

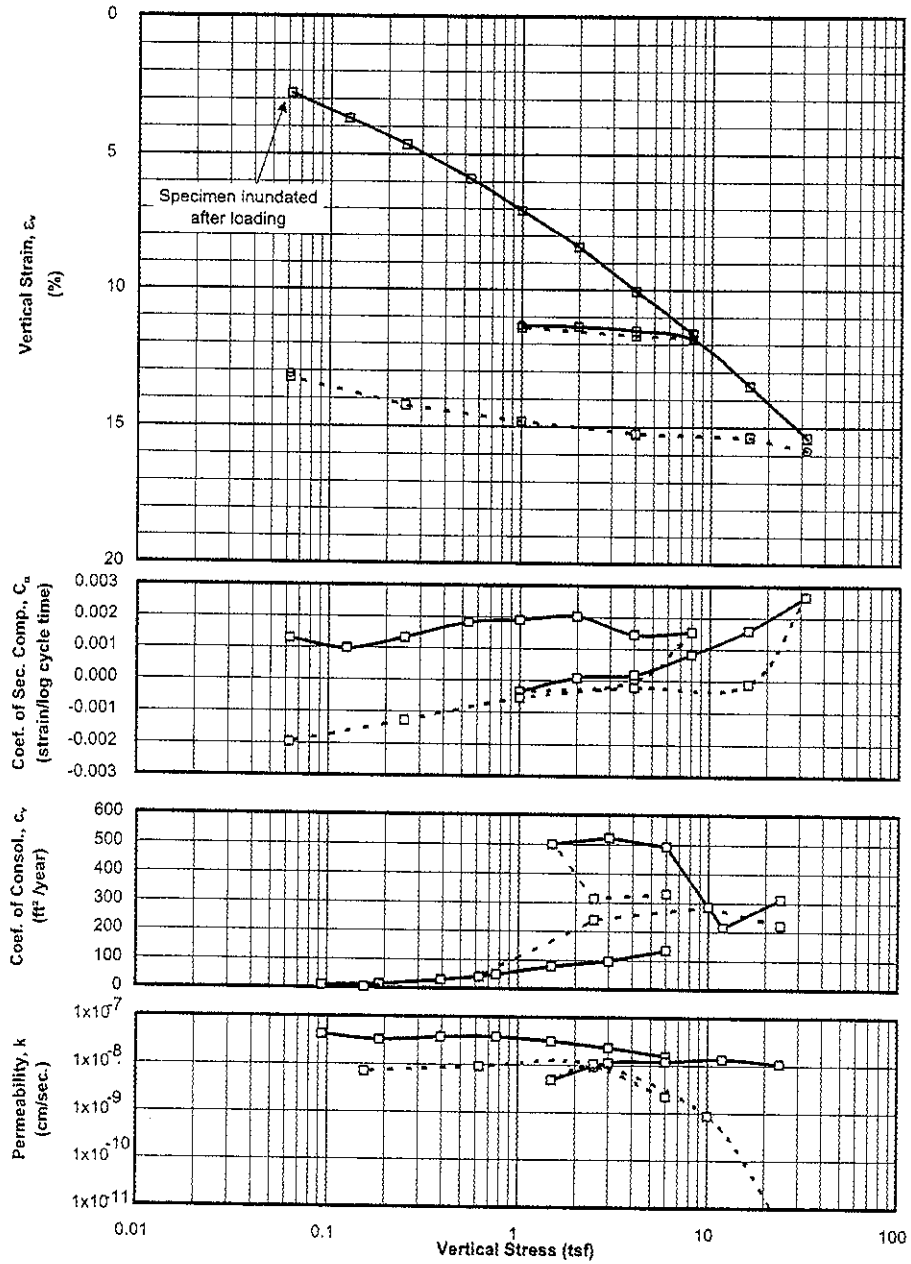
PROJECT:	Tremley Point Connector Road				
PROJECT NO.:	31737848	Initial height:	0.607 inch	Final height:	0.495 inch
BORING:	CR-41	Initial water content:	91.6 %	Final water content:	68.4 %
SAMPLE:	C	Initial dry density:	47.7 pcf	Final dry density:	58.5 pcf
TEST:	C06018	Initial total density:	91.4 pcf	Final total density:	98.5 pcf
DEPTH, feet:	8.6	Initial saturation:	99 %	Final saturation:	100 %
BY:	RV	Initial void ratio:	2.405	Final void ratio:	1.774
TEST DATE:	1/30/2006			Final strain:	18.5 %

EQUIPMENT:
Load Frame No.: 2
Ring Diameter: 2.5 inch

SPECIMEN DESCRIPTION: MH, gray clayey SILT, trace f. sand.

G	LL	PL	PI
2.6	59	41	18

Load No.	Load (tsf)	d_{100} (inch)	t_{100} Strain (%)	t_{100} Void Ratio (-)	Final Strain (%)	Final Void Ratio (-)	c_v (ft^2/year)	C_α (strain/logt)	Constrained Modulus (tsf)	Permeability (cm/sec)
1	0.063	0.0018	0.296	2.395	0.346	2.393	200.38	0.0002	21.09	2.87E-07
2	0.125	0.0061	1.010	2.371	1.257	2.362	127.98	0.0011	8.76	4.41E-07
3	0.250	0.0121	1.998	2.337	2.376	2.324	710.37	0.0016	12.65	1.69E-06
4	0.500	0.0236	3.883	2.273	4.547	2.250	1223.11	0.0026	13.26	2.78E-06
5	1.00	0.0416	6.841	2.172	7.676	2.144	734.57	0.0035	16.91	1.31E-06
6	2.00	0.0675	11.114	2.027	12.093	1.993	906.12	0.0039	23.40	1.17E-06
7	1.00	0.0737	12.129	1.992	12.119	1.992	2629.26	0.0000	98.47	8.06E-07
8	0.250	0.0705	11.611	2.010	11.568	2.011	230.92	-0.0003	144.72	4.81E-08
9	0.500	0.0705	11.605	2.010	11.622	2.009	35.37	0.0002	3925.28	2.72E-10
10	1.00	0.0721	11.867	2.001	11.911	1.999	59.32	0.0003	190.50	9.39E-09
11	2.00	0.0747	12.304	1.986	12.489	1.980	13.53	0.0013	228.95	1.78E-09
12	4.00	0.1021	16.813	1.833	18.171	1.786	587.01	0.0041	44.36	3.99E-07
13	8.00	0.1402	23.075	1.619	24.322	1.577	421.62	0.0050	63.88	1.99E-07
14	4.00	0.1478	24.325	1.577	24.343	1.576	1714.74	0.0001	319.79	1.62E-07
15	1.00	0.1453	23.929	1.590	23.882	1.592	133.51	-0.0003	756.49	5.32E-09
16	0.250	0.1380	22.727	1.631	22.571	1.636	189.73	-0.0009	62.38	9.18E-08
17	0.063	0.1312	21.598	1.670	21.229	1.682	513.40	-0.0015	16.61	9.33E-07



SAMPLE INFORMATION

Boring:	CR-66
Sample:	TS-2A
Depth:	6.45 feet
Elevation:	
Type:	3-inch thin wall tube
Description:	CL, brown m-f sandy silty CLAY; organic mat'l noted. LL = 24, PL = 16, PI = 8

SPECIMEN INFORMATION

(NOTE: Initial and final states refer to beginning and end of test)

Initial height:	0.61	inch
Diameter:	2.50	inch
Initial water content:	22.0	%
Initial total unit weight:	132.5	pcf
Initial dry unit weight:	108.6	pcf
Initial void ratio:	0.604	
Initial degree of saturation:	102	%
Final water content:	15.3	%
Final total unit weight:	140.8	pcf
Final dry unit weight:	122.1	pcf
Final void ratio:	0.426	
Final degree of saturation:	100	% (assumed specific gravity = 2.79)

TEST SUMMARY

Construction Method:	Casagrande (Log)
Estimated preconsolidation stress (tsf):	3.2 (Range: 1.7 to 4.0)
Estimated in situ effective overburden stress (tsf):	
Compression Ratio (strain per log cycle stress):	0.063
Compression Index (void ratio per log cycle stress):	0.101
Swell Ratio (strain per log cycle stress):	0.005
Swell Index (void ratio per log cycle stress):	0.008
Recompression Ratio (strain per log cycle stress):	0.005
Recompression Index (void ratio per log cycle stress):	0.008
Remarks:	

LEGEND: ☐ End of primary ○ End of Stage ——— Loading - - - - - Unloading

Test Date: 1/6/06 Tested By: RV Checked By: GET

Edwards and Kelcey	Tremley Point Connector Road	ONE DIMENSIONAL CONSOLIDATION TEST Boring: CR-66 Depth: 6.45 feet
Geotesting Services, Inc.	Project No. 31737848-20	March 2006

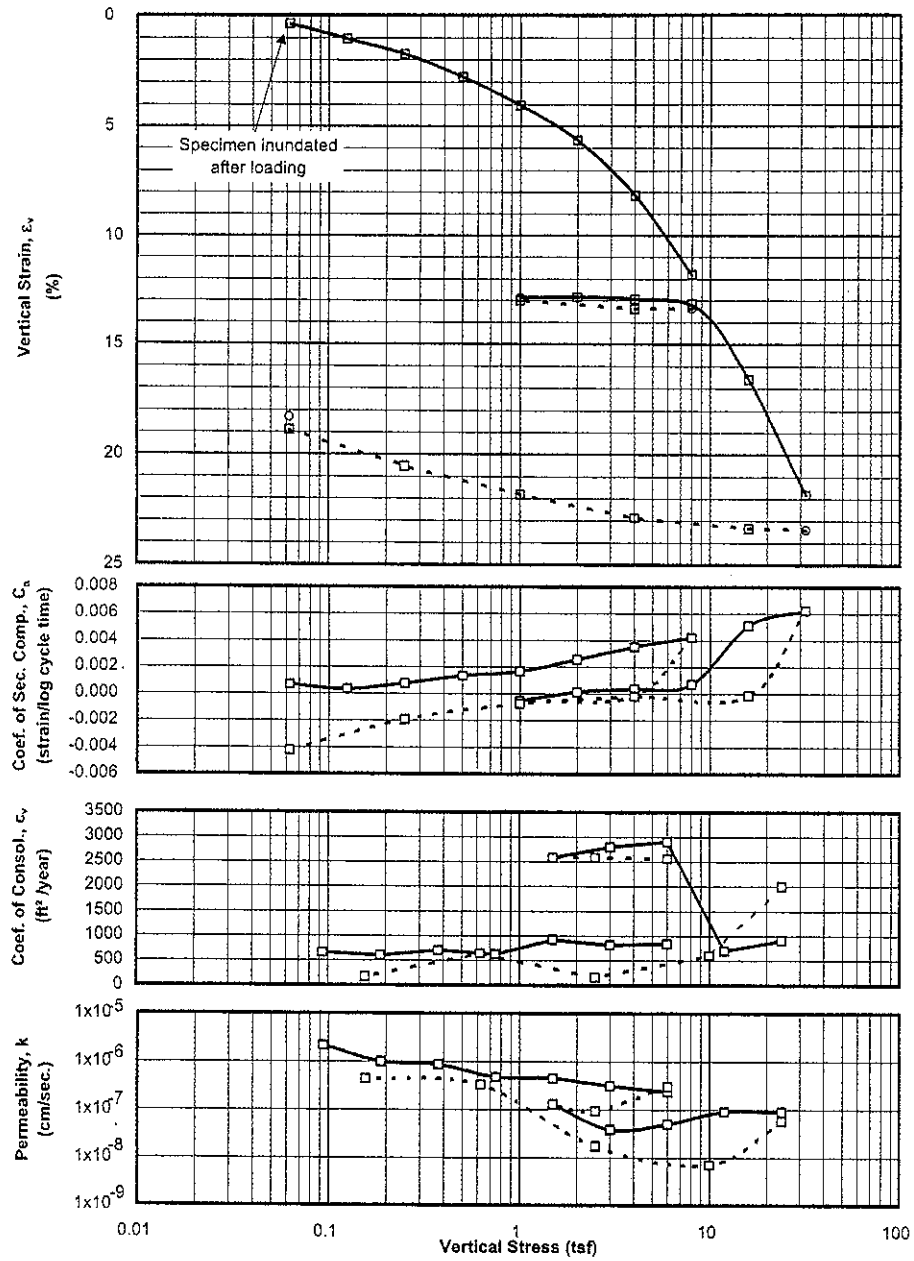
PROJECT:	Tremley Point Connector Road				
PROJECT NO.:	31737848-20	Initial height:	0.607 inch	Final height:	0.538 inch
BORING:	CR-66	Initial water content:	22.0 %	Final water content:	15.3 %
SAMPLE:	TS-2A	Initial dry density:	108.6 pcf	Final dry density:	122.1 pcf
TEST:	C06004	Initial total density:	132.5 pcf	Final total density:	140.8 pcf
DEPTH, feet:	6.45	Initial saturation:	102 %	Final saturation:	100 %
BY:	RV	Initial void ratio:	0.604	Final void ratio:	0.426
TEST DATE:	1/6/2006			Final strain:	11.3 %

EQUIPMENT:
Load Frame No.: 3
Ring Diameter: 2.5 inch

SPECIMEN DESCRIPTION: CL, brown m-f sandy silty CLAY; organic mat'l noted.

