

GEOTECHNICAL REPORT

**MIDDLETOWN HIGH SCHOOL
NEW LOCATION
MIDDLETOWN, CT**

HRP #DEC0004.GT

July 16, 2004

Prepared By:

**ADEEB CONSULTING, LLC.
71 OLD FARM ROAD
FAIRFIELD, CT 06825**

Prepared For:

**HRP ASSOCIATES, INC.
167 NEW BRITAIN AVENUE
PLAINVILLE, CT 06062**

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1.0 INTRODUCTION

Subsequent to the submittal of our previous geotechnical report dated March 18, 2004, listing foundations recommendations and design parameters for a proposed Middletown High School, to be built on 128 acres area, off Newfield Street, in Middletown, Connecticut, along with associated playing fields and parking areas, the location of the buildings and associated playing fields and parking areas were changed. The present report addresses the newly located proposed buildings and their associated playing fields and parking areas as shown on sheet No. CS-1 entitled "Borings & Geologic Cross-Section Locations-Proposed Middletown High School", prepared by HRP Associates, Inc. and dated July 15, 2004. It must be noted that data obtained from previous borings done on site and their associated laboratory test results of retrieved soil samples have been taken into consideration along with new data generated from additional field investigations conducted in June and July 2004.

2.0 PROJECT DESCRIPTION

The project is located on Wilderman's Way, off Newfield Street, at the location of the existing Woodrow Wilson Middle School and Keigwin Annex in the City of Middletown, Connecticut. It consists of a proposed three-story, approximately 256,020 square-foot high school, a single-story, approximately 26,000 square-foot Vocational Agricultural (Vo-Ag) facility, associated athletic fields, running track, driveways, parking areas and infrastructure improvements to service the proposed projects elements.

3.0 SITE FEATURES

The site is approximately 128 acres in area. Its' eastern portion is occupied by Wetlands areas, whereas its western portion is occupied by Woodrow Wilson Middle School, Keigwin Annex, along with associated playing fields and parking areas.

4.0 FIELD INVESTIGATION

All of the boring logs for this site are included in Appendix A and depicted on attached Sheet CS-1. On August 20 and 21, 2003, five (5) test boreholes were advanced by New England Boring Contractors, Inc. of Glastonbury, Connecticut. The boring locations were field marked in advance by DeCarlo & Doll to represent the four corners and middle of the proposed building layout. Between November 4, and December 15, 2003 nine (9) additional borings B-6 through B-14 were drilled, all within the footprint of the proposed high school and VoAg buildings. Another boring B-16 was drilled west of the athletic fields.

- The relocation of the buildings and associated fields and parking areas necessitated that further field investigation be conducted during the summer of 2004. To that end, twelve (12) additional borings/monitor wells, B-17 through B-28 (the boring numbers were consistent with previous borings) were drilled during the month of June 2004. Six (6) of the twelve (12)

additional borings (B-18 through B-23) were drilled within the footprint of the newly located buildings.

Four (4) borings were drilled in the newly located parking spaces and two (2) borings were drilled north of the Track & Field area (B-17 to the northeast and B-27 to the northwest).

Soil sampling was performed to characterize the materials encountered, and to select certain samples for laboratory analytical testing. As a general method for sampling, the standard split-spoon sampling device was used in accordance with the Standard Penetration Test (ASTM D 1586). This test is described as using a sampler having a 1 $\frac{3}{8}$ -inch inside diameter, driven by a 140-pound hammer falling freely through a height of thirty (30) inches. This test also provides penetration resistance information which is very helpful in the evaluation of the condition of the in-situ materials at various depths.

In circumstances where cohesive or compressible materials were suspected, thin-walled shelly tubes were used to obtain relatively undisturbed samples for more sensitive laboratory testing.

Rock cores, were obtained, at selected borings, in five (5) foot lengths, using an N size drill casing and a diamond core bit. Rock Quality Designation (RQD), measured to evaluate the competency of the rock, is listed on selected boring logs, appended to this report.

5.0 LABORATORY TESTS

All of the laboratory tests of soils, specifically related to moisture, sieve analyses, and Atterberg limits are included in Appendix B. Our previous report dated March 18, 2004, was based on eleven (11) soil samples tested for moisture content, which was found to vary between 29.94% at B-4, between depths of five (5) and seven (7) feet, and 35.77% at B-1 between depths of ten (10) and twelve (12) feet, and on seven (7) samples tested for Atterberg Limits. Three of them (B-3, B-4, and B-5 between depths of 10 and 12 feet) were found to be non-plastic. Three other samples were consistent since they yielded liquid limit values of 38.7, 35.7 and 33.5 and plasticity indices of 15, 14.4 and 8.2. Only one sample B-5 between depths of 5 and 7 feet yielded a liquid limit of 56.8 and a plasticity index of 31.1. The referenced report was also based on consolidation test results performed on four (4) Shelby tube samples with initial void ratios of:

0.812	(B-4 between depths of 10 and 12 feet)
0.99	(B-5 between depths of 5 and 7 feet)
0.79	(B-9 between depths of 10 and 12 feet)
0.98	(B-13 between depths of 8 and 10 feet)

From the soil samples retrieved from B-17 to B-28, various laboratory tests were conducted.

Six (6) samples were tested for moisture content and washed sieve analysis. They are located at:

- B-20 between depths of five (5) and seven (7) feet
- B-21 between depths of five (5) and seven (7) feet
- B-21 between depths of ten (10) and twelve (12) feet
- B-22 between depths of five (5) and seven (7) feet
- B-23 between depths of five (5) and seven (7) feet
- B-26 between depths of five (5) and seven (7) feet

The moisture contents for the above listed samples varied between eighteen percent (18%) and thirty five percent (35%), giving a statistical mean value of twenty seven percent (27%) and a standard deviation of seven percent (7%). The amount of fines – those passing the #200 sieve – varied between seventy percent (70%) and ninety nine percent (99%) by weight, giving a statistical mean value of eighty seven percent (87%) and a standard deviation of fourteen percent (14%).

Two (2) soil samples were tested for Atterberg limits. Their locations are:

- B-22 between depths of ten (10) and twelve (12) feet
- B-25 between depths of five (5) and seven (7) feet

The results were:

- Liquid limits of thirty (30) and thirty four (34)
- Plastic limits of twenty five (25) and twenty four (24)
- And plasticity indices of five (5) and ten (10) for B-22 and B25, respectively.

Furthermore, two (2) new Shelby tube samples retrieved at B-21 A and B-22A between depths of five (5) and seven (7) feet, with initial void ratios of 0.63 and 0.88, respectively, underwent consolidation tests. The results are included in Appendix C, which also includes the two (2) consolidation tests included in our previous (March 18, 2004) geotechnical report.

6.0 GROUNDWATER

Depths to water were measured at sixteen (16) locations and are depicted in Table 1 and graphically on sheet CS-4, which is appended to this report. Groundwater elevations and consequently depths to water from existing ground elevation do fluctuate with seasonal variations and amounts of rainfall. For the purpose of this study, we have added two (2) feet to the height of observed ground water to depict high groundwater conditions

Proposed Middletown High School Groundwater Elevation Data HRP# DEC0004.GT				
Monitoring Well	Top of PVC El. (ft)	DTW (below grade) (ft)	GWE (ft)	
		6/21/04	6/21/04	
MW-1	51.44	3.45		47.99
MW-2	50.31	1.89		48.42
MW-3	51.51	3.00		48.51
MW-4	56.60	7.16		49.44
MW-5	57.48	3.21		54.27
TB-12	50.52	2.55		47.97
TP-3A	23.38	5.72		17.66
TP-10	25.93	6.28		19.65
B-10	30.42	2.41		28.01
B-13	32.52	5.63		26.89
B-17/PZ-3	25.25	1.29		23.96
B-18/PZ-2	33.32	5.12		28.20
B-19/PZ-1	29.80	4.11		25.69
B-18MW	32.16	0.73		31.43
B-21MW	38.90	7.43		31.47
B-22MW	38.49	3.22		35.27

Top of PVC not surveyed in B-10 and B-13. Top of ground is surveyed, and depth from ground to PVC was measured

UNIFIED SOIL CLASSIFICATION SYSTEM

Major divisions		Group symbol	Typical names	Classification criteria for coarse-grained soils		
Coarse-grained soils (more than half of material is larger than No. 200)	Gravels (more than half of coarse fraction is larger than No. 4 sieve size)	GW	Well-graded gravels, gravel-sand mixtures, little or no fines	$C_u = D_{60}/D_{10} > 4$ $C_c = 1 < D_{30}^2/D_{10} \times D_{60} < 3$		
		GP	Poorly graded gravels, gravel-sand mixtures, little or no fines	Not meeting all gradation requirements for GW		
		GM	$\frac{d}{v}$	Silty gravels, gravel-sand-silt mixtures	Atterberg limits below A line or $I_p < 4$	Above A line with $4 < I_p < 7$ are borderline cases requiring use of dual symbols
		GC	Clayey gravels, gravel-sand-clay mixtures	Atterberg limits above A line with $I_p > 7$		
	Sands (more than half of coarse fraction is smaller than No. 4 sieve size)	SW	Well-graded sands, gravelly sands, little or no fines	$C_u = D_{60}/D_{10} > 6$ $C_c = 1 < D_{30}^2/D_{10} \times D_{60} < 3$		
		SP	Poorly graded sands, gravelly sands, little or no fines	Not meeting all gradation requirements for SW		
		SM	$\frac{d}{n}$	Silty sands, sand-silt mixtures	Atterberg limits below A line or $I_p < 4$	Limits plotting in hatched zone with $4 \leq I_p \leq 7$ are borderline cases requiring use of dual symbols
		SC	Clayey sands, sand-clay mixtures	Atterberg limits above A line with $I_p > 7$		
Fine-grained soils (more than half of material is smaller than No. 200)	Sils and clays (liquid limit < 50)	ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands, or clayey silts with slight plasticity	1. Determine percentages of sand and gravel from grain-size curve. 2. Depending on percentages of fines (fraction smaller than 200 sieve size), coarse-grained soils are classified as follows: Less than 5%—GW, GP, SW, SP, More than 12%—GM, GC, SM, SC 5 to 12%—Borderline cases requiring dual symbols		
		CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays			
		OL	Organic silts and organic silty clays of low plasticity			
	Sils and clays (liquid limit > 50)	MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts			
		CH	Inorganic clays of high plasticity, fat clays			
		OH	Organic clays of medium to high plasticity, organic silts			
	Highly organic soils	Pe	Peat and other highly organic soils			

7.0 SUBSOIL CLASSIFICATION

Based on various laboratory tests conducted on many soil samples retrieved, the subsoil belongs to the ML group symbol of the Unified Soil Classification System. The Unified Soil Classification is depicted in Table 2.

8.0 STATISTICAL ANALYSIS OF STANDARD PENETRATION TEST VALUES

A statistical analysis of the standard penetration test values listed on the boring logs drilled within, and in the vicinity of, the footprints of the relocated buildings yielded the following data:

1. Between depths of zero (0) and two (2) feet, the standard penetration test values had a mean value of eleven (11) and a standard deviation value of four (4). Values ranged between a minimum of seven (7) and a maximum of twenty-one (21).
2. Between depths of five (5) and seven (7) feet, the standard penetration test values had a mean value of fifteen (15) and a standard deviation value of six (6). Values ranged between a minimum of four (4) and a maximum of twenty-five (25).
3. Between depths of ten (10) and twelve (12) feet, the standard penetration test values had a mean value of fifteen (15) and a standard deviation of eleven (11). Values ranged between a minimum of seven (7) and a maximum of thirty-six (36).
4. Between depths of fifteen (15) and seventeen (17) feet, the standard penetration test values had a mean value of sixteen (16) and a standard deviation value of eleven (11). Values ranged between a minimum of eight (8) and a maximum of forty (40).

The depth to ledge varied from eight (8) feet at B-19 to thirty-seven (37) feet at B-12 within the footprint of the newly located buildings, with depths to ledge also measuring:

- ten (10) feet at B-18
- thirteen (13) feet at B-20
- and deeper than twenty five (25) at all other borings within the footprint of the buildings

The location of ledge is shown in cross sections A-A and B-B on sheets CS-2 and CS-3.

9.0 DESIGN PARAMETERS

Bearing Capacity	3000 PSF
Angle of Internal Friction	32°
Friction Angle Concrete-Soil	30°
K _a Active Pressure Coefficient	0.24
K _o At-Rest Pressure Coefficient	0.45
Sliding Factor	0.58
Frost Protection	42 inches
Seismic Factor	S ₁ = 1.0
Peak Velocity Related Acceleration	A _v = 0.11
Unit Weight of Backfill	125 PCF

10.0 SITE-SPECIFIC CONSTRUCTION CONSIDERATIONS AND MONITORING

Theoretically, the recommended bearing capacity of 3000 PSF was based on a standard penetration test mean value of fifteen (15) at depths of five (5) to twelve (12) feet below existing grade at the time the various geotechnical investigations were performed. This recommended bearing capacity needs to be verified at every boring location by the structural engineer based on its actual elevation and the proposed bottom of footing elevation at that location.

Per sheet CS-1 referenced in this report, the proposed top of slab on grade elevation is 38.0 feet in the lower level and 40.67 in the upper level. The latter elevations apply generally to the west half of the buildings and the former to the east half. This places the footings at elevations of 34.0 feet and 36.67 feet for lower and upper slabs on grade, respectively.

Consequently, the following earthwork activities are required at each boring location within the footprint of the buildings:

- At B-1 and B-20 (north side), approximately eight (8) feet of fill is needed. The recommended bearing capacity will be provided.
- At B-18 (west side), approximately five (5) feet of fill is needed. The recommended bearing capacity will be provided.
- At B-19 (west side), approximately three (3) feet of cut is needed. The recommended bearing capacity is provided.
- At B-22 (south side), approximately three (3) feet to six (6) feet of cut is needed, depending on whether an upper or lower slab on grade is to be built. The excavation shall extend two (2) feet below proposed bottom of footing elevation and grade shall be brought up as recommended in this report.
- At B-9, approximately two (2) feet of fill is needed. The recommended bearing capacity is provided.

- At B-21, approximately two (2) feet of cut is needed. The excavation shall extend two (2) feet below proposed bottom of footing elevation and grade shall be brought up as recommended in this report.
- At B-23, approximately four (4) feet of cut is needed. The excavation shall extend five (5) feet below proposed bottom of footing elevation and grade shall be brought up as recommended in this report.

11.0 SOIL REMEDIATION UNDER FOOTINGS

1. Where groundwater is within eighteen (18) inches from bottom of footings elevations, the following remedial action shall be taken.

Footings shall be over excavated by eighteen (18) inches. Then a twelve (12) inch thick layer of Modified Riprap shall be placed with NO VIBRATION. The Modified Riprap shall meet the following gradation requirements:

<u>Stone Size</u>	<u>% of the Mass</u>
10" or over	0
6" to 10"	20-50
4" to 6"	30-60
2" to 4"	30-40
1" to 2"	10-20
Less than 1"	0-10

The Modified Riprap shall be choked with one (1) inch minus crushed stone to insure a smooth surface. A geotextile membrane, Mirafi 600X or equivalent shall be placed in a stretched condition and secured with staples. Then a six (6) inch thick of one (1) inch minus crushed stone shall be placed above the geofabric to bring grade up to proposed bottom of footings elevation.

2. Where the groundwater is deeper than eighteen (18) inches below bottom of footings elevations; and, where the bottom of footings elevations bears directly on silt/clay soils, the following remedial action shall be taken.

Footings shall be over-excavated by eighteen (18) inches. Then a six (6) inch thick concrete mud slab, with f'c no less than 2,000 PSI, shall be placed. It shall exceed the width of the proposed footing by no less than eighteen (18) inches, at all sides.

A geotextile membrane, Mirafi 600X or equivalent, shall be placed over the mud slab and extended upwards at an angle of 30 degrees with the horizontal, at both ends. Finally grade shall be brought up to proposed bottom of footings

elevations by placing a twelve (12) inch thick layer of crushed stone and compacting it with a vibratory roller.

The locations of the soil remediation under footings and slabs are depicted on sheet CS-5.

12.0 BACKFILL

All structural backfill shall meet the following gradation requirements:

Sieve Size	Percent Passing
3.5"	100
¾"	50-100
#4	25-100
#200	0-10

It shall be compacted to no less than 95% of its maximum dry density, established in the laboratory via Modified Proctor Test and placed in individual lifts no thicker than twelve (12) inches in thickness, in the loose state. This structural backfill applies to locations that are twelve (12) inches above groundwater. The elevation of groundwater is depicted on sheet CS-4 and for seasonal variation, a two (2) foot increase should be added to the elevations on that sheet. Where excavation is to be carried out in water, the backfill shall consist of Modified Riprap as specified in Section 11 of this report. The Modified Riprap shall extend one (1) foot above water. It shall be choked with one (1) inch minus crushed stone to insure a smooth surface over which a geotextile fabric, Mirafi 600X or equivalent, shall be placed as explained in Section 11 of this report. Should more backfill be needed above the geofabric, it shall meet the requirements specified at the beginning of this section (Section 12).

13.0 SLABS ON GRADE

Slabs on grade shall be placed over a twelve (12) inch thick gravel base, where the water table is two (2) feet or more below subbase elevation. Such base shall have the same gradation requirements as structural fill listed in Section 12. It shall be compacted to no less than 95% of its maximum dry density, established in the laboratory via Modified Proctor Test.

Where the water table is less than two (2) feet below subbase elevation, a twelve (12) inch thick base ~~¾"~~ crushed stone shall be placed and compacted with NO VIBRATION.

Concrete for the slab on grade shall be no less than five (5) inches thick. Its concrete strength shall be no less than 3,000 PSI at 28 days. It shall be reinforced with 6x6 – W1.4 x W1.4 welded wire fabric.

In heavy storage areas with vehicle loads, the slab on grade shall be no less than six (6) inches thick. It shall be reinforced as follows:

1. For loads less than 100 PSF use 6x6 – W2.0 x W2.0 welded wire fabric.
2. For loads exceeding 100 PSF but less than 200 PSF use 6x6 – W2.9 x W2.9 welded wire fabric.

14.0 DRAINAGE

Drains are recommended for footings and under slabs on grade.

15.0 PAVEMENTS

All pavements shall have a twelve (12) inch thick gravel subbase meeting the following gradation requirements:

Sieve Size	Percent Passing
3.5"	100
3/4"	50-100
#4	25-100
#200	0-8

and shall be compacted to no less than 95% of the maximum dry density of the sub base, established in the laboratory via Modified Proctor Test. The recommended pavement sections above the sub base are:

1. For passenger cars parking: three (3) inch thick bituminous concrete over a six (6) inch thick $\frac{3}{8}$ " crushed stone base.
2. For bus and truck access areas: four (4) inch thick bituminous concrete over an eight (8) inch thick $\frac{3}{8}$ " crushed stone base.

All pavement grades need to be at least two (2) feet above the probable high water table. Therefore, the parking lots in the southerly end of the site will need to have underdrains to meet this condition.

16.0 ATHLETIC FIELDS

Athletic fields should be built so that their grade is at least two (2) feet above the probable high water table.

In areas of fill, the latter should be compacted to no less than 90% of the fill's maximum dry density, established in the laboratory, via Modified Proctor Test. Native soils may be used as fill to raise the grade in athletic fields, provided they are placed in lifts no thicker than nine (9) inches. A note of caution: native soils are hydrophilic: consequently it is not easy to keep them at optimum moisture content, a needed requirement to achieve the desired compaction, regardless of size, or number of passes of compacting equipment. Briefly stated, construction progress, when using native soils as fill, will be weather dependent.

17.0 EXCLUSIONS

This report has been prepared for specific application to the subject project in accordance with generally accepted geotechnical and foundation engineering practices. No other warranty, expressed or implied, is made.

The analysis and recommendations submitted in this report are based in part upon data obtained from referenced explorations. The extent of any variation between explorations may not be known until actual construction. Should variations be encountered, HRP Associates, Inc. shall be immediately informed and its ensuing recommendations be strictly adhered to.

HRP Associates, Inc. and Adeeb Consulting will perform a general review of the final design and specifications in order that geotechnical design recommendations may be properly interpreted and implemented as they were intended.

APPENDIX A

Borings Logs

Project Middletown High School				HRP ASSOCIATES, INC. ENGINEERING & GEOLOGY		Test Boring/Monitor Well ID MW-1	
Location Middletown, CT				DRILLING/SOIL LOG		Sheet No. 1	
HRP# DEC-0002.P2							
Contractor ADT							
Type	Casing HAS	Sampler SS	Core Barrel	Hammer (weight-lb./fall-30") 140/30		Start 9/17/03 Finish 9/17/03	
O.D. (inch)				Rig Type CME-75		Driller Victor / Remy HRP Rep. Melody Bova	
I.D. (inch)	4 1/4"	2"					
Depth (ft.)	Sampler Blows per 5"	Sample Interval	Recovery (ft)	Density or Consistency/Moisture	Profile Change	Remarks (color, structure, grain size, staining, odor)	PID (ppm)
0	20,21,15,12	0-2' below asphalt	2.0'	Dry		2" Asphalt Red-brown silt and clay with little very fine sand and few cobbles	0.0
	25,22,23,15	2-4'	0'	Dry		Same as above on auger flights	
	7,6,7,11	4-6'	1.5'	Wet @ -4.5' perched?	4	Red-brown clay with little silt, slight odor	0.0
5	10,8,6,10	6-8'	1'	Moist to Wet	6.5'	Same as above Red-brown clay and silt with little fine gravel (fill?)	0.2
				Moist		Auger to 13' - plug came up dry Same as above	PID not working
10	6,27,27,18	13'-15'	1'	Moist - SS Wet at tip but soil not		Plastic red-brown clay and silt with some fine gravel and cobble	0.0
	14,43,46,30	18-20'	1.5'	Wet to Dry		Same as above, plug came up dry to moist Same as above Wet from 19-19.3', Dry at tip Auger to 20' - Wet soils on flights @ 20'	0.0
15				Wet		Auger flights - plastic red-brown clay with little silt Auger refusal @ 20' on rock (Boulder?) Plug Wet 16-20'	
20						End of Boring Set well @ 20' Screen (10 slot) 20-10' Riser 10' Sand (#1) 20-8' Bentonite chips 8-7' Native 7' to grade Flush mount finish ADT handway 3 bags sand 1 bag chips HRP Lock	
SAMPLE PENETRATION RESISTANCE - 140 lb. wt. falling 30" on 2" O.D. sampler							
Cohesionless Density				Cohesive Consistence		PROPORTIONS	
# of Hammer Blows			# of Hammer Blows			trace	0 to 10 %
0-4	very loose		0-2	very soft		little	10 to 20 %
5-9	loose		3-4	soft		some	20 to 35 %
10-29	medium dense		5-8	medium stiff		and	30 to 50 %
30-49	dense		9-15	stiff		Ground Elevation:	
50+	very dense		18-30	very stiff		Reference Elevation:	
			31+	hard		Bottom Elevation:	

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Project: Middletown High School Investigation				HRP ASSOCIATES, INC.		Test Boring/Monitor Well ID B-1	
Location: Wilderman Way, Middletown, CT				ENGINEERING & GEOLOGY			
HRP# DEC-0002.GT				DRILLING/SOIL LOG		Sheet No. 1 of 1	
Contractor: New England Boring Contractors							
	Casing	Sampler	Core Barrel	Hammer (weight-lb./fall-30")		Start: 8/20/03	
Type	HW	SS	NQ2	140/30		Finish: 8/20/03	
O.D. (inch)	-	-	-	Rig Type: B-53 Mobile Drill Rig		Driller: Steven Ramsdell / Kyle Golob	
I.D. (inch)	4"	1 3/8"	2"			HRP Rep. Melody Bova	
Depth (ft.)	Sampler Blows per 6"	Sample Interval	Recovery (ft)	Strata Profile	Remarks (color, structure, grain size, staining, odor)		Field Vane Shear (Ft.-lbs.)
0	2, 4, 5, 7	0'-2'	16"	CL / ML	Red, brown silty clay, trace fine sand, trace root fragments (medium stiff)		
5	4, 4, 3, 3	5'-7'	17"		Grades with less silt and without roots		
10	1, 1, 2, 4	10'-12'	12"		Grades moist and with increased silt content		
15	2, 3, 5, 4	15'-17'	18"		Grades to medium stiff		
20	7, 13, 13, 24	20'-22'	24"	Till	Grades to very stiff, with occasional cobbles and fractured rock fragments		
25	90 for 1"	25'-27'			Red brown, silty clay, and medium to fine sand, little c-f gravel, trace mica (very stiff)		
30		30'-32'			Refusal		
35		35'-37'			Note: 1. Borehole terminated at 25.5 feet on probable rock		
40		40'-42'					
45		45'-47'					
SAMPLE PENETRATION RESISTANCE - 140 lb. wt. falling 30" on 2" O.D. sampler							
Cohesionless Density				PROPORTIONS			
# of Hammer Blows					trace	0 to 10 %	
0-4	very loose				little	10 to 20 %	
5-9	loose				some	20 to 35 %	
10-29	medium dense				and	30 to 50 %	
30-49	dense			Ground Elevation: 26.1 feet			
50+	very dense						