G	LL	PL	PI
2.79	24	16	8

Load No.	Load (tsf)	d_{100} (inch)	t_{100} Strain (%)	t_{100} Void Ratio (-)	Final Strain (%)	Final Void Ratio (-)	c_v (ft^2/year)	C_α (strain/logt)	Constrained Modulus (tsf)	Permeability (cm/sec)
1	0.063	0.0170	2.794	0.559	2.969	0.557	8.45	0.0013	2.24	1.14E-07
2	0.125	0.0225	3.708	0.545	3.840	0.543	9.64	0.0010	6.84	4.25E-08
3	0.250	0.0283	4.657	0.529	4.846	0.526	14.13	0.0013	13.16	3.24E-08
4	0.538	0.0357	5.887	0.510	6.078	0.507	29.21	0.0018	23.41	3.76E-08
5	1.00	0.0429	7.080	0.491	7.271	0.488	49.49	0.0019	38.75	3.85E-08
6	2.00	0.0511	8.424	0.469	8.653	0.465	77.60	0.0020	74.40	3.15E-08
7	4.00	0.0610	10.052	0.443	10.369	0.438	95.85	0.0014	122.80	2.35E-08
8	8.00	0.0704	11.602	0.418	11.788	0.415	134.67	0.0015	258.14	1.57E-08
9	4.00	0.0709	11.692	0.417	11.687	0.417	329.05	0.0000	4453.71	2.23E-09
10	1.00	0.0691	11.392	0.421	11.313	0.423	313.32	-0.0004	1001.42	9.44E-09
11	2.00	0.0689	11.360	0.422	11.352	0.422	500.34	0.0001	3112.29	4.85E-09
12	4.00	0.0698	11.504	0.420	11.546	0.419	523.24	0.0002	1392.66	1.13E-08
13	8.00	0.0717	11.826	0.414	11.994	0.412	491.84	0.0008	1241.02	1.20E-08
14	16.0	0.0820	13.514	0.387	13.916	0.381	214.59	0.0016	473.86	1.37E-08
15	32.0	0.0932	15.370	0.358	15.831	0.350	312.63	0.0027	862.27	1.09E-08
16	16.0	0.0932	15.368	0.358	15.347	0.358	222.49	-0.0001	1066154.55	6.30E-12
17	4.00	0.0925	15.246	0.360	15.205	0.360	285.17	-0.0002	9808.27	8.77E-10
18	1.00	0.0898	14.796	0.367	14.713	0.368	239.54	-0.0006	667.56	1.08E-08
19	0.250	0.0863	14.231	0.376	14.080	0.378	40.99	-0.0013	132.59	9.33E-09
20	0.063	0.0804	13.260	0.391	13.122	0.394	4.53	-0.0020	19.32	7.08E-09



SAMPLE INFORMATION

Boring: CR-74
Sample: TS-1C
Depth: 9.20 feet
Elevation:
Type: 3-inch thin wall tube
Description: ML, gray SILT, trace m-f sand; organic mat'l noted.

LL = 44, PL = 39, PI = 5

SPECIMEN INFORMATION

(NOTE: Initial and final states refer to beginning and end of test)

Initial height: 0.61 inch
Diameter: 2.50 inch

Initial water content:	60.8	%
Initial total unit weight:	101.2	pcf
Initial dry unit weight:	63.0	pcf
Initial void ratio:	1.578	
Initial degree of saturation:	100	%
Final water content:	45.3	%
Final total unit weight:	108.2	pcf
Final dry unit weight:	74.5	pcf
Final void ratio:	1.180	
Final degree of saturation:	100	% (assumed specific gravity = 2.60)

TEST SUMMARY

Construction Method:	Casagrande (Log)
Estimated preconsolidation stress (tsf):	4.5 (Range: 4.2 to 5.3)
Estimated in situ effective overburden stress (tsf):	
Compression Ratio (strain per log cycle stress):	0.166
Compression Index (void ratio per log cycle stress):	0.428
Swell Ratio (strain per log cycle stress):	0.006
Swell Index (void ratio per log cycle stress):	0.015
Recompression Ratio (strain per log cycle stress):	0.003
Recompression Index (void ratio per log cycle stress):	0.008
Remarks:	

LEGEND: ☐ End of primary ○ End of Stage ——— Loading - - - - - - Unloading

Test Date: 1/30/06 Tested By: RV Checked By: CMJ

Edwards and Kelcey	Tremley Point Connector Road	ONE DIMENSIONAL CONSOLIDATION TEST Boring: CR-74 Depth: 9.20 feet
Geotesting Services, Inc.	Project No. 31737848-20	March 2006

PROJECT:	Tremley Point Connector Road				
PROJECT NO.:	31737848-20	Initial height:	0.610 inch	Final height:	0.506 inch
BORING:	CR-74	Initial water content:	60.8 %	Final water content:	45.3 %
SAMPLE:	TS-1C	Initial dry density:	63.0 pcf	Final dry density:	74.5 pcf
TEST:	C06017	Initial total density:	101.2 pcf	Final total density:	108.2 pcf
DEPTH, feet:	9.2	Initial saturation:	100 %	Final saturation:	100 %
BY:	RV	Initial void ratio:	1.578	Final void ratio:	1.180
TEST DATE:	1/30/2006			Final strain:	17.0 %

EQUIPMENT:
Load Frame No.: 5
Ring Diameter: 2.5 inch

SPECIMEN DESCRIPTION: ML, gray SILT, trace m-f sand; organic mat'l noted.

G	LL	PL	PI
2.6	44	39	5

Load No.	Load (tsf)	d_{100} (inch)	t_{100} Strain (%)	t_{100} Void Ratio (-)	Final Strain (%)	Final Void Ratio (-)	c_v (ft²/year)	C_α (strain/logt)	Constrained Modulus (tsf)	Permeability (cm/sec)
1	0.063	0.0023	0.380	1.568	0.520	1.565	645.06	0.0006	16.43	1.18E-06
2	0.125	0.0064	1.050	1.551	1.148	1.549	662.20	0.0003	9.33	2.14E-06
3	0.250	0.0106	1.742	1.533	1.902	1.529	597.63	0.0007	18.08	9.97E-07
4	0.500	0.0170	2.785	1.506	3.077	1.499	702.13	0.0013	23.96	8.84E-07
5	1.00	0.0247	4.046	1.474	4.427	1.464	623.55	0.0017	39.65	4.74E-07
6	2.00	0.0345	5.649	1.433	6.284	1.416	924.21	0.0025	62.42	4.47E-07
7	4.00	0.0498	8.155	1.368	9.016	1.346	818.56	0.0035	79.79	3.10E-07
8	8.00	0.0721	11.808	1.274	13.371	1.233	842.96	0.0042	109.51	2.32E-07
9	4.00	0.0816	13.371	1.233	13.306	1.235	2559.80	-0.0002	255.91	3.02E-07
10	1.00	0.0794	13.013	1.243	12.872	1.246	2582.95	-0.0005	838.54	9.29E-08
11	2.00	0.0784	12.850	1.247	12.886	1.246	2585.12	0.0001	613.80	1.27E-07
12	4.00	0.0790	12.941	1.245	13.051	1.242	2793.78	0.0003	2218.20	3.80E-08
13	8.00	0.0804	13.170	1.239	13.419	1.232	2902.88	0.0007	1743.90	5.02E-08
14	16.0	0.1013	16.606	1.150	18.348	1.105	700.67	0.0051	232.80	9.08E-08
15	32.0	0.1331	21.820	1.016	23.418	0.974	912.28	0.0062	306.88	8.97E-08
16	16.0	0.1424	23.344	0.976	23.300	0.977	1999.94	-0.0002	1050.30	5.74E-08
17	4.00	0.1396	22.871	0.989	22.740	0.992	597.25	-0.0002	2539.93	7.09E-09
18	1.00	0.1331	21.815	1.016	21.705	1.019	164.09	-0.0008	284.04	1.74E-08
19	0.250	0.1253	20.537	1.049	19.997	1.063	635.53	-0.0020	58.68	3.27E-07
20	0.063	0.1152	18.886	1.091	18.296	1.107	166.99	-0.0042	11.36	4.43E-07

Project No.: 317378487

Edwards and Kelcey
Tremley Point Connector Road
ROCK LABORATORY TESTING DATA SUMMARY

BORING NO.	SAMPLE NO.	DEPTH (m)	WATER CONTENT (1) (%)	TOTAL UNIT WEIGHT (pcf)	STRENGTH					REMARKS
					TEST TYPE	POINT LOAD (1) STRENGTH INDEX $I_{s(50)}$ (psi)	UNCONFINED COMPRESSIVE STRENGTH(2) (psi)	AXIAL STRAIN @ FAILURE (%)	UNCONFINED COMPRESSIVE STRENGTH(3) (psi)	
A5-1		29-29.5	2.9	159	UC			0.7	4090	
A5-1		34.5-35	3.7	160	UC			0.8	2630	
A5-1		37.5-38	4.6	154	UC			1.3	3590	
A7-3		31.5			PL	280	6474			diametral
A7-3		31.5			PL	810	14415			axial
A7-3		31.5			PL	730	13315			axial
A7-3		31.5	5.5		PL	550	10032			axial
A7-3		47-47.5	5.7	141	UC			0.6	5080	
A7-3		53.5-54	2.0	167	UC			0.7	5910	
A7-4		37.0			PL	20	462			diametral
A7-4		37.0			PL	30	552			axial
A7-4		37.0			PL	150	2692			axial
A7-4		37.0	7.4		PL	130	2352			axial
A7-4		47.0			PL	30	694			diametral
A7-4		47.0			PL	130	2314			axial
A7-4		47.0			PL	320	5647			axial
A7-4		47.0	11.1		PL	340	6101			axial
A7-4		54.0			PL	250	5780			diametral
A7-4		54.0			PL	270	6242			diametral
A7-4		54.0			PL	1790	3284			axial
A7-4		54.0	2.4		PL	1730	31043			axial
A7-5		33-34.5			PL	30	694			diametral
A7-5		33-34.5			PL	270	4724			axial
A7-5		33-34.5			PL	310	5608			axial
A7-5		33-34.5	7.4		PL	410	7418			axial
A7-5		45-45.5	3.3	158	UC			1.3	6360	
A7-5		53.5-54	4.5	161	UC			0.8	3080	
CR-33		48.5-49	1.7	159	UC			0.9	9980	
CR-33		52-52.5	1.9	160	UC			0.9	8570	
CR-33		54.5-55	1.5	162	UC			0.9	10430	
CR-36		45.5-46	2.9	158	UC			1.1	6810	
CR-36		47-47.5	6.2	140	UC			0.7	1460	
CR-36		49.5-50	5.9	139	UC			0.9	1460	

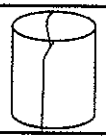
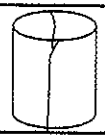
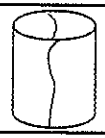
Notes: (1) Water contents on point load samples determined shortly after sample opening.
UC water contents determined after trimming and shearing. Noticeable water was lost during these phases.
(2) Point Load Compressive Strength based on Extrapolated "C" from ASTM Method D5731.
(3) Strength from unconfined compression test.

Prepared by: RV Reviewed by: GET Date: 3/30/2006

POINT LOAD STRENGTH INDEX OF ROCK
ASTM D 5731

Project Number: 31737848
Project Name: Tremley Point Connector Road

Test by: RB
Test Date: 1/31/2006
Reviewed by: GET

	Diametral	Axial	Axial	Axial		
Boring:	A7-3	A7-3	A7-3	A7-3		
Sample:						
Depth Range:	31.5	31.5	31.5	31.5		
Length to nearest free end, L (mm)	50.8					
D (mm)	50.0	22.0	25.0	25.0		
D' (mm)	46.0	19.0	22.0	24		
Failure Load, P (lb)	999	784	878	706		
Point Load (N)	**4444**	**3487**	**3906**	**3140**		
Point Load (Mpa)	**1.90**	**5.58**	**5.05**	**3.80**		
Index, Is50 (psi)	**280**	**810**	**730**	**550**		
Unconfined Compressive Strength (psi)	**6474**	**14415**	**13315**	**10032**		
Specimen /Failure Sketch						
Tare No.				115		
Wet + Tare (gm)				579.65		
Dry + Tare (gm)				560.46		
Tare (gm)				213.8		
Water Content%				**5.54**		
Comments						

Project No. 31737848	Tremley Point Connector Road	DATA SHEET POINT LOAD STRENGTH INDEX TESTS	Data Sheet
Geotesting Services, Inc.			