Project: Middletown High School Investigation				HRP ASSOCIATES, INC.		Test Boring/Monitor Well ID B-2	
Location: Wilderman Way, Middletown, CT				ENGINEERING & GEOLOGY			
HRP# DEC-0002.GT				DRILLING/SOIL LOG		Sheet No. 1 of 1	
Contractor: New England Boring Contractors							
	Casing	Sampler	Core Barrel	Hammer (weight-lb./fall-30")		Start: 8/20/03	
Type	HW	SS	NQ2	140/30		Finish: 8/20/03	
O.D. (inch)	-	-	-	Rig Type: B-53 Mobile Drill Rig		Driller: Steven Ramsdell / Kyle Golob	
I.D. (inch)	4"	1 3/8"	2"			HRP Rep. Melody Bova	
Depth (ft.)	Sampler Blows per 6"	Sample Interval	Recovery (ft)	Strata Profile	Remarks (color, structure, grain size, staining, odor)		Field Vane Shear (Ft.-lbs.)
0	2, 2, 3, 4	0'-2'	12"	CL	Red, brown silty clay, trace fine sand, trace root fragments (medium stiff)		
5	4, 5, 10, 7	5'-7'	10"		Grades without roots, and stiff		
10	Shelby Tube T-1	10'-12'	22"		Driller detects change at 11.5 feet		
				Till			
15	Core 7 min. Run 3 min No. 1 2 min 2 min 2 min	15'-17'	RQD=0%	R O C K	Red brown fine siltstone Highly fractured with mica coating on fractures		
20	Core 2 min Run 1 min No. 2 1 min 2 min 2 min	20'-22'	RQD=0%		fracture spacing increased		
25		25'-27'					
30		30'-32'					
35		35'-37'				Note: 1. Borehole terminated at 24 feet below grade 2. Ground water flowing out of the borehole top, indicating an artesian condition	
40		40'-42'					
45		45'-47'					
SAMPLE PENETRATION RESISTANCE - 140 lb. wt. falling 30" on 2" O.D. sampler							
Cohesionless Density							
# of Hammer Blows				PROPORTIONS			
0-4		very loose		trace		0 to 10 %	
5-9		loose		little		10 to 20 %	
10-29		medium dense		some		20 to 35 %	
30-49		dense		and		30 to 50 %	
50+		very dense					
				Ground Elevation: 24.5 feet			

Project: Middletown High School Investigation				HRP ASSOCIATES, INC.		Test Boring/Monitor Well ID B-3	
Location: Wilderman Way, Middletown, CT				ENGINEERING & GEOLOGY			
HRP# DEC-0002.GT				DRILLING/SOIL LOG		Sheet No. 1 of 1	
Contractor: New England Boring Contractors							
	Casing	Sampler	Core Barrel	Hammer (weight-lb./fall-30")		Start: 8/21/03	
Type	HW	SS	NQ2	140/30		Finish: 8/21/03	
O.D. (inch)	-	-	-	Rig Type: B-53 Mobile Drill Rig		Driller: Tim Carpenter / John Oulette	
I.D. (inch)	4"	1 3/8"	2"			HRP Rep.: Melody Bova	
Depth (ft.)	Sampler Blows per 5"	Sample Interval	Recovery (ft)	Strata Profile	Remarks (color, structure, grain size, staining, odor)		Field Vane Shear (Ft.-lbs.)
0	2, 4, 5, 7	0'-2'	19"	CL / ML	Red, brown silty clay, trace fine sand, trace root fragments (stiff)	150 max.	
5	7, 6, 8, 9	5'-7'	24"		Grades with increased silt content		
10	4, 4, 5, 5	10'-12'	21"		Grades moist and medium stiff		
15	5, 6, 8, 9	15'-17'	19"		With zones of red brown silt		
20	4, 5, 9, 11	20'-22'	20"		Grades with little coarse to fine gravel		
	7, 15, 20, 17	22'-24'					
25	28, 36, 100 for 4"	25'-26'4"	18"		Till		Red brown, medium to fine sand, some c-f gravel, trace clay (dense)
30		30'-32'			Refusal		
35		35'-37'			Note:		
40		40'-42'			1. Borehole terminated at 26.4 feet on probable rock		
45		45'-47'					
SAMPLE PENETRATION RESISTANCE - 140 lb. wt. falling 30" on 2" O.D. sampler							
Cohesionless Density							PROPORTIONS
# of Hammer Blows							
0-4	very loose				trace	0 to 10 %	
5-9	loose				little	10 to 20 %	
10-29	medium dense				some	20 to 35 %	
30-49	dense				and	30 to 50 %	
50+	very dense				Ground Elevation: 31.3 feet		

Project: Middletown High School Investigation				HRP ASSOCIATES, INC.		Test Boring/Monitor Well ID B-4	
Location: Wilderman Way, Middletown, CT				ENGINEERING & GEOLOGY			
HRP# DEC-0002.GT				DRILLING/SOIL LOG		Sheet No. 1 of 1	
Contractor: New England Boring Contractors							
	Casing	Sampler	Core Barrel	Hammer (weight-lb./fall-30")		Start: 8/20/03	
Type	HW	SS	NQ2	140/30		Finish: 8/21/03	
O.D. (inch)	-	-	-	Rig Type: B-53 Mobile Drill Rig		Driller: Steve Ramsdell / Tim Carpenter	
I.D. (inch)	4"	1 3/8"	2"			HRP Rep. Melody Bova	
Depth (ft.)	Sampler Blows per 6"	Sample Interval	Recovery (ft)	Strata Profile	Remarks (color, structure, grain size, staining, odor)		Field Vane Shear (Ft.-lbs.)
0	2, 2, 4, 7	0'-2'	13"	CL / ML	Red, brown medium to fine sand and silty clay, trace root fragments (medium dense)		110 max.
5	3, 4, 5, 5	5'-7'	24"		Grades to a clayey silt, without the roots and moist		
10	Shelby Tube T-2	10'-12'	24"		Shelby tube obtained and the hole cleaned to 15 feet		
					Change approximate		
15	17, 19, 12, 9	15'-17'	24"	Till	Red brown, silty clay, little c-f gravel, trace medium to fine sand (very stiff)		
20	10, 12, 19, 27	20'-22'	10"		Grades to coarse to fine sand, with little coarse-fine gravel (dense)		
25	8, 12, 13, 47 50 for 2"	25'-27'	24"		Grades with occasional pockets of brown silty clay		
30		30'-32'			Refusal		
35		35'-37'		Note: 1. Borehole terminated at 27 feet on probable rock			
40		40'-42'					
45		45'-47'					
SAMPLE PENETRATION RESISTANCE - 140 lb. wt. falling 30" on 2" O.D. sampler							
Cohesionless Density				PROPORTIONS			
# of Hammer Blows				trace	0 to 10 %		
0-4	very loose			little	10 to 20 %		
5-9	loose			some	20 to 35 %		
10-29	medium dense			and	30 to 50 %		
30-49	dense			Ground Elevation: 34.4 feet			
50+	very dense						

Project: Middletown High School Investigation				HRP ASSOCIATES, INC.		Test Boring/Monitor Well ID B-5	
Location: Wilderman Way, Middletown, CT				ENGINEERING & GEOLOGY			
HRP# DEC-0002.GT				DRILLING/SOIL LOG		Sheet No. 1 of 1	
Contractor: New England Boring Contractors							
	Casing	Sampler	Core Barrel	Hammer (weight-lb./fall-30")		Start: 8/21/03	
Type	HW	SS	NQ2	140/30		Finish: 8/21/03	
O.D. (inch)	-	-	-	Rig Type: B-53 Mobile Drill Rig		Driller: Steve Ramsdell / John Oullette	
I.D. (inch)	4"	1 3/8"	2"			HRP Rep. Melody Bova	
Depth (ft.)	Sampler Blows per 6"	Sample Interval	Recovery (ft)	Strata Profile	Remarks (color, structure, grain size, staining, odor)		Field Vane Shear (Ft.-lbs.)
0	6, 2, 3, 7	0'-2'	13"	CL / ML	Red, brown silty clay, trace fine sand, trace roots/organics (medium stiff)		150 max.
5	Shelby Tube T-3	5'-7'			Grades with higher clay content and without the organic material		
10	4, 4, 5, 7	10'-12'	18"		Grades to a clayey silt, without trace c-f gravel (medium dense)		
15	4, 9, 7, 8	15'-17'	15"		Change approximate		
20	11, 16, 28 100 for 4"	20'-22' 21'-10"	20"		Till	Red brown, silty clay (very stiff), trace c-f gravel and occasional zones of c-f sand, little c-f gravel	
25		25'-27'					
30		30'-32'			Notes: 1. Borehole terminated at 21.8 feet on probable rock		
35		35'-37'					
40		40'-42'					
45		45'-47'					
SAMPLE PENETRATION RESISTANCE - 140 lb. wt. falling 30" on 2" O.D. sampler					PROPORTIONS		
Cohesionless Density							
# of Hammer Blows					trace	0 to 10 %	
0-4	very loose				little	10 to 20 %	
5-9	loose				some	20 to 35 %	
10-29	medium dense				and	30 to 50 %	
30-49	dense			Ground Elevation: 29.8 feet			
50+	very dense						

Project: Middletown High School Investigation				HRP ASSOCIATES, INC.		Test Boring/Monitor Well ID B-6	
Location: Wilderman Way, Middletown, CT				ENGINEERING & GEOLOGY			
HRP# DEC-0002.GT				DRILLING/SOIL LOG		Sheet No. 1 of 1	
Contractor: New England Boring Contractors							
Casing		Sampler	Core Barrel	Hammer (weight-lb./fall-30")		Start 11/04/03	
Type HW		SS	NQ2	140/30		Finish 12/15/03	
O.D. (inch)		-	-	Rig Type: B-53 Mobile Drill Rig		Driller Trent	
I.D. (inch)		4"	1 3/8"	2"		HRP Rep. John Moss	
Depth (ft.)	Sampler Blows per 6"	Sample Interval	Recovery (ft)	Strata Profile	Remarks (color, structure, grain size, staining, odor)		Field Vane Shear (FL-lbs.)
0	2-4-6-11	0'-2'	17"	CL	Red brown silty clay, trace fine sand (medium stiff)		
5	3-4-4-6	5'-7'	20"		Grades medium stiff to stiff		
10	5-8-9-10	10'-12'	14"	ML	Red brown silt with some clay (very moist)		
15	16-19-28-20	15'-17'			Grades very dense with little fine gravel, trace coarse to fine sand		
20	22-28-32-36	20'-22'		Till	Red brown c to f sand, little clay, c to fine gravels (very dense)		
25	Core 3 min. Run 10 min. No. 1 14 min. Core 7 min. Run 5 min. No. 2 2 min. 3 min. 5 min.	RQD = 0	14"	R	Bedrock		
30	Core 4 min. Run 6 min. No. 3	RQD = 67%	5'	O C K	Red brown fine siltstone, highly fractured less fractured		
35		RQD = 25%			Notes: 1. Boring terminated at 33.5 feet 2. Artesian water pressure observed in fractured zone 3. Very moist soil at 10'-12' b.g. Water table near 12' b.g.		
40		35'-37'					
45		40'-42'					
		45'-47'					
SAMPLE PENETRATION RESISTANCE - 140 lb. wt. falling 30" on 2" O.D. sampler					PROPORTIONS		
Cohesionless Density							
# of Hammer Blows					trace little some and	0 to 10 % 10 to 20 % 20 to 35 % 30 to 50 %	
0-4		very loose					
5-9		loose					
10-29		medium dense					
30-49		dense					
50+		very dense					
					Ground Elevation:		
					Reference Elevation:		
					Bottom Elevation:		

Project: Middletown High School Investigation				HRP ASSOCIATES, INC.		Test Boring/Monitor Well ID B-7	
Location: Wilderman Way, Middletown, CT				ENGINEERING & GEOLOGY			
HRP# DEC-0002.GT				DRILLING/SOIL LOG		Sheet No. 1 of 1	
Contractor: New England Boring Contractors							
	Casing	Sampler	Core Barrel	Hammer (weight-lb./fall-30")		Start 12/15/03	
Type	HW	SS	NQ2	140/30		Finish	
O.D. (inch)	-	-	-	Rig Type: B-53 Mobile Drill Rig		Driller Tim Carpenter	
I.D. (inch)	4"	1 3/8"	2"			HRP Rep. John Moss	
Depth (ft.)	Sampler Blows per 6"	Sample Interval	Recovery (ft)	Strata Profile	Remarks (color, structure, grain size, staining, odor)		Field Vane Shear (Ft.-lbs.)
0	1-4-6-4	0'-2'	20"		Red brown silty clay, trace fine gravel, trace roots		
5	4-6-7-8	5'-7'	24"	CL/ML	Grades moist, without the roots, and with zones of clayey silt		
10	4-4-4-6	10'-12'	24"		Grades moist, and with zones of clayey silt		
15	4-4-4-7	15'-17'	18"		Change detected by driller		
20	7-9-14-17	20'-22'	8"	TILL	Till - Brown course to fine sand and fine gravel, trace coarse gravel (dense)		
25	13-14-22-20	25'-27'	0"				
30		30'-32'			Notes:		
35		35'-37'			1. Boring terminated at 29.5 feet on probable rock.		
40		40'-42'			2. Very moist soil at 10'-12' b.g. Water table near 12' b.g.		
45		45'-47'					
SAMPLE PENETRATION RESISTANCE - 140 lb. wt. falling 30" on 2" O.D. sampler							
Cohesionless Density				PROPORTIONS			
# of Hammer Blows							
0-4		very loose		trace		0 to 10 %	
5-9		loose		little		10 to 20 %	
10-29		medium dense		some		20 to 35 %	
30-49		dense		and		30 to 50 %	
50+		very dense					
				Ground Elevation:			
				Reference Elevation:			
				Bottom Elevation:			