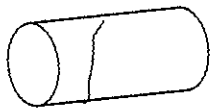
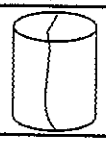
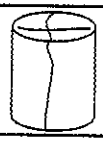
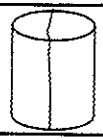
GSI Analysis File: PLrockV2.xls

3/30/2006 File: pIA7-3@31.5.xls

POINT LOAD STRENGTH INDEX OF ROCK
ASTM D 5731

Project Number: 31737848
Project Name: Tremley Point Connector Road

Test by: RB
Test Date: 1/31/2006
Reviewed by: GET

	Diametral	Axial	Axial	Axial		
Boring:	A7-4	A7-4	A7-4	A7-4		
Sample:						
Depth Range:	37	37	37	37		
Length to nearest free end, L (mm)	50.8					
D (mm)	50.0	26.0	23.0	24.0		
D' (mm)	48.0	24.0	11.0	13		
Failure Load, P (lb)	70	45	96	102		
Point Load (N)	**311**	**200**	**427**	**454**		
Point Load (Mpa)	**0.13**	**0.23**	**1.01**	**0.91**		
Index, Is50 (psi)	**20**	**30**	**150**	**130**		
Unconfined Compressive Strength (psi)	**462**	**552**	**2692**	**2352**		
Specimen /Failure Sketch						
Tare No.						
Wet + Tare (gm)				163		
Dry + Tare (gm)				570.62		
Tare (gm)				546.21		
Water Content%				214.26		
Comments				**7.35**		

Project No. 31737848	Tremley Point Connector Road	DATA SHEET POINT LOAD STRENGTH INDEX TESTS	Data Sheet
Geotesting Services, Inc.			

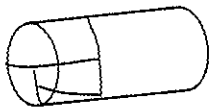
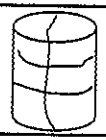
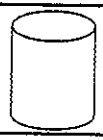
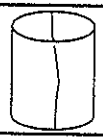
GSI Analysis File: PLrockV2.xls

3/30/2006 File: pIA7-4@37.xls

POINT LOAD STRENGTH INDEX OF ROCK
ASTM D 5731

Project Number: 31737848
Project Name: Tremley Point Connector Road

Test by: RB
Test Date: 1/31/2006
Reviewed by: GET

	Diametral	Axial	Axial	Axial		
Boring:	A7-4	A7-4	A7-4	A7-4		
Sample:						
Depth Range:	47	47	47	47		
Length to nearest free end, L (mm)	25.4					
D (mm)	50.0	22.0	21.0	23.0		
D' (mm)	48.0	16.0	10.0	9		
Failure Load, P (lb)	94	112	181	189		
Point Load (N)	**418**	**498**	**805**	**841**		
Point Load (Mpa)	**0.17**	**0.91**	**2.20**	**2.32**		
Index, Is50 (psi)	**30**	**130**	**320**	**340**		
Unconfined Compressive Strength (psi)	**694**	**2314**	**5647**	**6101**		
Specimen /Failure Sketch						
Tare No.						
Wet + Tare (gm)				159		
Dry + Tare (gm)				491.61		
Tare (gm)				463.89		
Water Content%				213.36		
Comments				**11.06**		

Project No. 31737848	Tremley Point Connector Road	DATA SHEET POINT LOAD STRENGTH INDEX TESTS	Data Sheet
Geotesting Services, Inc.			

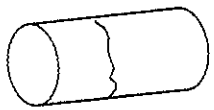
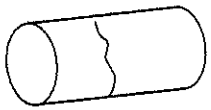
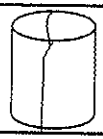
GSI Analysis File: PLrockV2.xls

3/30/2006 File: plA7-4@47.xls

POINT LOAD STRENGTH INDEX OF ROCK
ASTM D 5731

Project Number: 31737848
Project Name: Tremley Point Connector Road

Test by: RB
Test Date: 1/31/2006
Reviewed by: GET

	Diametral	Diametral	Axial	Axial		
Boring:	A7-4	A7-4	A7-4	A7-4		
Sample:						
Depth Range:	54	54	54	54		
Length to nearest free end, L (mm)	50.8	25.4				
D (mm)	50.0	50.0	24.0	23.0		
D' (mm)	48.0	48.0	21.0	18		
Failure Load, P (lb)	932	1028	2005	1663		
Point Load (N)	**4146**	**4573**	**8919**	**7397**		
Point Load (Mpa)	**1.71**	**1.89**	**12.34**	**11.92**		
Index, Is50 (psi)	**250**	**270**	**1790**	**1730**		
Unconfined Compressive Strength (psi)	**5780**	**6242**	**32384**	**31043**		
Specimen /Failure Sketch						
Tare No.						
Wet + Tare (gm)				113		
Dry + Tare (gm)				464.63		
Tare (gm)				458.84		
Water Content%				214.15		
Comments				**2.37**		

Project No. 31737848	Tremley Point Connector Road	DATA SHEET POINT LOAD STRENGTH INDEX TESTS	Data Sheet
Geotesting Services, Inc.			

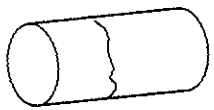
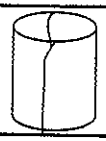
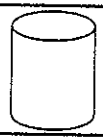
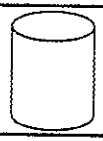
GSI Analysis File: PLrockV2.xls

3/30/2006 File: plA7-4@54.xls

POINT LOAD STRENGTH INDEX OF ROCK
ASTM D 5731

Project Number: 31737848
Project Name: Tremley Point Connector Road

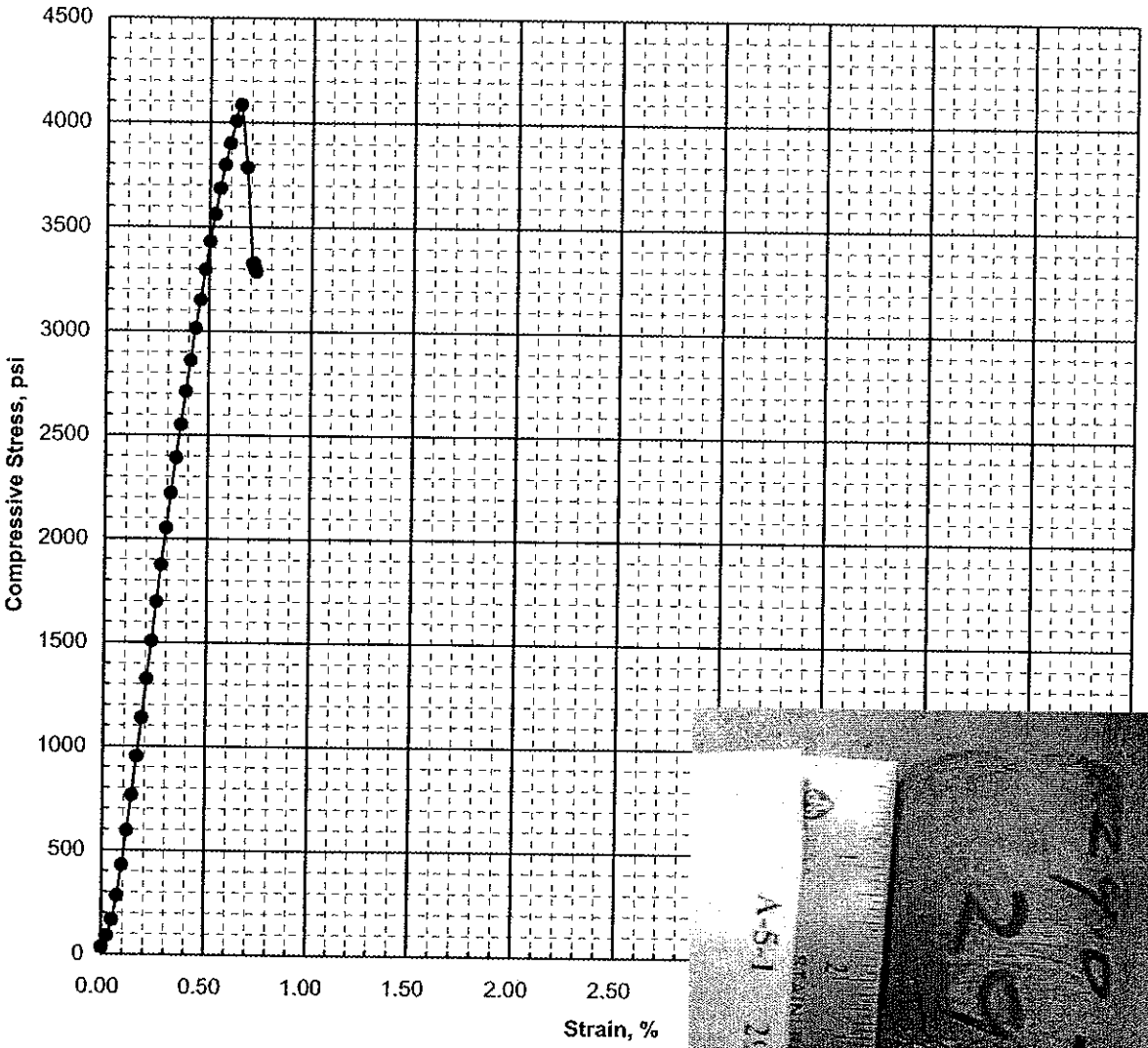
Test by: RB
Test Date: 1/31/2006
Reviewed by: GET

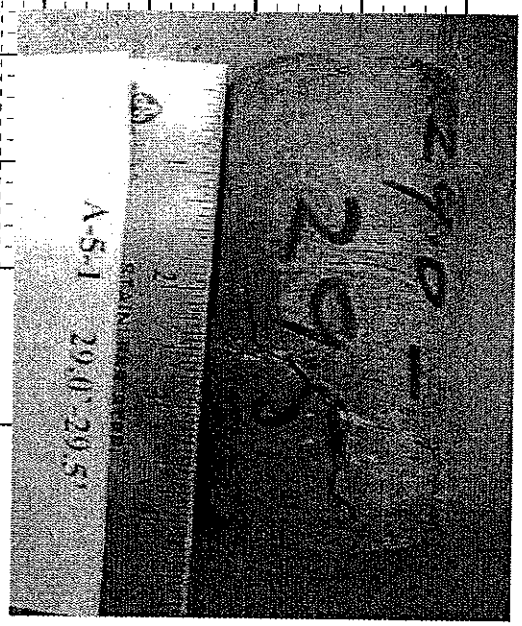
	Diametral	Axial	Axial	Axial		
Boring:	A7-5	A7-5	A7-5	A7-5		
Sample:						
Depth Range:	33-34.5	33-34.5	33-34.5	33-34.5		
Length to nearest free end, L (mm)	50.8					
D (mm)	50.0	20.0	24.0	24.0		
D' (mm)	49.0	18.0	23.0	20		
Failure Load, P (lb)	108	233	375	443		
Point Load (N)	**480**	**1036**	**1668**	**1971**		
Point Load (Mpa)	**0.20**	**1.86**	**2.15**	**2.83**		
Index, Is50 (psi)	**30**	**270**	**310**	**410**		
Unconfined Compressive Strength (psi)	**694**	**4724**	**5608**	**7418**		
Specimen /Failure Sketch						
Tare No.						
Wet + Tare (gm)				110		
Dry + Tare (gm)				530.5		
Tare (gm)				508.68		
Water Content%				213.7		
Comments				**7.40**		

Project No. 31737848	Tremley Point Connector Road	DATA SHEET POINT LOAD STRENGTH INDEX TESTS	Data Sheet
Geotesting Services, Inc.			

GSI Analysis File: PLrockV2.xls

3/30/2006 File: piA7-5@33.xls





Specimen Information

Water Content (%)	Wet Unit Weight (pcf)	Dry Unit Weight (pcf)	Length (inch)	Diameter (inch)
2.92	159	154	4.035	1.976

Specimen meets ASTM D4543 shape tolerances

Test Summary

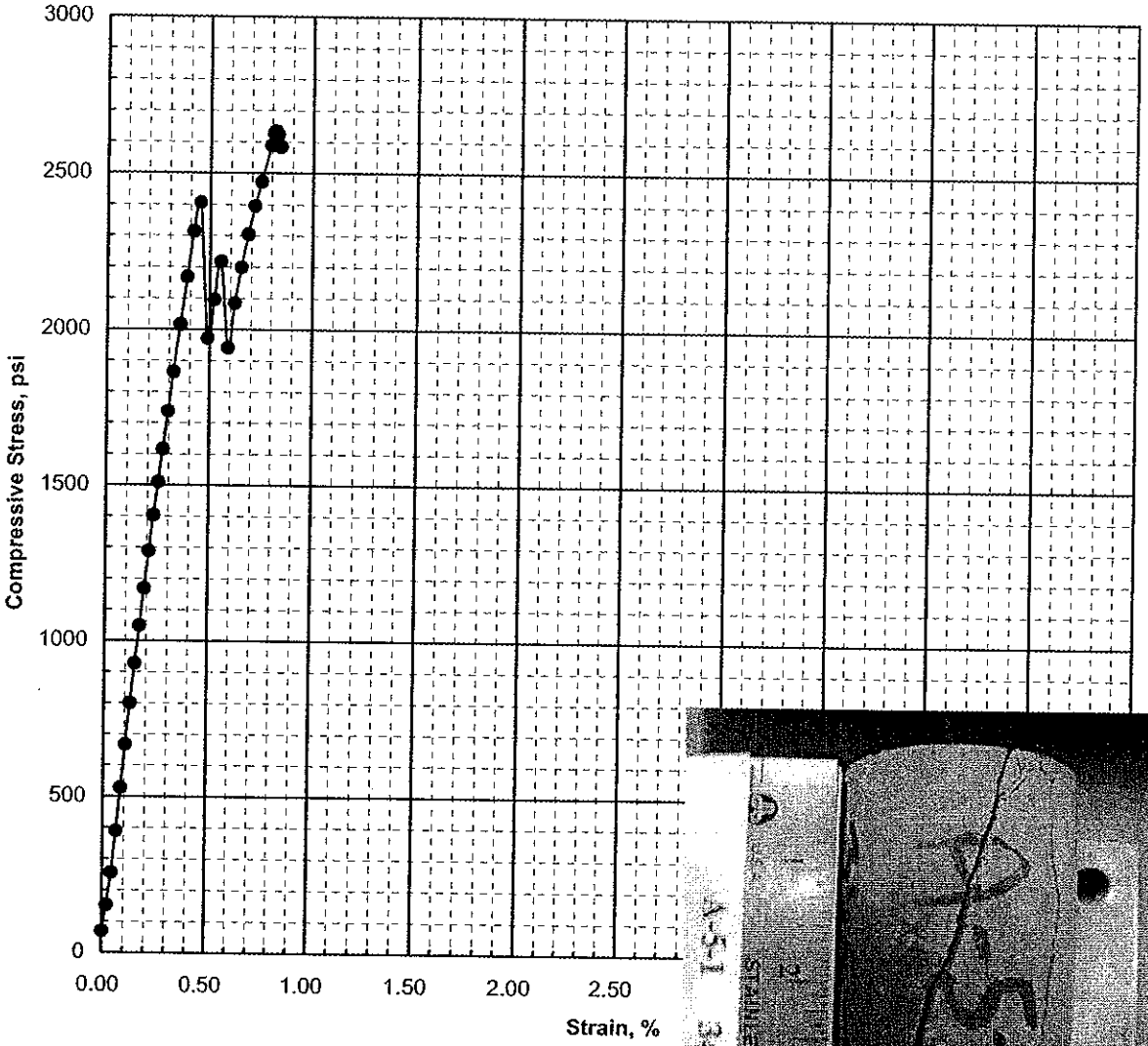
Strain Rate (%/min)	Strain to Peak (%)	q_u (psi)
0.23	0.65	4090

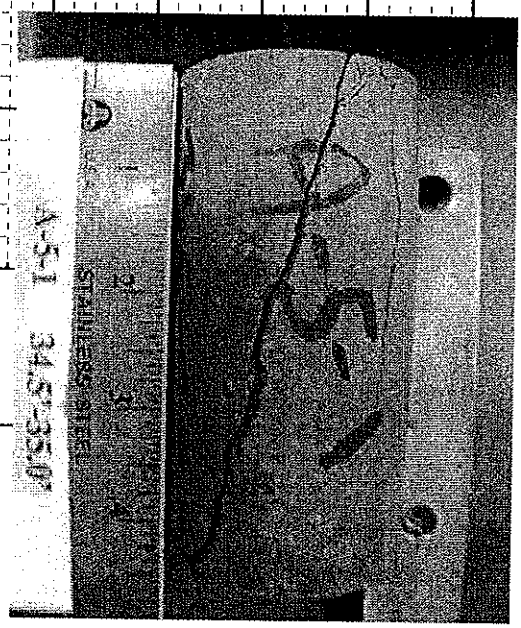
Tested by: DT

Test Date: Jan-30-06

FAILURE PHOTO

Project No. 31737848	Tremley Point Connector Road	**COMPRESSIVE STRESS VS STRAIN UNCONFINED COMPRESSIVE STRENGTH TEST**
Geotesting Services, Inc.		**Boring: A-5-1 Sample: Depth 29.0-29.5 ft.**





Specimen Information

Water Content (%)	Wet Unit Weight (pcf)	Dry Unit Weight (pcf)	Length (inch)	Diameter (inch)
3.73	160	154	4.476	1.973

Specimen meets ASTM D4543 shape tolerances

Test Summary

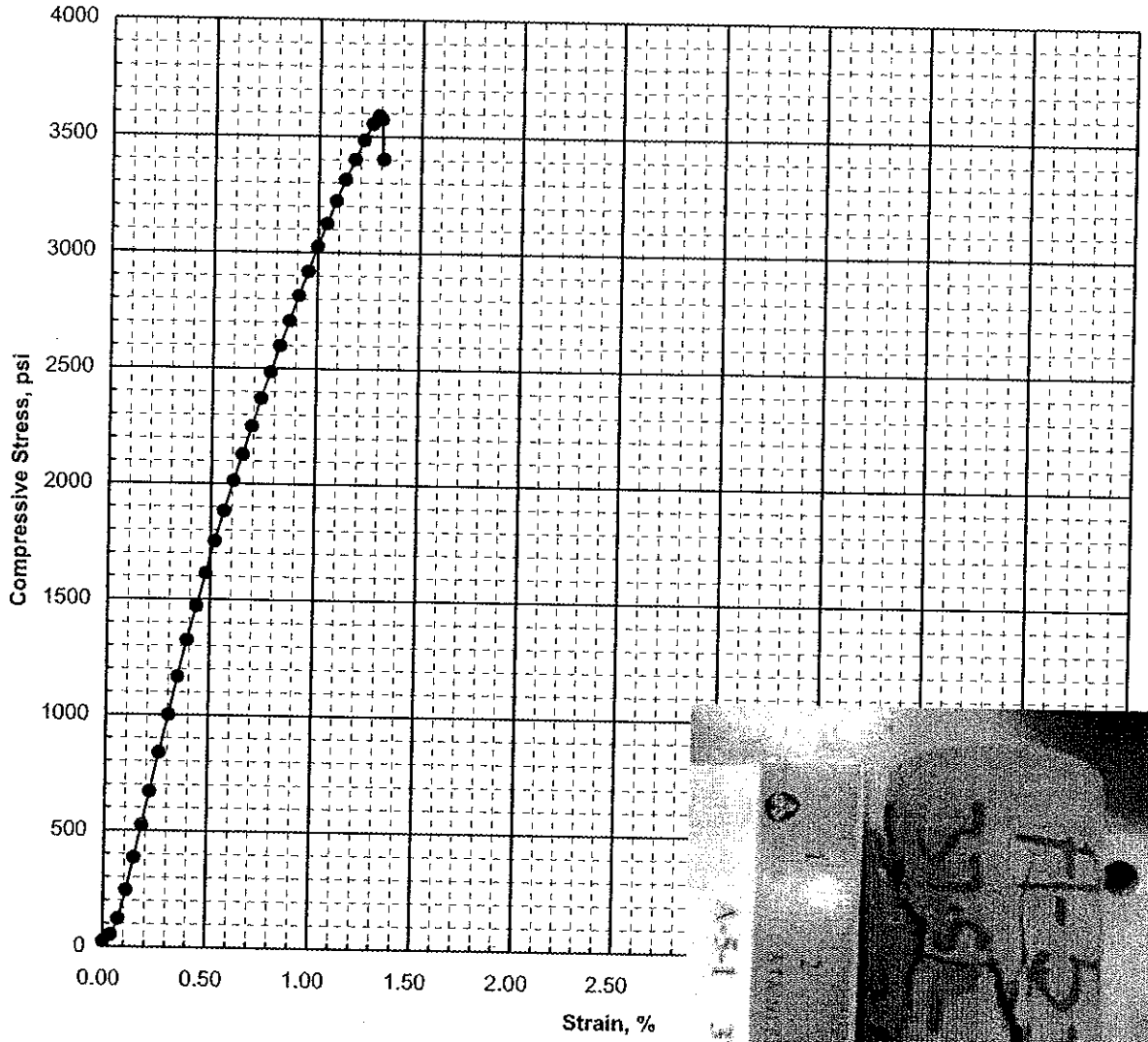
Strain Rate (%/min)	Strain to Peak (%)	q_u (psi)
0.22	0.82	2630

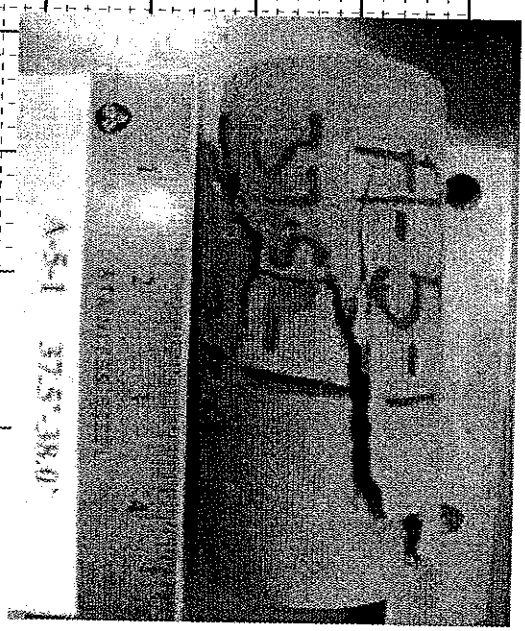
Tested by: DT

Test Date: Jan-30-06

FAILURE PHOTO

Project No. 31737848	Tremley Point Connector Road	COMPRESSIVE STRESS VS STRAIN UNCONFINED COMPRESSIVE STRENGTH TEST Boring: A-5-1 Sample: Depth 34.5-35 ft.
Geotesting Services, Inc.		





Specimen Information

Water Content (%)	Wet Unit Weight (pcf)	Dry Unit Weight (pcf)	Length (inch)	Diameter (inch)
4.55	154	148	4.457	1.967

Specimen meets ASTM D4543 shape tolerances

Test Summary

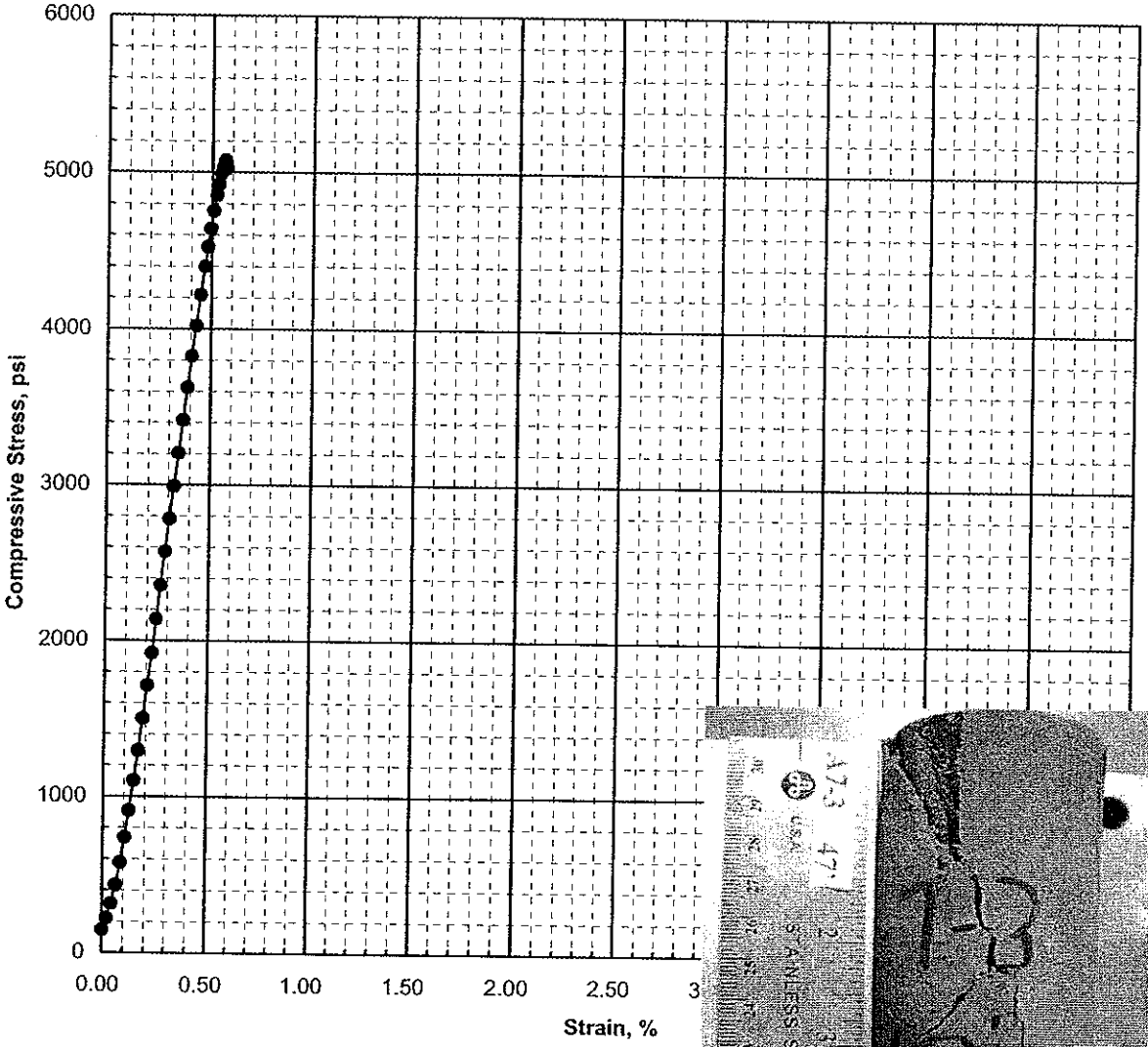
Strain Rate (%/min)	Strain to Peak (%)	q_u (psi)
0.22	1.29	3590