J:DECARDEC0002.GT\SS\drill logs

Project: Middletown High School Investigation				HRP ASSOCIATES, INC.		Test Boring/Monitor Well ID B-9	
Location: Wilderman Way, Middletown, CT				ENGINEERING & GEOLOGY			
HRP# DEC-0002.GT				DRILLING/SOIL LOG		Sheet No. 1 of 1	
Contractor: New England Boring Contractors							
	Casing	Sampler	Core Barrel	Hammer (weight-lb./fall-30")		Start 12/5/03	
Type	HW	SS	NQ2	140/30		Finish	
O.D. (inch)	-	-	-	Rig Type: B-53 Mobile Drill Rig		Driller Tim Carpenter	
I.D. (inch)	4"	1 3/8"	2"			HRP Rep. John Moss	
Depth (ft.)	Sampler Blows per 6"	Sample Interval	Recovery (ft)	Strata Profile	Remarks (color, structure, grain size, staining, odor)		Field Vane Shear (Ft.-lbs.)
0	1-4-8-10	0'-2'	16"	Topsoil	Topsoil, red brown silt and clay, trace f-m gravel, trace roots		
5	7-9-11-11	5'-7'	24"	CL	Red brown silty clay, stiff		
	5-6-7-10	8'-10"	24"		Red brown silty clay, trace of fine gravel		
10	Shelby Tube	10'-12"			Pushed a Shelby Tube from 10-12 feet		
15	5-6-8-8	15'-17'	12"		grades medium stiff to stiff		
20	6-6-28-26	20'-22'	12"				
25	32-27-33-100/4"	26'-28'	22"	T I L L	Till- Red Brown clay with gravel Cobble Layer detected @ 23 feet		
30		30'-32'		Weathered Rock	Siltstone in bt - drilling through weathered rock		
35		35'-37'			Notes: 1. Boring terminated at 29' on probable rock 2. Wet soil at 15'-17' b.g. Water table between 12'-15' b.g.		
40		40'-42'					
45		45'-47'					
SAMPLE PENETRATION RESISTANCE - 140 lb. wt. falling 30" on 2" O.D. sampler							
Cohesionless Density				PROPORTIONS			
# of Hammer Blows				trace	0 to 10 %		
0-4	very loose			little	10 to 20 %		
5-9	loose			some	20 to 35 %		
10-29	medium dense			and	30 to 50 %		
30-49	dense			Ground Elevation:			
50+	very dense			Reference Elevation:			
				Bottom Elevation:			

Project: Middletown High School Investigation			HRP ASSOCIATES, INC.		Test Boring/Monitor Well ID B-10	
Location: Wilderman Way, Middletown, CT			ENGINEERING & GEOLOGY			
HRP# DEC-0002.GT			DRILLING/SOIL LOG		Sheet No. 1 of 1	
Contractor: New England Boring Contractors						
Type	Casing	Sampler	Core Barrel	Hammer (weight-lb./fall-30")	Start 12/5/03	
O.D. (inch)	HW	SS	NQ2	140/30	Finish	
I.D. (inch)	4"	1 3/8"	2"	Rig Type: B-53 Mobile Drill Rig	Driller Tim Carpenter	
					HRP Rep. John Moss	
Depth (ft.)	Sampler Blows per 6"	Sample Interval	Recovery (ft)	Strata Profile	Remarks (color, structure, grain size, staining, odor)	Field Vane Shear (Ft.-lbs.)
0	1-1-6-7	0'-2'	12"		Red brown silty clay with trace fine gravel	
5	5-8-9-13	5'-7'	21"		Grades to stiff silty clay	
10	5-7-8-11	9'-11'	20"	CL		
15	5-6-8-8	15'-17'	16"			
20	3-4-5-5	20'-22'	8"	CL/ML	Grades with higher silt content	
25	5-7-9-9	25'-27'	No Recovery			
30	10-34-36-32	30'-32'	10"	T I L L	Red brown silty clay with some coarse to fine gravel (hard)	
35		35'-37'			Notes: 1. Boring terminated at 33 feet on probable rock	
40		40'-42'			2. Monitoring well installed to 28 feet.	
45		45'-47'			3. Very moist soil at 9'-11' b.g. Water table between 11'-15' b.g.	
SAMPLE PENETRATION RESISTANCE - 140 lb. wt. falling 30" on 2" O.D. sampler					PROPORTIONS	
Cohesionless Density						
# of Hammer Blows					trace little some and	0 to 10 % 10 to 20 % 20 to 35 % 30 to 50 %
0-4		very loose			Ground Elevation:	
5-9		loose			Reference Elevation:	
10-29		medium dense			Bottom Elevation:	
30-49		dense				
50+		very dense				

Project: Middletown High School Investigation				HRP ASSOCIATES, INC.		Test Boring/Monitor Well ID B-11	
Location: Wilderman Way, Middletown, CT				ENGINEERING & GEOLOGY			
HRP# DEC-0002.GT				DRILLING/SOIL LOG		Sheet No. 1 of 1	
Contractor: New England Boring Contractors							
	Casing	Sampler	Core Barrel	Hammer (weight-lb./fall-30")		Start 12/15/03	
Type	HW	SS	NQ2	140/30		Finish	
O.D. (inch)	-	-	-	Rig Type: B-53 Mobile Drill Rig		Driller Tim Carpenter	
I.D. (inch)	4"	1 3/8"	2"			HRP Rep. John Moss	
Depth (ft.)	Sampler Blows per 6"	Sample Interval	Recovery (ft)	Strata Profile	Remarks (color, structure, grain size, staining, odor)		Field Vane Shear (FL-lbs.)
0	1-3-5-9	0'-2'	14"	CL	Red brown silty clay, trace fine gravel (medium stiff)		
5	4-5-4-5	5'-7'	24'				
10	Shelby Tube	10'-12'					
	15-7-9-9	12'-14'	22"				
15	10-14-29-40	15'-17'	14"		Grades with some coarse to fine gravel		
				T I L L	Rollerbit to 20'		
20	23-12-12-19	20'-22'	6"		Red brown silty clay, some coarse to fine gravel, with weathered siltstone fragments		
					Rollerbit to 24.5' Competent rock at 24.5		
25		25'-27'			Notes:		
					1. Boring terminated at 24.5 feet on probable rock		
					2. Wet soil at 10'-12' b.g. Water table between 7'-10' b.g.		
30		30'-32'					
35		35'-37'					
40		40'-42'					
45		45'-47'					
SAMPLE PENETRATION RESISTANCE - 140 lb. wt. falling 30" on 2" O.D. sampler				PROPORTIONS			
Cohesionless Density							
# of Hammer Blows				trace		0 to 10 %	
0-4		very loose		little		10 to 20 %	
5-9		loose		some		20 to 35 %	
10-29		medium dense		and		30 to 50 %	
30-49		dense		Ground Elevation:			
50+		very dense		Reference Elevation:			
				Bottom Elevation:			

Project: Middletown High School Investigation				HRP ASSOCIATES, INC.		Test Boring/Monitor Well ID B-12	
Location: Wilderman Way, Middletown, CT				ENGINEERING & GEOLOGY			
HRP# DEC-0002.GT				DRILLING/SOIL LOG		Sheet No. 1 of 1	
Contractor: New England Boring Contractors							
Type	Casing HW	Sampler SS	Core Barrel NQ2	Hammer (weight-lb./fall-30") 140/30		Start 12/4/03	
O.D. (inch)	-	-	-	Rig Type: B-53 Mobile Drill Rig		Finish 12/5/03	
I.D. (inch)	4"	1 3/8"	2"			Driller Tim Carpenter HRP Rep. John Moss	
Depth (ft.)	Sampler Blows per 5"	Sample Interval	Recovery (ft)	Strata Profile	Remarks (color, structure, grain size, staining, odor)		Field Vane Shear (Ft.-lbs.)
0	1-3-4-6	0'-2'	15"		Red brown silt and clay with trace fine gravel (medium stiff)		
5	5-7-7-10	5'-7'	20"	CL			
10	4-6-7-9	10'-12'	24"		Grades moist Rollerbit to 15' b.g. Bit chattering at 14.5' b.g.		
15	4-5-5-7	15'-17'	16"	ML/CL	Red-brown silt. little clay, trace fine gravel (medium dense) Rollerbit to 20' b.g.		
20	5-6-6-5	20'-22'	No Recovery		Gravel in bit prevents recovery Rollerbit to 25' b.g. Bit chattering at 24'.		
25	5-6-9-11	25'-27'	No Recovery				
30	5-6-9-11	30'-32'	4"	TILL	Till - Red brown silty clay, and coarse to fine gravel (stiff) Rollerbit through till to 36'		
35		35'-37'			Rock detected by drilling at 37 feet Rock - Red Brown siltstone, moderately fractured		
40	Core 5 min. Run 6 min. No. 1 9 min. 6 min. 7 min.	40'-42'	RQD=41%	ROCK			
45		45'-47'			Notes: 1. Boring terminated at 42.5 feet. 2. Very moist to wet soil at 10'-12' b.g. Water table between 10'-12' b.g.		
SAMPLE PENETRATION RESISTANCE - 140 lb. wt. falling 30" on 2" O.D. sampler					PROPORTIONS		
Cohesionless Density							
# of Hammer Blows					trace little some and	0 to 10 % 10 to 20 % 20 to 35 % 30 to 50 %	
0-4 5-9 10-29 30-49 50+	very loose loose medium dense dense very dense				Ground Elevation: Reference Elevation: Bottom Elevation:		

Project: Middletown High School Investigation				HRP ASSOCIATES, INC.		Test Boring/Monitor Well ID B-13	
Location: Wilderman Way, Middletown, CT				ENGINEERING & GEOLOGY			
HRP# DEC-0002.GT				DRILLING/SOIL LOG		Sheet No. 1 of 1	
Contractor: New England Boring Contractors							
Type	Casing HW	Sampler SS	Core Barrel NQ2	Hammer (weight-lb./fall-30") 140/30		Start 12/13/03 Finish	
O.D. (inch)	-	-	-	Rig Type: B-53 Mobile Drill Rig		Driller John Oullette HRP Rep. John Moss	
I.D. (inch)	4"	1 3/8"	2"				
Depth (ft.)	Sampler Blows per 6"	Sample Interval	Recovery (ft)	Strata Profile	Remarks (color, structure, grain size, staining, odor)		Field Vane Shear (Ft.-lbs.)
0	1-2-3-3	0'-2'			Red brown silty clay, trace roots (medium stiff)		
5	3-3-7-7	5'-7'		CL			
	Shelby Tube	8'-10'			Pushed a Shelby tube from 8 to 10 feet		
10	5-3-10-12	10'-12'			Grades with fine gravel, trace coarse to fine sand (stiff)		
15	5-8-6-8	15'-17'					
20	3-6-15-29	20'-22'					
25	21-14-14-14	24'-26'		T I L L	Till - Red brown silty clay and coarse to fine gravel, with weathered siltstone fragments in the		
					Rock detected by roller bit		
30		30'-32'			Notes: 1. Boring terminated at 26.3 feet on probable rock 2. Monitoring well installed to 15 feet. 3. Wet soil at 5'-7' b.g. Water table near 5' b.g.		
35		35'-37'					
40		40'-42'					
45		45'-47'					
SAMPLE PENETRATION RESISTANCE - 140 lb. wt. falling 30" on 2" O.D. sampler				PROPORTIONS			
Cohesionless Density							
# of Hammer Blows				trace little some and		0 to 10 % 10 to 20 % 20 to 35 % 30 to 50 %	
0-4		very loose					
5-9		loose					
10-29		medium dense					
30-49		dense		Ground Elevation:			
50+		very dense		Reference Elevation:			
				Bottom Elevation:			

Project: Middletown High School Investigation				HRP ASSOCIATES, INC.		Test Boring/Monitor Well ID B-14	
Location: Wilderman Way, Middletown, CT				ENGINEERING & GEOLOGY			
HRP# DEC-0002.GT				DRILLING/SOIL LOG		Sheet No. 1 of 1	
Contractor: New England Boring Contractors							
Casing		Sampler	Core Barrel	Hammer (weight-lb./fall-30")		Start 11/25/03	
Type HW		SS	NQ2	140/30		Finish 12/4/03	
O.D. (inch)				Rig Type: B-53 Mobile Drill Rig		Driller John Oulette/Tim Carpenter	
I.D. (inch)		4"	1 3/8"	2"		HRP Rep. John Moss	
Depth (ft.)	Sampler Blows per 6"	Sample Interval	Recovery (ft)	Strata Profile	Remarks (color, structure, grain size, staining, odor)		Field Vane Shear (FL-lbs.)
0	2-3-5-6	0'-2'	16"		Red brown silt with little clay, trace f-m gravel, trace fine sand (medium dense)		
5	4-4-4-6	5'-7'	24"	ML/CL	Grades to red-brown silty clay with trace fine gravel (medium stiff)		
10	3-4-4-4	10'-12'	12"				
15	3-6-20-20	15'-17'	16"		Drilling suspended on 11/25/03 at 17 feet		
20		20'-22'	2"	weathered rock	Till - Red Brown silty clay, little coarse to fine sand, trace fine gravel (very stiff)		
25	Core 7 min. Run 4 min. No. 1 5 min. 7 min. 5 min. 4 min.	RQD=0%	3'		Boulders encountered during coring		
30	Core 8 min. Run 10 min. No. 2 12 min. 10 min.	RQD=26%	4.5'	ROCK	Red Brown Siltstone, highly fractured		
35	Core 8 min. Run 10 min. No. 3 15 min. 6 min. 6 min.	RQD=58%	5'		moderately fractured		
40		40'-42'			Notes: 1. Boring terminated at 35 feet 2. Wet soil at 10'-12' b.g. Water table between 7'-10' b.g.		
45		45'-47'					
SAMPLE PENETRATION RESISTANCE - 140 lb. wt. falling 30" on 2" O.D. sampler							
Cohesionless Density				PROPORTIONS			
# of Hammer Blows				trace	0 to 10 %		
0-4	very loose			little	10 to 20 %		
5-9	loose			some	20 to 35 %		
10-29	medium dense			and	30 to 50 %		
30-49	dense			Ground Elevation:			
50+	very dense			Reference Elevation:			
				Bottom Elevation:			

Project: Middletown High School Investigation				HRP ASSOCIATES, INC.		Test Boring/Monitor Well ID B-16	
Location: Wilderman Way, Middletown, CT				ENGINEERING & GEOLOGY			
HRP# DEC-0002.GT				DRILLING/SOIL LOG		Sheet No. 1 of 1	
Contractor: New England Boring Contractors							
	Casing	Sampler	Core Barrel	Hammer (weight-lb./fall-30")		Start 11/25/03	
Type	HW	SS	NQ2	140/30		Finish	
O.D. (inch)	-	-	-	Rig Type: B-53 Mobile Drill Rig		Driller John Oullette	
I.D. (inch)	4"	1 3/8"	2"			HRP Rep. John Moss	
Depth (ft.)	Sampler Blows per 6"	Sample Interval	Recovery (ft)	Strata Profile	Remarks (color, structure, grain size, staining, odor)		Field Vane Shear (FL-lbs.)
0	3-2-0-1	0'-2'	0	CL/ML	Red brown silt, trace clay, little coarse to fine , trace fine sand (loose) gravel prevents recovery)		
5	13-18-17-15	5'-7'	12"		Grades to very stiff silty clay, little fine gravel		
10	10-16-24-26	10'-12'	14"		Grades with Increased silt content		
15	22-20-24-30	15'-17'	14"		Driller indicates greater resistance in auger at 13.5' b.g.		
20	15-24-33-27	20'-22'	22"		red-brown silt, trace clay, trace fine gravel		
25		25'-27'		ML	Notes: 1. Boring terminated at 22 feet. 2. Very moist to wet soil at 15'-17' b.g. Water table at 16.5' b.g.		
30		30'-32'					
35		35'-37'					
40		40'-42'					
45		45'-47'					
SAMPLE PENETRATION RESISTANCE - 140 lb. wt. falling 30" on 2" O.D. sampler							
Cohesionless Density				PROPORTIONS			
# of Hammer Blows					trace	0 to 10 %	
0-4	very loose				little	10 to 20 %	
5-9	loose				some	20 to 35 %	
10-29	medium dense				and	30 to 50 %	
30-49	dense				Ground Elevation:		
50+	very dense				Reference Elevation:		
					Bottom Elevation:		

Project: Middletown High School Investigation				HRP ASSOCIATES, INC.		Test Boring/Monitor Well ID B-17 / PZ-3	
Location: Wilderman Way, Middletown, CT				ENGINEERING & GEOLOGY			
HRP# DEC-0002.GT				DRILLING/SOIL LOG		Sheet No. 1 of 1	
Contractor: Glacier Drilling							
	Casing	Sampler	Core Barrel	Hammer (weight-lb./fall-30")		Start 3/25/04	
Type	HW	SS	-	140/30		Finish 3/25/04	
O.D. (inch)	2.25"	-	-	Rig Type: CME 850 Track Mount		Driller Terry / Jason	
I.D. (inch)	-	-	-			HRP Rep. Dean Heldenis	
Depth (ft.)	Sampler Blows per 6"	Sample Interval	Recovery (ft)	Strata Profile	Remarks (color, structure, grain size, staining, odor)		Field Vane Shear (FL-lbs.)
0-2	2-4-4-4	0'-2'	0.8'	Soft-Wet	Red brown silt, little clay, trace gravel, trace fine sand		
5-7	3-6-6-7	5'-7'	1.4'	Wet / Med Stiff	Red brown silty clay, trace organics		
10-12	2-6-6-5	10'-12'	1.4'	Wet / Med Stiff	Red brown silty clay		
15		15'-17'	14"		Augered to 12' b.g. Set PZ-3 (1" well) 10' screen 2' riser 11' sand 0.5' bentonite		
20		20'-22'	22"		1' sand Aluminum roadbox provided by HRP		
25		25'-27'			Notes: 1. Boring terminated at 12 feet. 2. Due to seasonal changes and frost melt, soil was very moist to wet throughout boring		
30		30'-32'					
35		35'-37'					
40		40'-42'					
45		45'-47'					
SAMPLE PENETRATION RESISTANCE - 140 lb. wt. falling 30" on 2" O.D. sampler					PROPORTIONS		
Cohesionless Density							
# of Hammer Blows					trace	0 to 10 %	
0-4	very loose				little	10 to 20 %	
5-9	loose				some	20 to 35 %	
10-29	medium dense				and	30 to 50 %	
30-49	dense				Ground Elevation:		
50+	very dense				Reference Elevation:		
					Bottom Elevation:		

Project: Middletown High School Investigation				HRP ASSOCIATES, INC.		Test Boring/Monitor Well ID B-18 / PZ-2	
Location: Wilderman Way, Middletown, CT				ENGINEERING & GEOLOGY			
HRP# DEC-0002.GT				DRILLING/SOIL LOG		Sheet No. 1 of 1	
Contractor: Glacier Drilling							
	Casing	Sampler	Core Barrel	Hammer (weight-lb./fall-30")		Start 3/25/04	
Type	HW	SS	-	140/30		Finish 3/25/04	
O.D. (inch)	2.25"	-	-	Rig Type: CME 850 Track Mount		Driller Terry / Jason	
I.D. (inch)	-	-	-			HRP Rep. Dean Heidenis	
Depth (ft.)	Sampler Blows per 6"	Sample Interval	Recovery (ft)	Strata Profile	Remarks (color, structure, grain size, staining, odor)		Field Vane Shear (Ft.-lbs.)
0-2	2-2-4-5	0'-2'	1.0'	Soft/Med stiff, moist	Red brown silty clay, little organics		
5-7	2-8-10-8	5'-7'	1.8'	Very stiff Moist-very moist	Red brown silty clay, trace fine sand		
10-12	2-4-5-7	10'-12'	1.3'	stiff / very moist	Red brown silty clay, trace organics		
15		15'-17'	14"		Augered to 15' b.g. Set PZ-2 (1" well) 10' screen 5' riser 12' sand 2' bentonite		
20		20'-22'	22"		0.5' sand Aluminum roadbox provided by HRP		
25		25'-27'			Notes: 1. Boring terminated at 15 feet. 2. Soil was very moist between 6-7' b.g.		
30		30'-32'					
35		35'-37'					
40		40'-42'					
45		45'-47'					
SAMPLE PENETRATION RESISTANCE - 140 lb. wt. falling 30" on 2" O.D. sampler						PROPORTIONS	
Cohesionless Density							
# of Hammer Blows					trace		0 to 10 %
0-4		very loose			little		10 to 20 %
5-9		loose			some		20 to 35 %
10-29		medium dense			and		30 to 50 %
30-49		dense			Ground Elevation:		
50+		very dense			Reference Elevation:		
					Bottom Elevation:		

Project: Middletown High School Investigation				HRP ASSOCIATES, INC.		Test Boring/Monitor Well ID B-19 / PZ-1	
Location: Wilderman Way, Middletown, CT				ENGINEERING & GEOLOGY			
HRP# DEC-0002.GT				DRILLING/SOIL LOG		Sheet No. 1 of 1	
Contractor: Glacier Drilling							
	Casing	Sampler	Core Barrel	Hammer (weight-lb./fall-30")	Start 3/25/04		
Type	HW	SS	-	140/30	Finish 3/25/04		
O.D. (inch)	2.25"	-	-	Rig Type: CME 850 Track Mount	Driller Terry / Jason		
I.D. (inch)	-	-	-		HRP Rep. Dean Heidenis		
Depth (ft.)	Sampler Blows per 6"	Sample Interval	Recovery (ft)	Strata Profile	Remarks (color, structure, grain size, staining, odor)		Field Vane Shear (FL-lbs.)
0-2	4-5-6-7	0'-2'	1.0'	med stiff, moist	Red brown silty clay, little organics in upper 0.5' to 1.0'		
5-7	5-4-4-5	5'-7'	1.5'	med stiff, med dense, moist-v. moist	Red brown silty clay, trace organics		
10-12	3-4-4-8	10'-12'	1.0'	med stiff wet	Red brown silty clay		
15		15'-17'	14"		Augered to 15' b.g. Set PZ-1 (1" well) 10' screen 5' riser 12' sand 2' bentonite 0.5' sand Aluminum roadbox provided by HRP		
20		20'-22'	22"				
25		25'-27'			Notes: 1. Boring terminated at 12 feet. 2. Soil was very moist between 6-7' b.g. Depth to water = 8.8' approx. 1 hour after installat		
30		30'-32'					
35		35'-37'					
40		40'-42'					
45		45'-47'					
SAMPLE PENETRATION RESISTANCE - 140 lb. wt. falling 30" on 2" O.D. sampler					PROPORTIONS		
Cohesionless Density							
# of Hammer Blows					trace	0 to 10 %	
0-4	very loose				little	10 to 20 %	
5-9	loose				some	20 to 35 %	
10-29	medium dense				and	30 to 50 %	
30-49	dense						
50+	very dense						
					Ground Elevation:		
					Reference Elevation:		
					Bottom Elevation:		