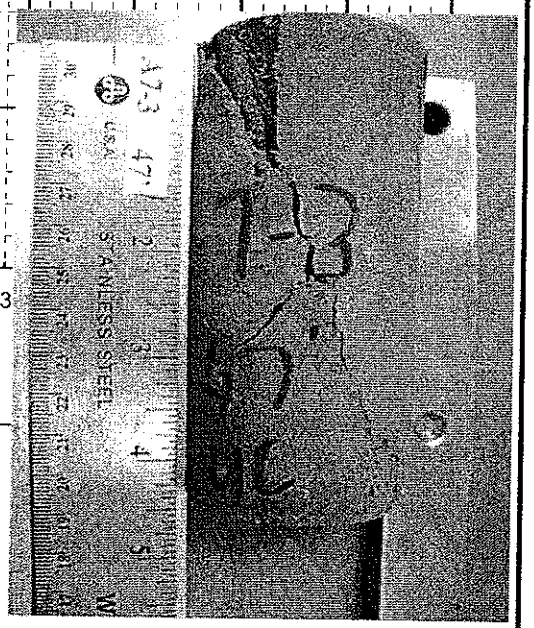
Tested by: DT

Test Date: Jan-30-06

FAILURE PHOTO

Project No. 31737848	Tremley Point Connector Road	COMPRESSIVE STRESS VS STRAIN UNCONFINED COMPRESSIVE STRENGTH TEST
Geotesting Services, Inc.		Boring: A-5-1 Sample: Depth 37.5-38 ft.





Specimen Information

Water Content (%)	Wet Unit Weight (pcf)	Dry Unit Weight (pcf)	Length (inch)	Diameter (inch)
5.66	141	133	4.457	1.974

Specimen does not meet ASTM D4543 shape tolerances

Test Summary

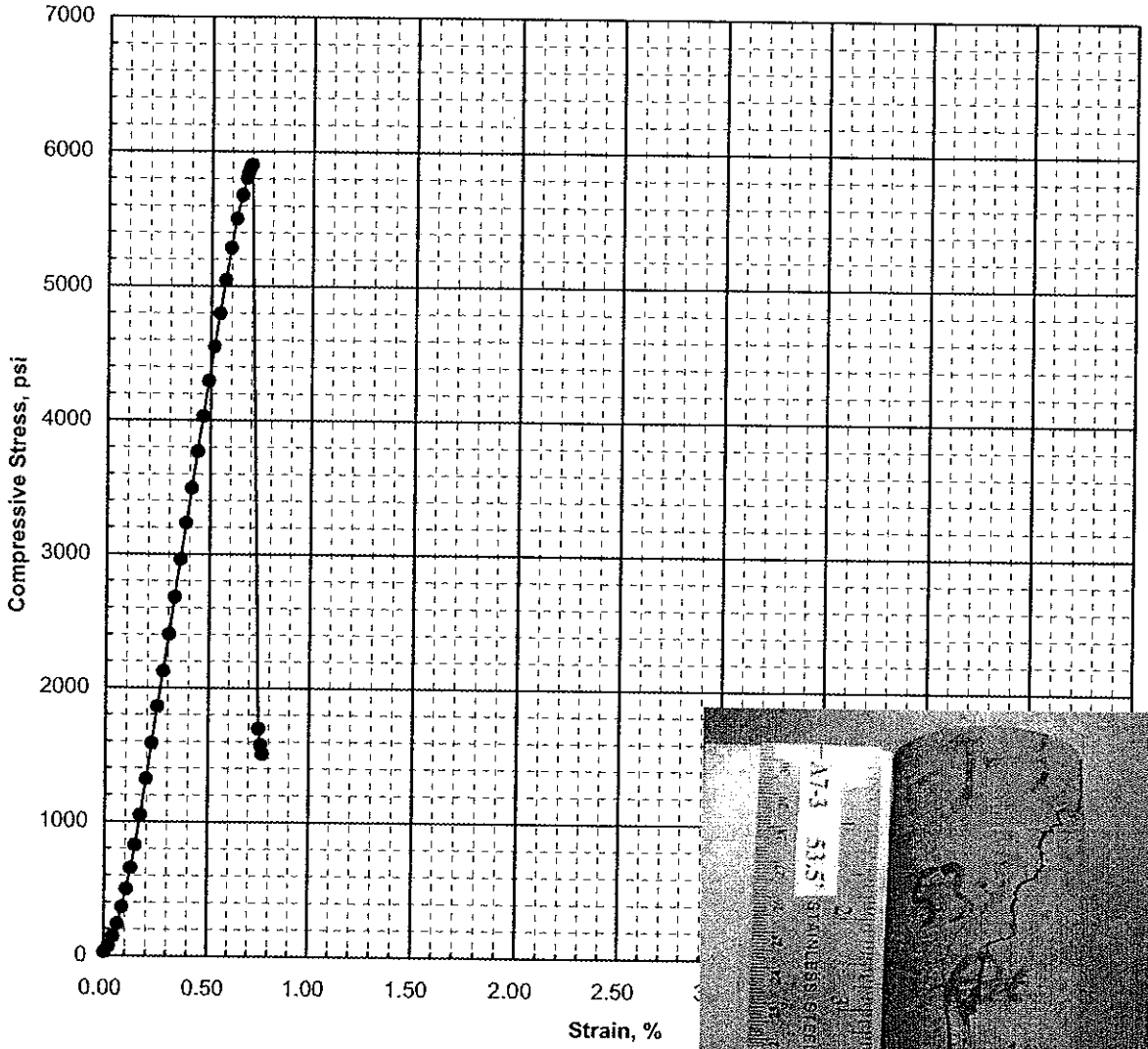
Strain Rate (%/min)	Strain to Peak (%)	q_u (psi)
0.20	0.56	5080

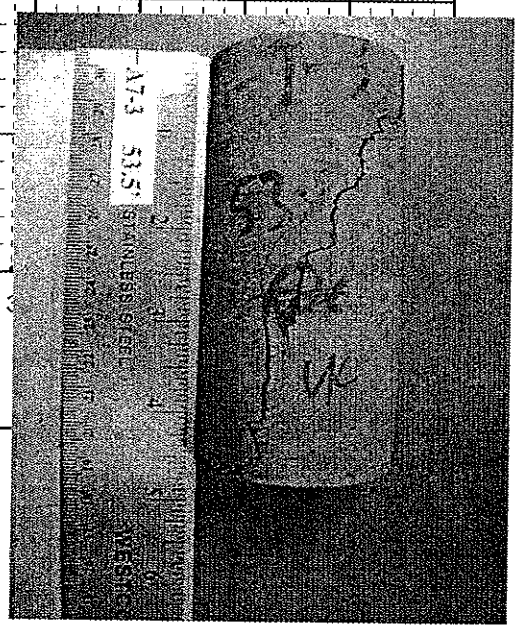
Tested by: BB

Test Date: Feb-03-06

FAILURE PHOTO

Project No. 31737848	Tremley Point Connector Road	COMPRESSIVE STRESS VS STRAIN UNCONFINED COMPRESSIVE STRENGTH TEST Boring: A7-3 Sample: Depth 47-47.5 ft.
Geotesting Services, Inc.		





Specimen Information

Water Content (%)	Wet Unit Weight (pcf)	Dry Unit Weight (pcf)	Length (inch)	Diameter (inch)
1.99	167	164	4.495	1.976

Specimen meets ASTM D4543 shape tolerances

Test Summary

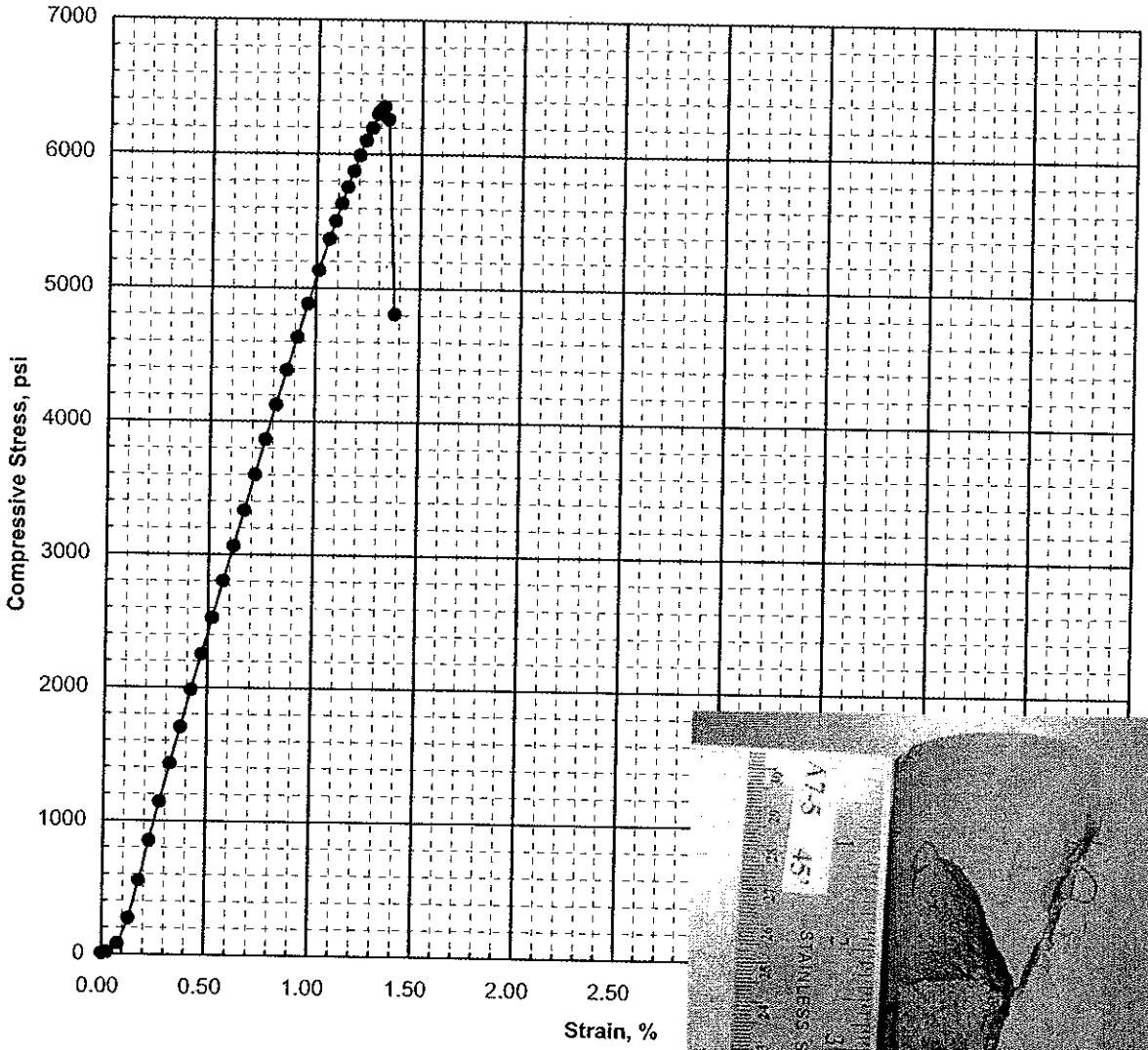
Strain Rate (%/min)	Strain to Peak (%)	q_u (psi)
0.22	0.70	5910

Tested by: BB

Test Date: Feb-03-06

FAILURE PHOTO

Project No. 31737848	Tremley Point Connector Road	COMPRESSIVE STRESS VS STRAIN UNCONFINED COMPRESSIVE STRENGTH TEST Boring: A7-3 Sample: Depth 53.5-54 ft.
Geotesting Services, Inc.		



Specimen Information

Water Content (%)	Wet Unit Weight (pcf)	Dry Unit Weight (pcf)	Length (inch)	Diameter (inch)
3.34	158	153	4.472	1.975

Specimen meets ASTM D4543 shape tolerances

Test Summary

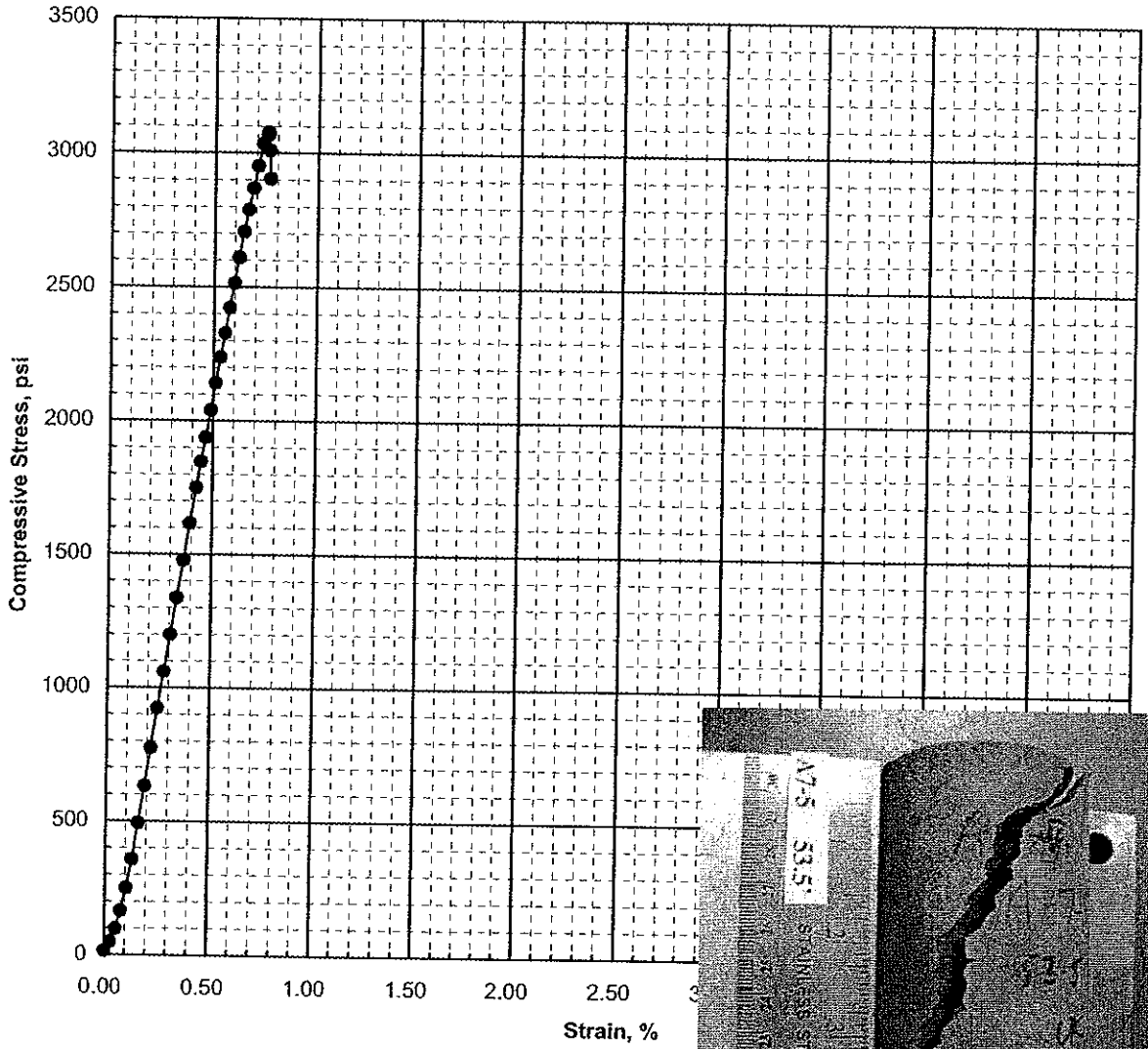
Strain Rate (%/min)	Strain to Peak (%)	q_u (psi)
0.22	1.32	6360

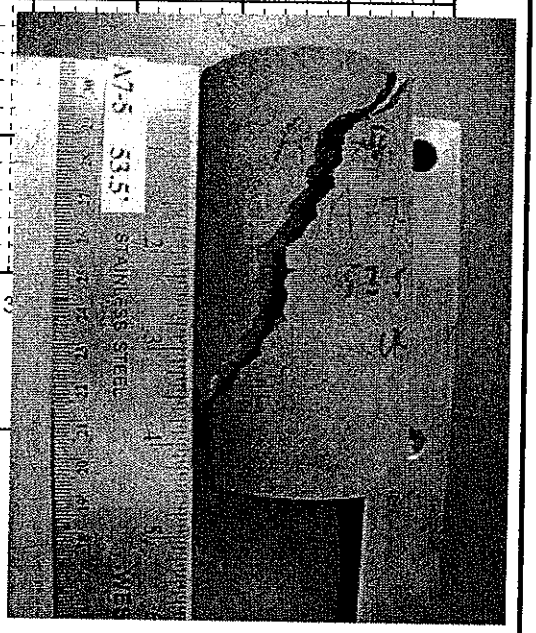
Tested by: BB

Test Date: Feb-03-06

FAILURE PHOTO

Project No. 31737848	Tremley Point Connector Road	**COMPRESSIVE STRESS VS STRAIN UNCONFINED COMPRESSIVE STRENGTH TEST** Boring: A7-5 Sample: Depth 45-45.5 ft.
Geotesting Services, Inc.		





Specimen Information

Water Content (%)	Wet Unit Weight (pcf)	Dry Unit Weight (pcf)	Length (inch)	Diameter (inch)
4.48	161	154	4.334	1.974

Specimen meets ASTM D4543 shape tolerances

Test Summary

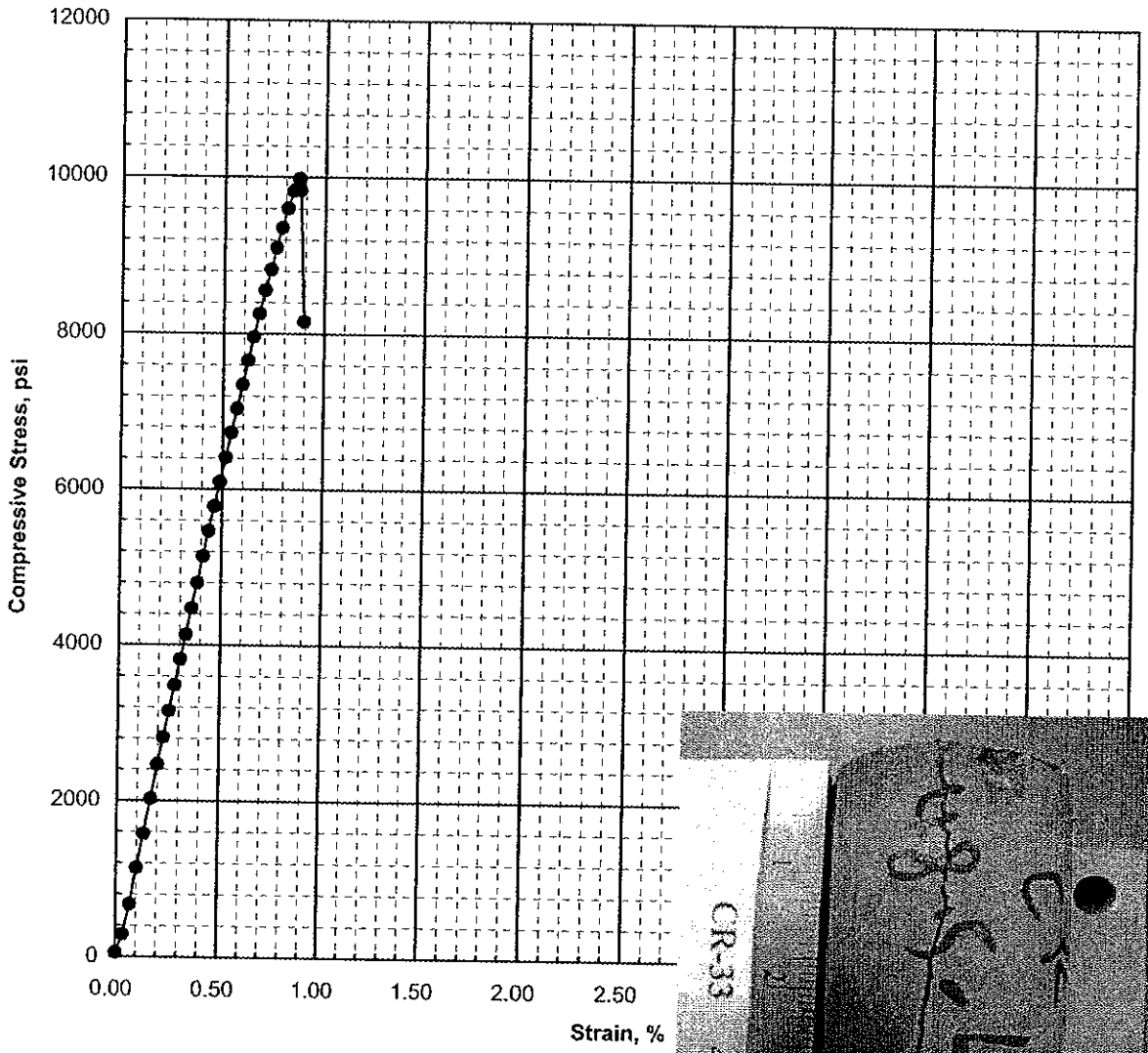
Strain Rate (%/min)	Strain to Peak (%)	q_u (psi)
0.22	0.75	3080

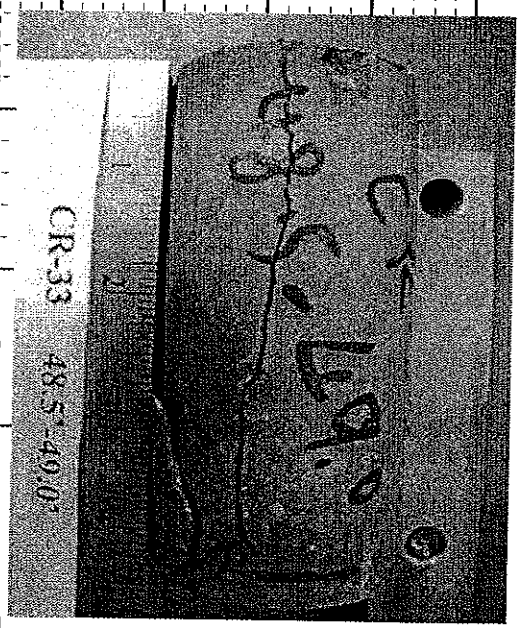
Tested by: BB

Test Date: Feb-03-06

FAILURE PHOTO

Project No. 31737848	Tremley Point Connector Road	**COMPRESSIVE STRESS VS STRAIN UNCONFINED COMPRESSIVE STRENGTH TEST**
Geotesting Services, Inc.		**Boring: A7-5 Sample: Depth 53.5-54 ft.**





Specimen Information

Water Content (%)	Wet Unit Weight (pcf)	Dry Unit Weight (pcf)	Length (inch)	Diameter (inch)
1.73	159	157	4.416	1.975