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Project Middletown High School				HRP ASSOCIATES, INC.		Test Boring/Monitor Well ID B-19																																																							
Location Middletown, CT				ENGINEERING & GEOLOGY																																																									
HRP# DEC0004.GT				DRILLING/SOIL LOG		Sheet No. 1																																																							
Contractor New England Boring																																																													
Type	Casing HW	Sampler SS	Core Barrel NQ2	Hammer (weight-lb./fall-30") 140/30		Start 6/7/04 Finish 6/7/04																																																							
O.D. (inch)				Rig Type B-53 Mobile		Driller Tim/Steve HRP Rep. DFH																																																							
I.D. (inch)	4"	1 3/8"	2"																																																										
Depth (ft.)	Sampler Blows per 6"	Sample Interval	Recovery (ft)	Density or Consistency/Molsture	Profile Change	Remarks (color, structure, grain size, staining, odor)	PID (ppm)																																																						
0	3, 8, 13, 24	0-2' S-1	19"	Dry, Stiff	2	3" Top Soil Red brown silty clay, trace fine sand, cobble at tip																																																							
5	15, 17, 26, 33	5'-7' S-2	24"	Slight Moist Stiff	5	Red brown very fine silt, some clay, trace fine sand, trace medium-coarse gravel																																																							
		10'-12' no sample	0"	Dense-Dry	8-10	Rock indicated by driller at 8'																																																							
	Core 3 min. Run 3 min. No. 1 3 min. Core 2 min. Run 5 min.		60"	Dense	rock	Split spoon bouncing on rock, no presentation Red siltstone/sandstone and shale-moderately fractured																																																							
						Boring terminated at 15', soil slightly moist 5-7' Rock recovery put into core box																																																							
<table border="1"> <tr> <td colspan="4">SAMPLE PENETRATION RESISTANCE - 140 lb. wt. falling 30" on 2" O.D. sampler</td> <td colspan="2">PROPORTIONS</td> </tr> <tr> <td colspan="2">Cohesionless Density</td> <td colspan="2">Cohesive Consistence</td> <td colspan="2"></td> </tr> <tr> <td># of Hammer Blows</td> <td></td> <td># of Hammer Blows</td> <td></td> <td>trace</td> <td>0 to 10 %</td> </tr> <tr> <td>0-4</td> <td>very loose</td> <td>0-2</td> <td>very soft</td> <td>little</td> <td>10 to 20 %</td> </tr> <tr> <td>5-9</td> <td>loose</td> <td>3-4</td> <td>soft</td> <td>some</td> <td>20 to 35 %</td> </tr> <tr> <td>10-29</td> <td>medium dense</td> <td>5-8</td> <td>medium stiff</td> <td>and</td> <td>30 to 50 %</td> </tr> <tr> <td>30-49</td> <td>dense</td> <td>9-15</td> <td>stiff</td> <td colspan="2">Ground Elevation:</td> </tr> <tr> <td>50+</td> <td>very dense</td> <td>16-30</td> <td>very stiff</td> <td colspan="2">Reference Elevation:</td> </tr> <tr> <td></td> <td></td> <td>31+</td> <td>hard</td> <td colspan="2">Bottom Elevation:</td> </tr> </table>								SAMPLE PENETRATION RESISTANCE - 140 lb. wt. falling 30" on 2" O.D. sampler				PROPORTIONS		Cohesionless Density		Cohesive Consistence				# of Hammer Blows		# of Hammer Blows		trace	0 to 10 %	0-4	very loose	0-2	very soft	little	10 to 20 %	5-9	loose	3-4	soft	some	20 to 35 %	10-29	medium dense	5-8	medium stiff	and	30 to 50 %	30-49	dense	9-15	stiff	Ground Elevation:		50+	very dense	16-30	very stiff	Reference Elevation:				31+	hard	Bottom Elevation:	
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Project Middletown High School				HRP ASSOCIATES, INC.		Test Boring/Monitor Well ID B-20																																																							
Location Middletown, CT				ENGINEERING & GEOLOGY																																																									
HRP# DEC0004.GT				DRILLING/SOIL LOG		Sheet No. 1																																																							
Contractor New England Boring																																																													
Type	Casing HW	Sampler SS	Core Barrel NQ2	Hammer (weight-lb./fall-30") 140/30		Start 6/9/04 Finish 6/9/04																																																							
O.D. (inch)				Rig Type B-53 Mobile		Driller Trent/Mike																																																							
I.D. (inch)	4"	1 3/8"	2"			HRP Rep. DFH																																																							
Depth (ft.)	Sampler Blows per 6"	Sample Interval	Recovery (ft)	Density or Consistency/Moisture	Profile Change	Remarks (color, structure, grain size, staining, odor)	PID (ppm)																																																						
0	3, 7, 9, 12	0-2	14"	SM/Med Dense	2	Topsoil 3"																																																							
						Brown fine silt, some coarse gravel, little fine-medium sand																																																							
					3-5	Organic brown silty clay, some fine sand																																																							
5	5, 7, 7, 9	5-7 S-2	19"	Moist/Very Moist Stiff	7	Red brown very fine silty clay, trace-fine sand																																																							
10	5, 11, 13, 22	10-12 S-3	15"	Wet Stiff Wet at ~10'	10.5	Red brown very fine silty clay, trace fine sand																																																							
					12	Red brown fine silt, some medium-coarse gravel																																																							
					till	Little fine-medium sand																																																							
					till	Auger to 13' hit rock																																																							
						Northeast Boring set casing to begin coring rock																																																							
	Core 1 min. Run 1 min. No. 1 2 min. Core 3 min. Run 3 min.	13-18	28"	Dense	rock	Redlar silt/sandstone highly fractured																																																							
						B.O.B. 18'																																																							
						Rock recovery into core box																																																							
<table border="1"> <tr> <td colspan="4">SAMPLE PENETRATION RESISTANCE - 140 lb. wt. falling 30" on 2" O.D. sampler</td> <td colspan="2">PROPORTIONS</td> </tr> <tr> <td colspan="2">Cohesionless Density</td> <td colspan="2">Cohesive Consistence</td> <td colspan="2"></td> </tr> <tr> <td># of Hammer Blows</td> <td></td> <td># of Hammer Blows</td> <td></td> <td>trace</td> <td>0 to 10 %</td> </tr> <tr> <td>0-4</td> <td>very loose</td> <td>0-2</td> <td>very soft</td> <td>little</td> <td>10 to 20 %</td> </tr> <tr> <td>5-9</td> <td>loose</td> <td>3-4</td> <td>soft</td> <td>some</td> <td>20 to 35 %</td> </tr> <tr> <td>10-29</td> <td>medium dense</td> <td>5-8</td> <td>medium stiff</td> <td>and</td> <td>30 to 50 %</td> </tr> <tr> <td>30-49</td> <td>dense</td> <td>9-15</td> <td>stiff</td> <td colspan="2">Ground Elevation:</td> </tr> <tr> <td>50+</td> <td>very dense</td> <td>16-30</td> <td>very stiff</td> <td colspan="2">Reference Elevation:</td> </tr> <tr> <td></td> <td></td> <td>31+</td> <td>hard</td> <td colspan="2">Bottom Elevation:</td> </tr> </table>								SAMPLE PENETRATION RESISTANCE - 140 lb. wt. falling 30" on 2" O.D. sampler				PROPORTIONS		Cohesionless Density		Cohesive Consistence				# of Hammer Blows		# of Hammer Blows		trace	0 to 10 %	0-4	very loose	0-2	very soft	little	10 to 20 %	5-9	loose	3-4	soft	some	20 to 35 %	10-29	medium dense	5-8	medium stiff	and	30 to 50 %	30-49	dense	9-15	stiff	Ground Elevation:		50+	very dense	16-30	very stiff	Reference Elevation:				31+	hard	Bottom Elevation:	
SAMPLE PENETRATION RESISTANCE - 140 lb. wt. falling 30" on 2" O.D. sampler				PROPORTIONS																																																									
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		31+	hard	Bottom Elevation:																																																									

Project Middletown High School				HRP ASSOCIATES, INC.		Test Boring/Monitor Well ID B-21MW	
Location Middletown, CT				ENGINEERING & GEOLOGY			
HRP# DEC0004.GT				DRILLING/SOIL LOG		Sheet No. 1	
Contractor New England Boring							
Type	Casing	Sampler	Core Barrel	Hammer (weight-lb./fall-30")		Start 6/8/04	
	HW	SS	NQ2	140/30		Finish 6/8/04	
O.D. (inch)				Rig Type B-58 Mobile		Driller Steve/Mike St. John	
I.D. (inch)	4"	1 3/8"	2"			HRP Rep. DFH	
Depth (ft.)	Sampler Blows per 6"	Sample Interval	Recovery (ft)	Density or Consistency/Moisture	Profile Change	Remarks (color, structure, grain size, staining, odor)	PID (ppm)
0	1, 3, 6, 35	0-2'	16"	Sm/Medium Stiff	2"	3" topsoil	
		S-1				Redd brown very fine silt, little organic cobble at tip	
5	9, 10, 11, 13	5-7'	24"	SM/Dense	7"	Red brown very fine silt, little medium-coarse gravel, trace medium sand	
		S-2				Auger hitting cobbles at 8-10'	
10	10, 17, 19, 17	10-12'	22"	Moist/Wet	12	Red brown very fine silt, some medium-coarse gravel, trace fine sand	
		S-3		Wet at ~11-12'			
15	6, 9, 8, 10	15-17'	12"	Wet/Very Dense	17"	New England Boring set 4" casing, wash out with circulating pump and roller bit	
		S-4				Red brown fine silty clay, some fine-coarse gravel, little trace coarse sand	
20	7, 18, 36, 41	20-22'	20"	Wet/Dense	21"	Brown silty clay, some fine-coarse gravel, little fine-coarse sand	
		S-5			22"	Brown fine-coarse gravel, some fine-coarse sand, some silt	
25	90 for 3"	25-25.5'	3"	Wet Dense	25.3"	Brown fine silt and siltstone, some medium-coarse gravel	
		S-6				Roller bit to rock at 26'	
						B.O.B. at 26'	
						Set well 2 PVC B-21MW	
						10' screen	
						16' screen	
						sand - 14'	
						Bentonite - 12'	
						Sand to surface	
						Handway cap and lock	
SAMPLE PENETRATION RESISTANCE - 140 lb. wt. falling 30" on 2" O.D. sampler							
Cohesionless Density			Cohesive Consistence		PROPORTIONS		
# of Hammer Blows			# of Hammer Blows				
0-4	very loose		0-2	very soft	trace	0 to 10 %	
5-9	loose		3-4	soft	little	10 to 20 %	
10-29	medium dense		5-8	medium stiff	some	20 to 35 %	
30-49	dense		9-15	stiff	and	30 to 50 %	
50+	very dense		16-30	very stiff	Ground Elevation:		
			31+	hard	Reference Elevation:		
					Bottom Elevation:		

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Project Middletown High School				HRP ASSOCIATES, INC.		Test Boring/Monitor Well ID B-23	
Location Middletown, CT				ENGINEERING & GEOLOGY			
HRP# DEC0004.GT				DRILLING/SOIL LOG		Sheet No. 1	
Contractor New England Boring							
	Casing	Sampler	Core Barrel	Hammer (weight-lb./fall-30")		Start 6/16/04	
Type	HW	SS		140/30		Finish 6/17/04	
O.D. (inch)				Rig Type B-53 Mobile		Driller Tim	
I.D. (inch)	4"	1 3/8"				HRP Rep. DJA	
Depth (ft.)	Sampler Blows per 6"	Sample Interval	Recovery (ft)	Density or Consistency/Moisture	Profile Change	Remarks (color, structure, grain size, staining, odor)	PID (ppm)
	2, 4, 5, 5	0-2.0	1'	Loose/Dry	0.5'	Topsoil	
						Red brown fine-medium sand, little silt, trace fine-coarse gravel	
	2, 2, 2, 2	5.0-7.0'	1.5'	Loose Dry/Moist	6.0'	Red brown silt, trace fine sand, clay	
	3, 3, 4, 4	10.0-12.0'	1.2'	Loose Moist/Very Moist	6.2'	Red brown fine-coarse sand	
						Red brown silt, little clay	
	3, 3, 5, 7	15.0-17.0'	1.6'	Loose/Wet		Red brown silt, some clay, trace fine gravel	
						Red brown silt and clay	
	2, 3, 4, 4	20.0-22.0'	1.7'	Loose/Wet	21.0'	Red brown silt and clay	
						Red brown silt, little fine gravel, coarse sand, trace clay	
						Change on roller cone	
						24.0' to rock roller	
						Cone to 26.0'	
						No change	
						B.O.B.	
						26.0' place 1 bag bentonite	
SAMPLE PENETRATION RESISTANCE - 140 lb. wt. falling 30" on 2" O.D. sampler							
Cohesionless Density			Cohesive Consistence		PROPORTIONS		
# of Hammer Blows			# of Hammer Blows			trace	0 to 10 %
0-4	very loose		0-2	very soft		little	10 to 20 %
5-9	loose		3-4	soft		some	20 to 35 %
10-29	medium dense		5-8	medium stiff		and	30 to 50 %
30-49	dense		9-15	stiff		Ground Elevation:	
50+	very dense		16-30	very stiff		Reference Elevation:	
			31+	hard		Bottom Elevation:	

Project Middletown High School				HRP ASSOCIATES, INC.		Test Boring/Monitor Well ID B-24	
Location Middletown, CT				ENGINEERING & GEOLOGY			
HRP# DEC0004.GT				DRILLING/SOIL LOG		Sheet No. 1	
Contractor New England Boring				Hammer (weight-lb./fall-30")		Start 6/7/04	
Type	Casing	Sampler	Core Barrel	140/30		Finish 6/7/04	
O.D. (inch)	HW	SS	NQ2	Rig Type B-53 Mobile		Driller Tim/Steve	
I.D. (inch)	4"	1 3/8"	2'			HRP Rep. DFH	
Depth (ft.)	Sampler Blows per 6"	Sample Interval	Recovery (ft)	Density or Consistency/Moisture	Profile Change	Remarks (color, structure, grain size, staining, odor)	PID (ppm)
0	1, 1, 2, 4	0-2'	16"	SM/Med Dense	2	4" Topsoil	
		S-1				Red brown very fine silt, some organic material, T-C sand	
5	15, 18, 26, 18	5'-7'	22"	Moist/Dense	7	Red brown fine silt, medium-coarse sand, some coarse gravel, trace clay	
		S-2					
10	18, 16, 12, 13	10'-12'	23"	SM/Dense/Stiff	12	Red brown very fine silt, some medium-coarse gravel, little clay	
		S-3					
15	3, 108	15'-16'	13"	Wet/Dense	1	New England start drive casing and wash out with circulating pump and roller bit	
					16	Red brown silty clay, trace gravel	
					weathered rock	Fractured rock at tip, siltstone	
	Core 3 min.	17-22	24"	Dense	Rock	Rollerbit to 17'	
	Run 2 min.					Hit rock, set up core bit	
	No 1 2 min.					Red brown siltstone/sandstone, highly fractured	
	Core 1 min.						
	Run 2 min.						
						B.Bo.B. 22'	
						Rock recovery put into core box	
SAMPLE PENETRATION RESISTANCE - 140 lb. wt. falling 30" on 2" O.D. sampler						PROPORTIONS	
Cohesionless Density			Cohesive Consistence				
# of Hammer Blows			# of Hammer Blows			trace	0 to 10 %
0-4	very loose		0-2	very soft		little	10 to 20 %
5-9	loose		3-4	soft		some	20 to 35 %
10-29	medium dense		5-8	medium stiff		and	30 to 50 %
30-49	dense		9-15	stiff		Ground Elevation:	
50+	very dense		16-30	very stiff		Reference Elevation:	
			31+	hard		Bottom Elevation:	