Specimen meets ASTM D4543 shape tolerances

Test Summary

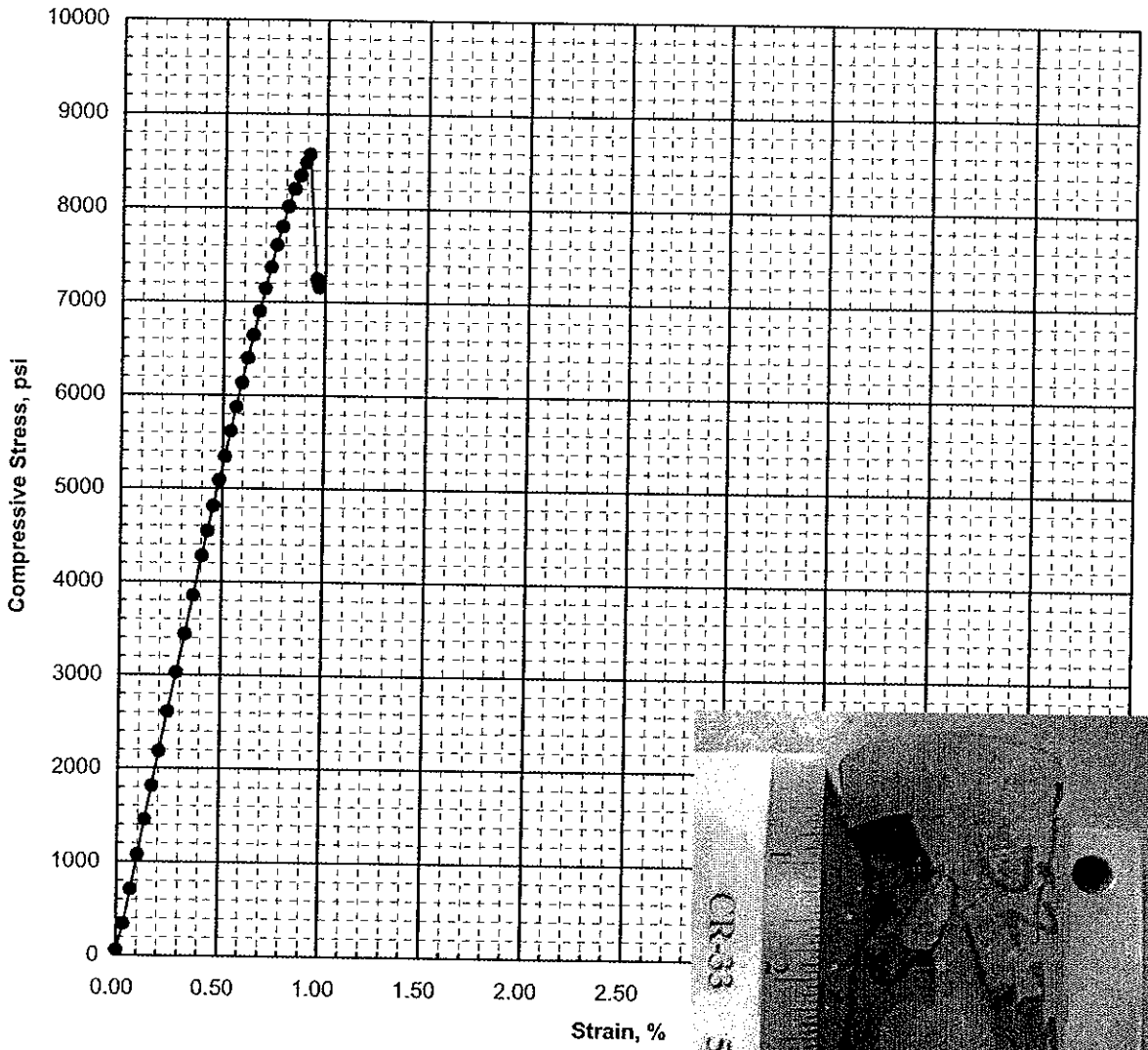
Strain Rate (%/min)	Strain to Peak (%)	q_u (psi)
0.21	0.87	9980

Tested by: DT

Test Date: Jan-30-06

FAILURE PHOTO

Project No. 31737848	Tremley Point Connector Road	**COMPRESSIVE STRESS VS STRAIN UNCONFINED COMPRESSIVE STRENGTH TEST** Boring: CR-33 Sample: Depth 48.5-49 ft.
Geotesting Services, Inc.		



Specimen Information

Water Content (%)	Wet Unit Weight (pcf)	Dry Unit Weight (pcf)	Length (inch)	Diameter (inch)
1.94	160	157	4.424	1.975

Specimen meets ASTM D4543 shape tolerances

Test Summary

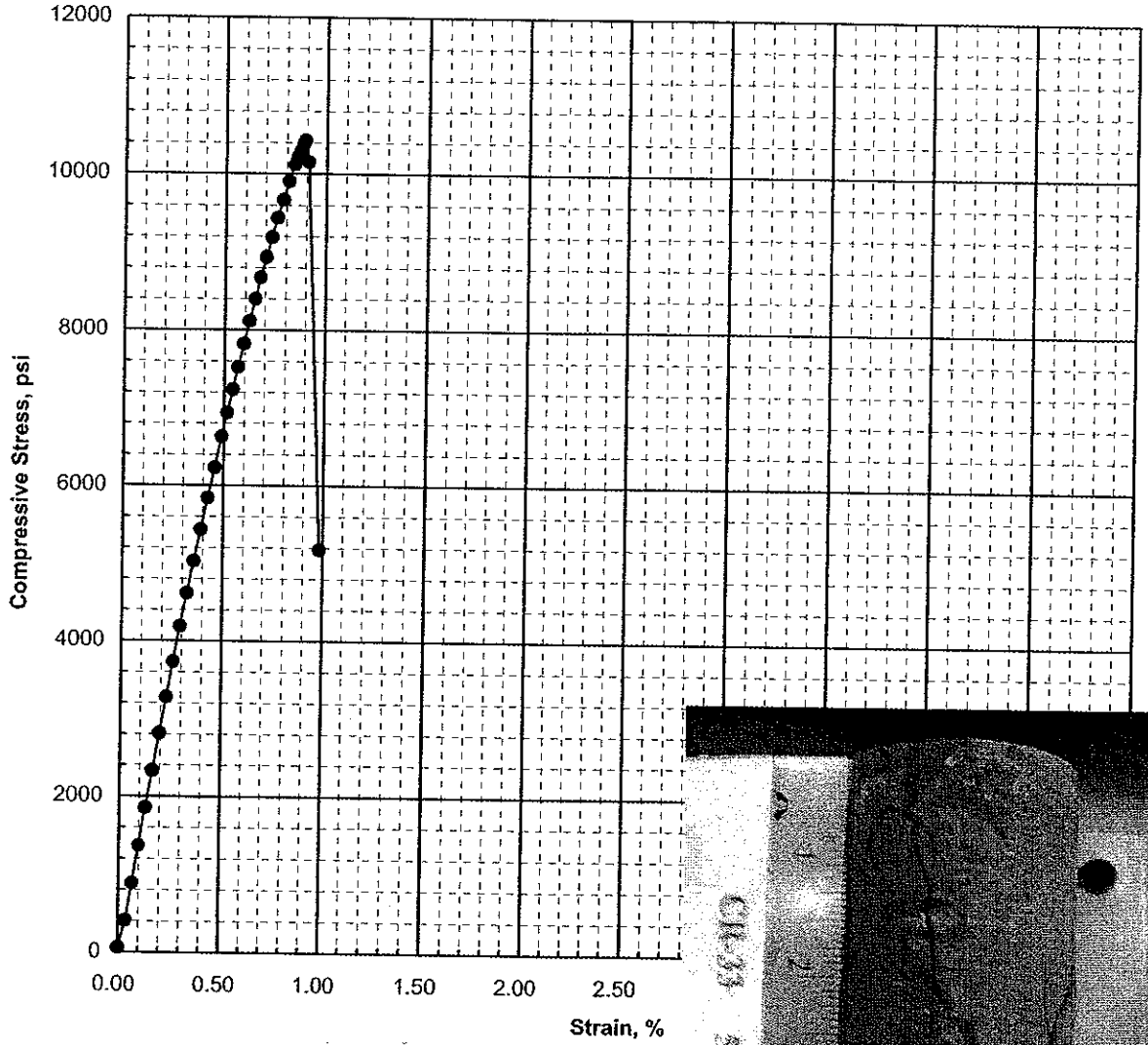
Strain Rate (%/min)	Strain to Peak (%)	q_u (psi)
0.21	0.92	8570

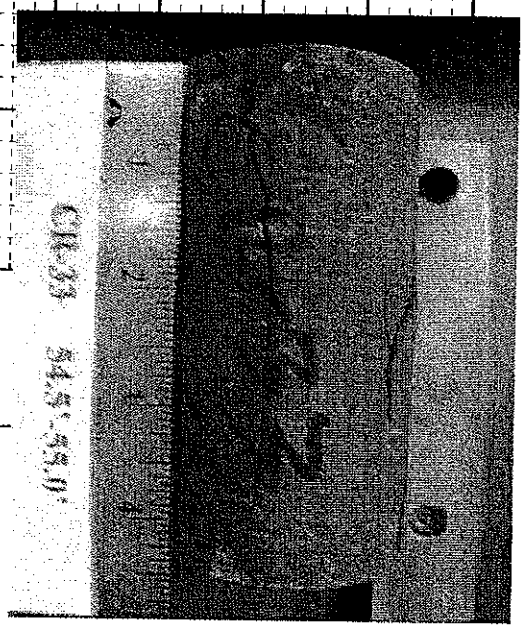
Tested by: DT

Test Date: Jan-30-06

FAILURE PHOTO

Project No. 31737848	Tremley Point Connector Road	COMPRESSIVE STRESS VS STRAIN UNCONFINED COMPRESSIVE STRENGTH TEST Boring: CR-33 Sample: Depth 52-52.5 ft.
Geotesting Services, Inc.		





Specimen Information

Water Content (%)	Wet Unit Weight (pcf)	Dry Unit Weight (pcf)	Length (inch)	Diameter (inch)
1.49	162	159	4.424	1.975

Specimen meets ASTM D4543 shape tolerances

Test Summary

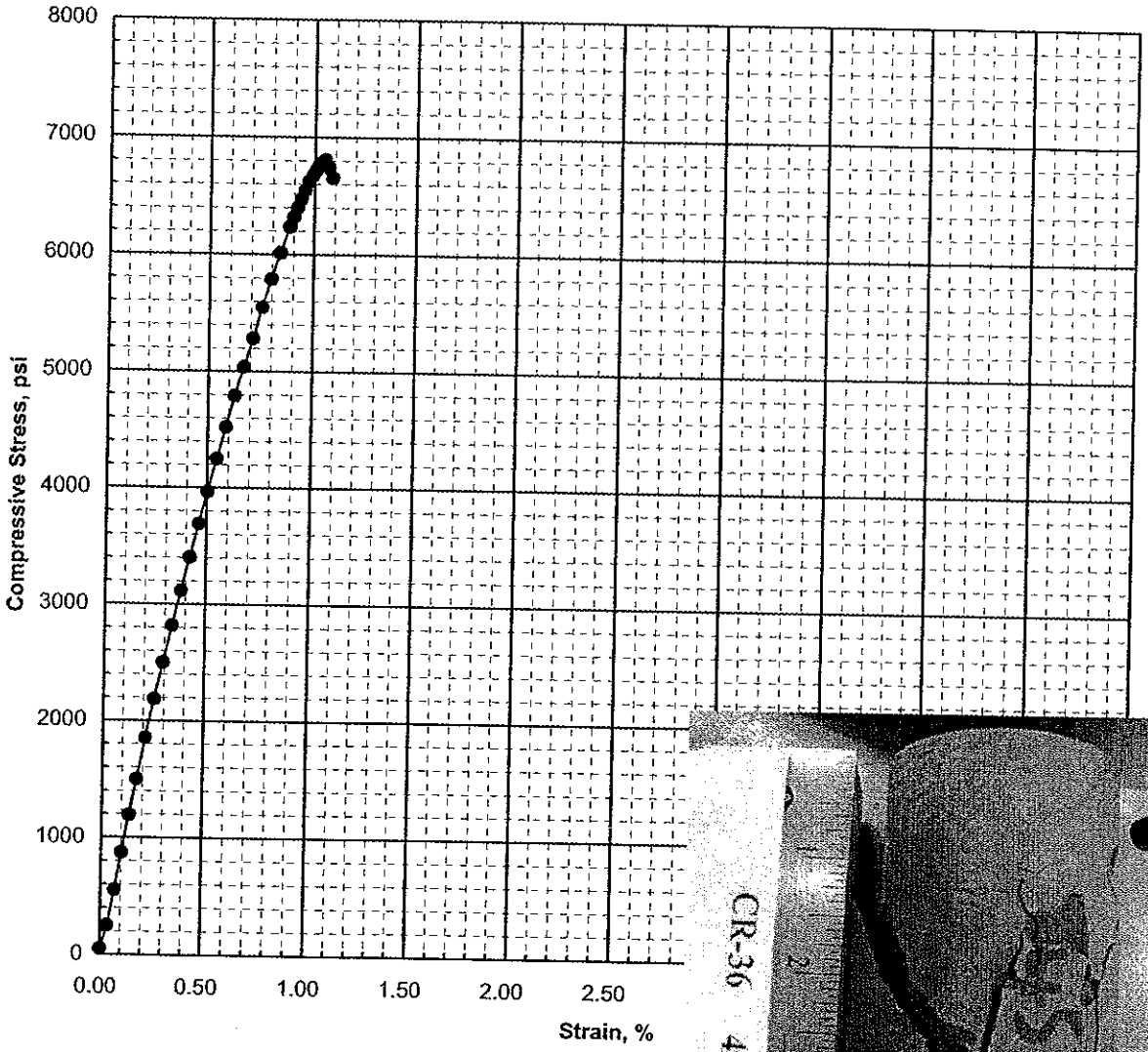
Strain Rate (%/min)	Strain to Peak (%)	q_u (psi)
0.21	0.89	10430