k:\mst5\drift log.xls

k:\mts\drill log.xls

Project Middletown High School				HRP ASSOCIATES, INC.		Test Boring/Monitor Well ID B-27	
Location Middletown, CT				ENGINEERING & GEOLOGY			
HRP# DEC0004.GT				DRILLING/SOIL LOG		Sheet No. 1	
Contractor New England Boring							
	Casing	Sampler	Core Barrel	Hammer (weight-lb./fall-30")		Start 6/17/04	
Type	HW	SS		140/30		Finish 6/17/04	
O.D. (inch)				Rig Type B-53 Mobile		Driller Tim	
I.D. (inch)	4"	1 3/8"	2"			HRP Rep. DJA	
Depth (ft.)	Sampler Blows per 6"	Sample Interval	Recovery (ft)	Density or Consistency/Moisture	Profile Change	Remarks (color, structure, grain size, staining, odor)	PID (ppm)
	3, 5, 10, 9	0-2.0'	1.2'	Medium Dense/Dry	0.5'	Topsoil	
						Red brown, fine-medium sand, little fine-coarse gravel, trace silt	
	6, 6, 7, 15	5.0-7.0'	1.7'	Medium Dense/Wet	6.5'	Red brown silt, trace clay, very-fine sand	
						Red brown silt, trace fine gravel, very-fine sand	
	12, 8, 11, 13	10.0-12.0'	1.7'	Dense/Wet	10.5'	Red brow silt, some very fine-fine sand, trace fine gravel, medium sand	
	4, 9, 17, 33	15.0-17.0'	1.6'	Dense/Wet		Red brown silt, trace fine gravel	
						Red brown silt, some very fine sand, trace fine-medium gravel	
	23, 26, 26, 42	20.0-22.0'	1.6'	Very Dense/Wet	20.5'	Red brown silt, little very fine sand, trace fine-medium gravel	
						Red brown silt and fractured siltstone, little fine-medium sand	
						B.O.B. 22.0'	
						*Hollow stem auger to 10' then 3"FWC to 12.0' roller cone hole	
SAMPLE PENETRATION RESISTANCE - 140 lb. wt. falling 30" on 2" O.D. sampler							
Cohesionless Density			Cohesive Consistence		PROPORTIONS		
# of Hammer Blows			# of Hammer Blows		trace	0 to 10 %	
0-4	very loose		0-2	very soft	little	10 to 20 %	
5-9	loose		3-4	soft	some	20 to 35 %	
10-29	medium dense		5-8	medium stiff	and	30 to 50 %	
30-49	dense		9-15	stiff	Ground Elevation:		
50+	very dense		16-30	very stiff	Reference Elevation:		
			31+	hard	Bottom Elevation:		

Project Middletown High School				HRP ASSOCIATES, INC.		Test Boring/Monitor Well ID B-28	
Location Middletown, CT				ENGINEERING & GEOLOGY			
HRP# DEC0004.GT				DRILLING/SOIL LOG		Sheet No. 1 Offset 20.0'	
Contractor New England Boring							
	Casing	Sampler	Core Barrel	Hammer (weight-lb./fall-30")		Start 6/17/04	
Type	HW	SS		140/30		Finish 6/17/04	
O.D. (inch)				Rig Type B-53 Mobile		Driller Tim	
I.D. (inch)	4"	1 3/8"	2"			HRP Rep. DJA	
Depth (ft.)	Sampler Blows per 6"	Sample Interval	Recovery (ft)	Density or Consistency/Moisture	Profile Change	Remarks (color, structure, grain size, staining, odor)	PID (ppm)
	2, 3, 5, 10	0.0-2.0'	1.4'	Loose/Dry	0.5'	Topsoil	
						Red brown silt, some very fine-fine sand, little fine gravel	
	11, 26, 12, 12	5.0-7.0'	1.8'	Very Dense		Red brown silt, little very-fine sand, trace fine gravel	
				Moist to Wet at Spoon tip	5.8'	Red brown fine-medium sand, some coarse sand, little fine-medium gravel	
	21, 23, 22, 16	10.0-12.0'	1.5'	Very Dense/Wet		Red brown fine-medium sand, some coarse sand, little fine-medium gravel, trace silt	
					11.7'	Red brown silt, trace fine gravel, very-fine sand	
		R-1				Roller cone rock 14-15.0'	
		15.0-16.0'	4.0 minutes			Core rock 15.0'	
		16.0-17.0'	2.0 minutes				
		17.0-18.0'	4.0 minutes				
		18.0-19.0'	4.0 minutes			Recovered 0.3' of siltstone and pieces, cored through cobble	
		19.0-20.0'	5.0 minutes				
	24, 34, 40, 65	20.0-22.0'	1.2'	Very Dense/Wet		Red brown very fine-fine sand and silt, some fine gravel, fractured siltstone, trace medium sand (till)	
	18, 28, 23, 31	25.0-27.0'	1.7'	Very Dense/Wet		Same	
	19, 26, 35, 54	30.0-32.0'	0.1'	Very Dense/Wet		Red brown very fine-fine sand and silt, some fine gravel, fractured siltstone	
	100/2	35.0-37.0'	0.1'	Very Dense		Fractured siltstone	
						Rollercone thru rock	
						35.0-38.5' - red siltstone	
						B.O.B. 38.5'	
						Backfill with one bag bentonite	
		</					

TEST PIT LOG

HRP Associates, Inc.

167 PROPOSED BRITAIN AVENUE
PLAINVILLE, CONNECTICUT 06062

Project/Client:

Location: Proposed Middletown High School

Job No.: DEC0002.GT, T02

Date: 11/24/03

Photos Taken: #1

Excavator Type: John Deere 310C

Contractor: B&M Excavating

Ground Water Level (if observed): see below

No. Samples Taken: 2

PID: ---

Sample Storage: ---

Geologist/Technician: JMC

TEST PIT LOCATION SKETCH MAP

See Figure

Test Pit Location Description:

Proposed Paved Parking

Remarks
(color, structure, grain
size, staining, odor, PID)

Moisture

Sample
TypeSample
Location
Within
Test PitDepth
From
Surface
(feet)
From ToSample
Number

Brown silt and sand, vegetation (topsoil)

Brown silt, some clay, trace vf-m sand (fill)

Gray clay

Brown clay

Perched ground water @ 2', 5', 9' b.g.

END OF TEST PIT @ 9.0' b.g. (below grade)

Backfilled to grade and covered with hay.

MOISTURE

D = Dry
VM = Very MoistSM = Slightly Moist
W = Wet (saturated)

PROPORTIONS USED

0 - 10% Trace
10 - 20% Little20 - 35% Some
35 - 50% And

SAMPLE TYPE

Bucket = Excavator Bucket
G = Grab
HA = Hand AugerComp = Composite Sample
GW = Ground Water

TEST PIT LOG

*HRP Associates, Inc.*167 PROPOSED BRITAIN AVENUE
PLAINVILLE, CONNECTICUT 06062

Project/Client:

Location: Proposed Middletown High School

Job No.: DEC0002.GT, T02

Date: 11/25/03

Photos Taken: ---

Excavator Type: John Deere 310C

Contractor: B&M Excavating

Ground Water Level (if observed): 6'

No. Samples Taken: ---

PID: ---

Sample Storage: ---

Geologist/Technician: JMC

TEST PIT LOCATION SKETCH MAP

See Figure

Test Pit Location Description:

Proposed Paved Bus Loop

Remarks
(color, structure, grain
size, staining, odor, PID)

Moisture

Sample
TypeSample
Location
Within
Test PitDepth
From
Surface
(feet)

From

To

Brown silt and m-vf sand, trace clay, trace vegetation (topsoil)

Brown silt and clay, some m-f sand (fill)

Brown clay

Perched ground water @ 6' b.g.

END OF TEST PIT @ 7.5' b.g.

Backfilled to grade and covered with hay.

SAMPLE TYPE

Bucket = Excavator Bucket
G = Grab
HA = Hand AugerComp = Composite Sample
GW = Ground Water

MOISTURE

D = Dry
VM = Very MoistSM = Slightly Moist
W = Wet (saturated)

PROPORTIONS USED

0 - 10% Trace
10 - 20% Little20 - 35% Some
35 - 50% And

TEST PIT LOG					Project/Client:		TEST PIT LOCATION SKETCH MAP	
HRP Associates, Inc. 167 PROPOSED BRITAIN AVENUE PLAINVILLE, CONNECTICUT 06062					Location: Proposed Middletown High School Job No.: DEC0002.GT, T02 Date: 11/24/03 Photos Taken: #2, #3 Excavator Type: John Deere 310C Contractor: B&M Excavating Ground Water Level (if observed): see below No. Samples Taken: 2 PID: --- Sample Storage: --- Geologist/Technician: JMC		See Figure Test Pit Location Description: Proposed wetland Mitigation Area	
Sample Number	Depth From Surface (feet)		Sample Location Within Test Pit	Sample Type	Moisture	Remarks (color, structure, grain size, staining, odor, PID)		
	From	To						
	0	0.3			SM	Brown silt and sand, vegetation (topsoil)		
TP-3 Fill	0.3	2.0		Bucket	SM	Brown silt, some clay, trace m-vf sand (fill)		
TP-3 Br. Clay	2.0	8.5		Bucket	SM	Brown clay		
						END OF TEST PIT @ 8.5' b.g.		
						No infiltrating ground water observed.		
						-0.3' process stone placed in pit bottom. Installed 10' section of Schedule 40 PVC (4" D) with screw cap.		
						Backfilled to grade and covered with hay.		
SAMPLE TYPE Bucket = Excavator Bucket G = Grab HA = Hand Auger Comp = Composite Sample GW = Ground Water							MOISTURE D = Dry VM = Very Moist SM = Slightly Moist W = Wet (saturated)	
							PROPORTIONS USED 0 - 10% Trace 10 - 20% Little 20 - 35% Some 35 - 50% And	

TEST PIT LOG

*HRP Associates, Inc.*167 PROPOSED BRITAIN AVENUE
PLAINVILLE, CONNECTICUT 06062

Project/Client:

Location: Proposed Middletown High School

Job No.: DEC0002.GT, T02

Date: 11/24/03

Photos Taken: #4, #5

Excavator Type: John Deere 310C

Contractor: B&M Excavating

Ground Water Level (if observed): see below

No. Samples Taken: 2

PID: ---

Sample Storage: ---

Geologist/Technician: JMC

TEST PIT LOCATION SKETCH MAP

See Figure

Test Pit Location Description:

Proposed Proposed High School

Remarks
(color, structure, grain
size, staining, odor, PID)

Moisture

Sample
TypeSample
Location
Within
Test PitDepth
From
Surface
(feet)
From ToSample
Number

Brown silt and m-vf sand, vegetation (topsoil)

Brown silt, some clay, trace m-vf sand (fill)

Brown clay

END OF TEST PIT @ 8.75' b.g.

No ground water observed.

Backfilled to grade and covered with hay.

MOISTURE

D = Dry
VM = Very MoistSM = Slightly Moist
W = Wet (saturated)

PROPORTIONS USED

0 - 10% Trace
10 - 20% Little20 - 35% Some
35 - 50% And

SAMPLE TYPE

Bucket = Excavator Bucket
G = Grab
HA = Hand AugerComp = Composite Sample
GW = Ground Water

TEST PIT LOG

HRP Associates, Inc.

167 PROPOSED BRITAIN AVENUE
PLAINVILLE, CONNECTICUT 06062

Project/Client:

Location: Proposed Middletown High School

Job No.: DEC0002.GT, T02

Date: 11/24/03

Photos Taken: #6, #7

Excavator Type: John Deere 310C

Contractor: B&M Excavating

Ground Water Level (if observed): 1.7'

No. Samples Taken: ---

PID: ---

Sample Storage: ---

Geologist/Technician: JMC

TEST PIT LOCATION SKETCH MAP

See Figure

Test Pit Location Description:

Proposed Paved Parking

Remarks
(color, structure, grain
size, staining, odor, PID)

Moisture

Sample
TypeSample
Location
Within
Test PitDepth
From
Surface
(feet)

From

To

Brown silt and m-vf sand, vegetation (topsoil)

SM

Brown silt, trace clay, little m-vf sand (fill)

SM

Brown clay

SM

END OF TEST PIT @ 7.8' b.g.

Ground water observed at -1.7'.

Backfilled to grade and covered with hay.