Tested by: DT

Test Date: Jan-30-06

FAILURE PHOTO

Project No. 31737848	Tremley Point Connector Road	**COMPRESSIVE STRESS VS STRAIN UNCONFINED COMPRESSIVE STRENGTH TEST**
Geotesting Services, Inc.		**Boring: CR-33 Sample: Depth 54.5-55 ft.**



FAILURE PHOTO

Specimen Information

Water Content (%)	Wet Unit Weight (pcf)	Dry Unit Weight (pcf)	Length (inch)	Diameter (inch)
2.88	158	154	4.442	1.974

Specimen meets ASTM D4543 shape tolerances

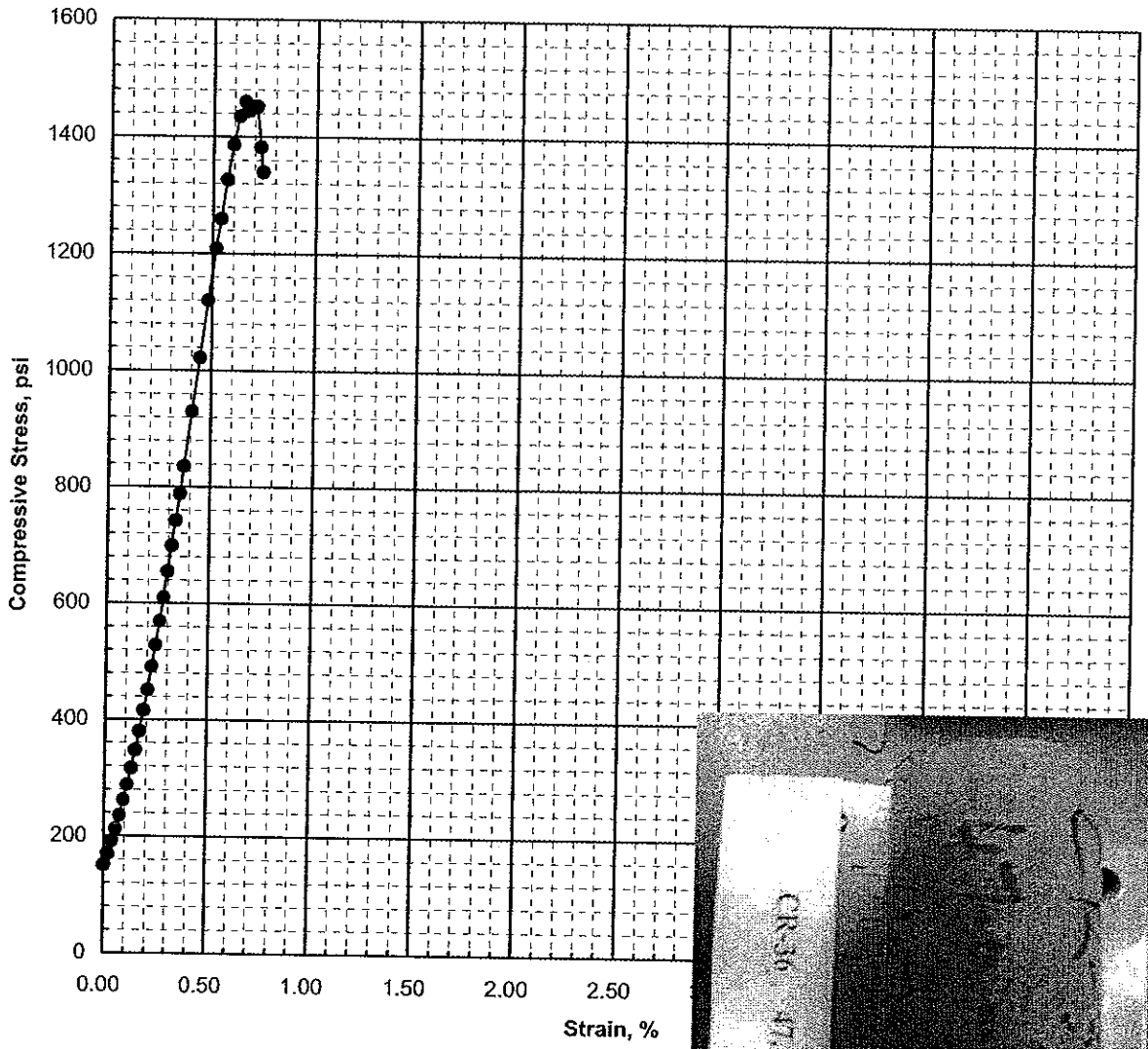
Test Summary

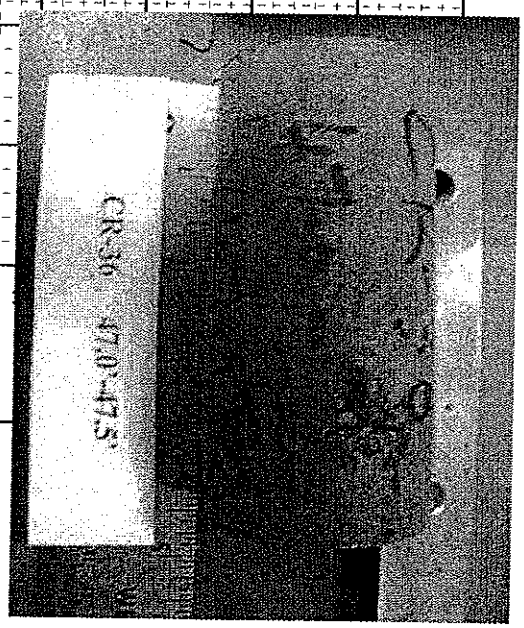
Strain Rate (%/min)	Strain to Peak (%)	q_u (psi)
0.21	1.05	6810

Tested by: DT

Test Date: Jan-30-06

Project No. 31737848	Tremley Point Connector Road	COMPRESSIVE STRESS VS STRAIN UNCONFINED COMPRESSIVE STRENGTH TEST Boring: CR-36 Sample: Depth 45.5-46 ft.
Geotesting Services, Inc.		





Specimen Information

Water Content (%)	Wet Unit Weight (pcf)	Dry Unit Weight (pcf)	Length (inch)	Diameter (inch)
6.21	140	131	4.413	1.966

Specimen does not meet ASTM D4543 shape tolerances

Test Summary

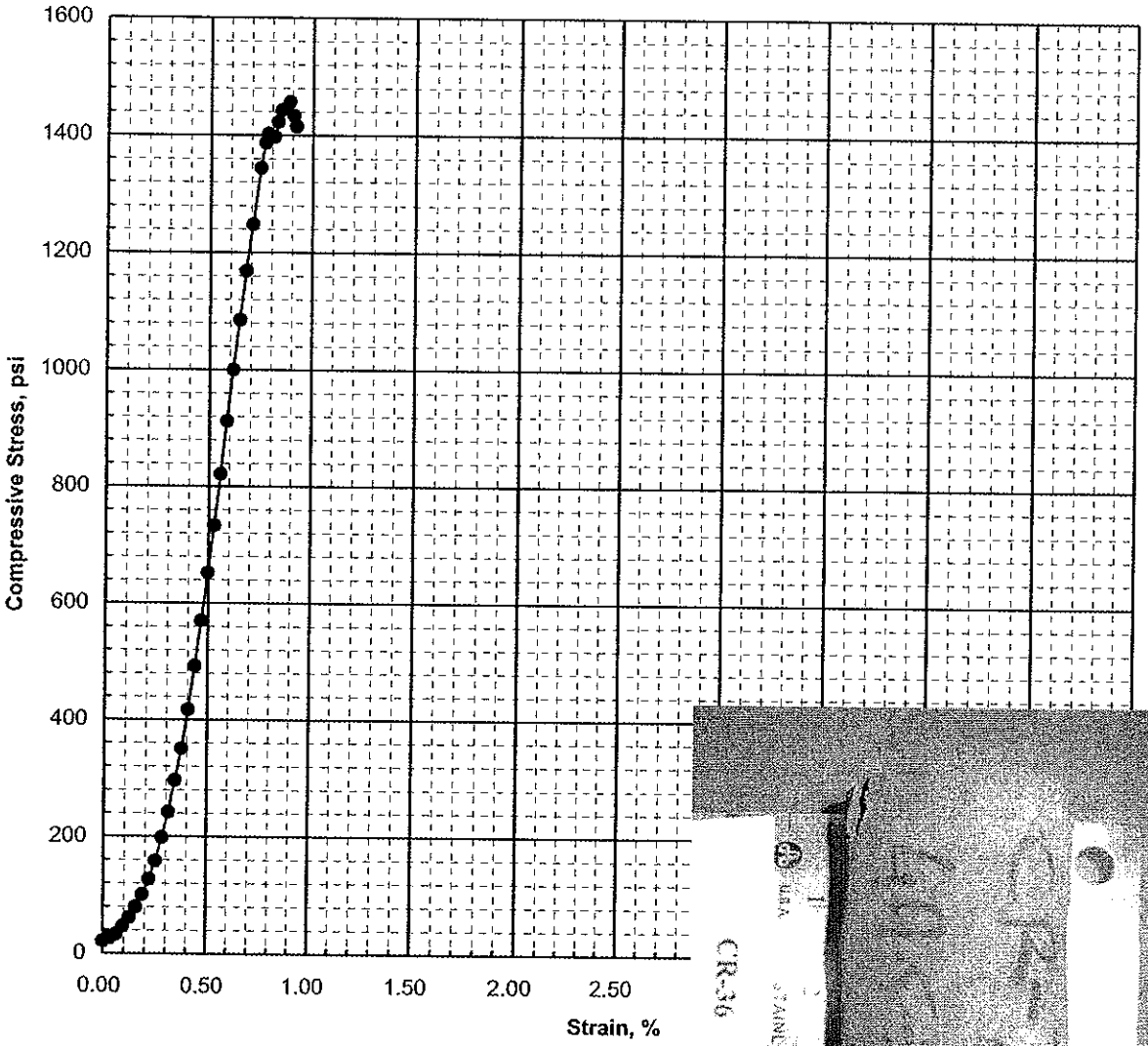
Strain Rate (%/min)	Strain to Peak (%)	q_u (psi)
0.22	0.65	1460

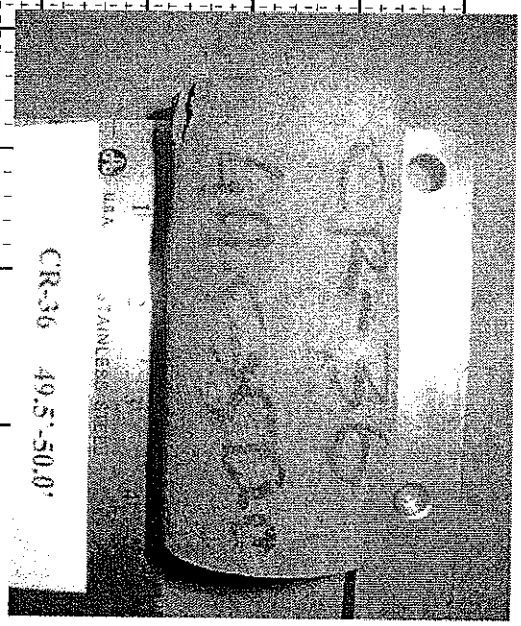
Tested by: DT

Test Date: Jan-30-06

FAILURE PHOTO

Project No. 31737848	Tremley Point Connector Road	**COMPRESSIVE STRESS VS STRAIN UNCONFINED COMPRESSIVE STRENGTH TEST**
Geotesting Services, Inc.		**Boring: CR-36 Sample: Depth 47.0-47.5 ft.**





Specimen Information

Water Content (%)	Wet Unit Weight (pcf)	Dry Unit Weight (pcf)	Length (inch)	Diameter (inch)
5.86	139	131	4.244	1.963

Specimen does not meet ASTM D4543 shape tolerances

Test Summary

Strain Rate (%/min)	Strain to Peak (%)	q_u (psi)
0.23	0.89	1460

Tested by: DT

Test Date: Jan-30-06

FAILURE PHOTO

Project No. 31737848	Tremley Point Connector Road	**COMPRESSIVE STRESS VS STRAIN UNCONFINED COMPRESSIVE STRENGTH TEST** Boring: CR-36 Sample: Depth 49.5-50.0 ft.
Geotesting Services, Inc.		