SAMPLE TYPE

Bucket = Excavator Bucket
G = Grab
HA = Hand Auger

Comp = Composite Sample
GW = Ground Water

MOISTURE

D = Dry
VM = Very Moist

SM = Slightly Moist
W = Wet (saturated)

PROPORTIONS USED

0 -- 10% Trace
10 -- 20% Little
20 -- 35% Some
35 -- 50% And

TEST PIT LOG

*HRP Associates, Inc.*167 PROPOSED BRITAIN AVENUE
PLAINVILLE, CONNECTICUT 06062

TEST PIT LOCATION SKETCH MAP					
Project/Client: Location: Proposed Middletown High School Job No.: DEC0002.GT, T02 Date: 11/25/03 Photos Taken: #11 Excavator Type: John Deere 310C Contractor: B&M Excavating Ground Water Level (if observed): --- No. Samples Taken: --- PID: --- Sample Storage: --- Geologist/Technician: JMC					
Test Pit Location Description: Near Proposed High School					
Sample Number	Depth From Surface (feet)	Sample Location Within Test Pit	Sample Type	Moisture	Remarks (color, structure, grain size, staining, odor, PID)
	From	To			
	0	0.3		SM	Topsoil
	0.3	2.1		SM	Brown silt and clay, little m-vf sand
	2.1	7.0		SM	Brown clay
					END OF TEST PIT @ 7.0' b.g.
					No ground water observed.
					Backfilled to grade and covered with hay.
SAMPLE TYPE Bucket = Excavator Bucket G = Grab HA = Hand Auger Comp = Composite Sample GW = Ground Water				MOISTURE D = Dry VM = Very Moist SM = Slightly Moist W = Wet (saturated)	
				PROPORTIONS USED 0 - 10% Trace 10 - 20% Little 20 - 35% Some 35 - 50% And	

TEST PIT LOG

*HRP Associates, Inc.*167 PROPOSED BRITAIN AVENUE
PLAINVILLE, CONNECTICUT 06062

Project/Client:

Location: Proposed Middletown High School

Job No.: DEC0002.GT, T02

Date: 11/24/03

Photos Taken: #8

Excavator Type: John Deere 310C

Contractor: B&M Excavating

Ground Water Level (if observed): 3.6'

No. Samples Taken: 1

PID: ---

Sample Storage: ---

Geologist/Technician: JMC

TEST PIT LOCATION SKETCH MAP

See Figure

Test Pit Location Description:

Near Proposed Tennis Courts

Sample Number	Depth From Surface (feet)		Sample Location Within Test Pit	Sample Type	Moisture	Remarks (color, structure, grain size, staining, odor, PID)
	From	To				
	0	0.3			SM	Brown silt and m-vf sand, trace clay (topsoil)
	0.3	3.6			SM	Brown silt and m-vf sand, little cobble, little m gravel (fill)
TP-7	3.6	5.1		Bucket	SM	Gray organic clay
Gray Clay	5.1	8.3		Bucket	SM	Brown clay
						END OF TEST PIT @ 8.3' b.g.
						Perched ground water observed at 3.6' b.g.
						Backfilled to grade and covered with hay.
SAMPLE TYPE Bucket = Excavator Bucket G = Grab HA = Hand Auger						MOISTURE D = Dry VM = Very Moist SM = Slightly Moist W = Wet (saturated)
Comp = Composite Sample GW = Ground Water						PROPORTIONS USED 0 - 10% Trace 10 - 20% Little 20 - 35% Some 35 - 50% And

TEST PIT LOG

*HRP Associates, Inc.*167 PROPOSED BRITAIN AVENUE
PLAINVILLE, CONNECTICUT 06062

Project/Client

Location: Proposed Middletown High School

Job No.: DEC0002.GT, T02

Date: 11/24/03

Photos Taken: #10

Excavator Type: John Deere 310C

Contractor: B&M Excavating

Ground Water Level (if observed): ---

No. Samples Taken: ---

PID: ---

Sample Storage: ---

Geologist/Technician: JMC

TEST PIT LOCATION SKETCH MAP

See Figure

Test Pit Location Description:

Proposed Paved Parking

Remarks
(color, structure, grain
size, staining, odor, PID)

Moisture

Sample
TypeSample
Location
Within
Test PitDepth
From
Surface
(feet)

From

To

Brown silt and m-vf sand, trace vegetation

SM

Brown silt and m-vf sand, trace gravel

SM

Brown clay

SM

END OF TEST PIT @ 7.0' b.g.

No ground water observed.

Backfilled to grade and covered with hay.

SAMPLE TYPE

Bucket = Excavator Bucket
G = Grab
HA = Hand AugerComp = Composite Sample
GW = Ground Water

MOISTURE

D = Dry
VM = Very MoistSM = Slightly Moist
W = Wet (saturated)

PROPORTIONS USED

0 - 10% Trace
10 - 20% Little
20 - 35% Some
35 - 50% And

TEST PIT LOG

*HRP Associates, Inc.*167 PROPOSED BRITAIN AVENUE
PLAINVILLE, CONNECTICUT 06062

Project/Client:

Location: Proposed Middletown High School

Job No.: DEC0002.GT, T02

Date: 11/24/03

Photos Taken: #9

Excavator Type: John Deere 310C

Contractor: B&M Excavating

Ground Water Level (if observed): ---

No. Samples Taken: ---

PID: ---

Sample Storage: ---

Geologist/Technician: JMC

TEST PIT LOCATION SKETCH MAP

See Figure

Test Pit Location Description:

Proposed Paved Parking

Remarks
(color, structure, grain
size, staining, odor, PID)

Moisture

Sample
TypeSample
Location
Within
Test PitDepth
From
Surface
(feet)

From

To

Brown silt and m-vf sand, trace clay, trace vegetation (topsoil)

Brown silt and m-vf sand, trace cobble, trace gravel (fill)

Brown clay, little f-vf silt

END OF TEST PIT @ 7.3' b.g.

No perched ground water infiltration observed.

Backfilled to grade and covered with hay.

SAMPLE TYPE

Bucket = Excavator Bucket
G = Grab
HA = Hand AugerComp = Composite Sample
GW = Ground Water

MOISTURE

D = Dry
VM = Very MoistSM = Slightly Moist
W = Wet (saturated)

PROPORTIONS USED

0 - 10% Trace
10 - 20% Little
20 - 35% Some
35 - 50% And

TEST PIT LOG				Project/Client:		TEST PIT LOCATION SKETCH MAP	
HRP Associates, Inc. 167 PROPOSED BRITAIN AVENUE PLAINVILLE, CONNECTICUT 06062				Location: Proposed Middletown High School Job No.: DEC0002.GT, T02 Date: 11/24/03 Photos Taken: --- Excavator Type: John Deere 310C Contractor: B&M Excavating Ground Water Level (if observed): see below No. Samples Taken: 2 PID: --- Sample Storage: --- Geologist/Technician: JMC		See Figure Test Pit Location Description: Proposed Wetland Mitigation Area	
Sample Number	Depth From Surface (feet)		Sample Location Within Test Pit	Sample Type	Moisture	Remarks (color, structure, grain size, staining, odor, PID)	
	From	To					
	0	0.3			SM	Brown silt and m-vf sand, trace vegetation (topsoil)	
	0.3	2.4			SM	Brown silt and clay, trace m-vf sand, trace cobble, trace gravel, trace organics	
TP-10 Org. Clay	2.4	4.3			SM	Brown-dark gray silt and organic clay, little organics	
TP-10 Gray Clay	4.3	5.6			SM	Dark gray organic clay, some organics	
TP-10 Br. Clay	5.6	7.6			SM	Brown clay	
						END OF TEST PIT @ 7.6' b.g.	
						Perched ground water at 2.4', 4.3' b.g.	
						~0.3' process stone placed in pit bottom. Installed 10' section of 4"-diameter Schedule 40 PVC with screw cap.	
						Backfilled to grade and covered with hay.	
SAMPLE TYPE Bucket = Excavator Bucket G = Grab HA = Hand Auger Comp = Composite Sample GW = Ground Water				MOISTURE D = Dry VM = Very Moist SM = Slightly Moist W = Wet (saturated)		PROPORTIONS USED 0 - 10% Trace 10 - 20% Little 20 - 35% Some 35 - 50% And	

TEST PIT LOG

HRP Associates, Inc.

167 PROPOSED BRITAIN AVENUE
PLAINVILLE, CONNECTICUT 06062

Project/Client:

Location: Proposed Middletown High School

Job No.: DEC0002.GT, T02

Date: 11/24/03

Photos Taken: ---

Excavator Type: John Deere 310C

Contractor: B&M Excavating

Ground Water Level (if observed): see below

No. Samples Taken: --

PID: ---

Sample Storage: ---

Geologist/Technician: JMC

TEST PIT LOCATION SKETCH MAP

See Figure

Test Pit Location Description:

Proposed Wetland Mitigation Area

Remarks
(color, structure, grain
size, staining, odor, PID)Sample
TypeSample
Location
Within
Test PitDepth
From
Surface
(feet)
From ToSample
Number

Dark brown loamy silt and m-vf sand, trace vegetation.

Brown clay

END OF TEST PIT @ 7.0' b.g.

~0.3' process stone placed in pit bottom. Installed 10' section of 4" diameter Schedule 40 PVC with screw cap.

Backfilled to grade and covered with hay.

SAMPLE TYPE

Bucket = Excavator Bucket
G = Grab
HA = Hand Auger

Comp = Composite Sample
GW = Ground Water

MOISTURE

D = Dry
VM = Very Moist

SM = Slightly Moist
W = Wet (saturated)

PROPORTIONS USED

0 - 10% Trace
10 - 20% Little
20 - 35% Some
35 - 50% And

TEST PIT LOG

HRP Associates, Inc.

167 PROPOSED BRITAIN AVENUE
PLAINVILLE, CONNECTICUT 06062

Project/Client:

Location: Proposed Middletown High School

Job No.: DEC0002.GT, T02

Date: 11/24/03

Photos Taken: ---

Excavator Type: John Deere 310C

Contractor: B&M Excavating

Ground Water Level (if observed): ---

No. Samples Taken: 2

PID: ---

Sample Storage: ---

Geologist/Technician: JMC

TEST PIT LOCATION SKETCH MAP

See Figure

Test Pit Location Description:

Proposed Wetland Mitigation Area

Remarks
(color, structure, grain
size, staining, odor, PID)

Moisture

Sample
TypeSample
Location
Within
Test Pit

Depth
From
Surface
(feet)

From

To

Brown silt and m-vf sand, trace clay (topsoil)

SM

Brown silt and clay, trace m-vf sand (fill)

SM

Brown clay

SM

END OF TEST PIT @ 7.6 b.g.

No perched ground water infiltration observed.

-0.3' process stone placed in pit bottom. Installed 10' section of 4"-diameter Schedule 40 PVC with screw cap.

Backfilled to grade and covered with hay.

SAMPLE TYPE

Bucket = Excavator Bucket
G = Grab
HA = Hand Auger

Comp = Composite Sample
GW = Ground Water

D = Dry
VM = Very Moist

MOISTURE

SM = Slightly Moist
W = Wet (saturated)

PROPORTIONS USED

0 - 10% Trace
10 - 20% Little
20 - 35% Some
35 - 50% And

HRP Associates, Inc.

167 PROPOSED BRITAIN AVENUE
PLAINVILLE, CONNECTICUT 06062

Project/Client:	TEST PIT LOCATION SKETCH MAP
Location:	Proposed Middletown High School
Job No.:	DECO002.GT, T02
Date:	11/24/03
Photos Taken:	#10, #11
Excavator Type:	John Deere 310C
Contractor:	B&M Excavating
Ground Water Level (if observed):	see below
No. Samples Taken:	--
PID:	--
Sample Storage:	--
Geologist/Technician:	JMC
See Figure	Test Pit Location Description: Proposed Wetland Mitigation Area

Test Pit Location Description:
Proposed Wetland Mitigation

Sample Number	Depth From Surface (feet)		Sample Location Within Test Pit	Sample Type	Moisture	Remarks (color, structure, grain size, staining, odor, PID)
	From	To				
						-0.3' process stone placed
						Backfilled to grade and covered

SAMPLE TYPE

Bucket = Excavator Bucket
G = Grab
HA = Hand Auger

D = Dry
VM = Very Moist

MOISTURE

SM = Slightly Moist
W = Wet (saturated)

PROPORTIONS USED

0 – 10% Trace
10 – 20% Little
20 – 35% Some
35 – 50% And

**IMTL***Accurate information you can rely on.*

Soil Gradation Report

GRADATION ASTM D-422; WET WASH ASTM D-1140; MOISTURE CONTENT ASTM D-3218		
PROJECT:	HRP ASSOCIATES - NEW BRITAIN	PROJECT NO.: 3008
CLIENT:	HRP ASSOCIATES	REPORT NO.: 081
LAB NO.:	19029	DATE: 08/24/04
USE:	N/A	SAMPLED BY: CLIENT
SPEC A:	N/A	SOURCE: NEW BRITAIN
SAMPLE NO.:	GT5 (5'-7')	
GRADATION RESULTS		
SIEVE #	% PASS	SPEC A
19 mm (3/4")	100.0	
12.5 mm (1/2")	98.8	
6.3 mm (1/4")	96.0	
4.75 mm (#4)	94.6	
2.0 mm (#10)	91.3	
425 µm (#40)	77.4	
150 µm (#100)	38.0	
75 µm (#200)	16.5	
COMPLIED WITH:		SPEC A: N/A
...AS PER GRADATION ABOVE		

SOIL DESCRIPTION: DARK RED/BROWN SAND; SOME FINES; LITTLE GRAVEL
SAMPLE SIZE DOES NOT COMPLY WITH TEST METHOD.

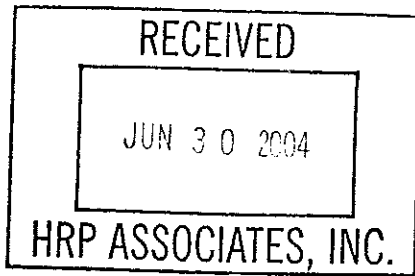
OVEN-DRY MOISTURE CONTENT: 8.5%

REVIEWED BY: _____
pc: HRP Associates
bh

David P. Quinlan 6-28-04

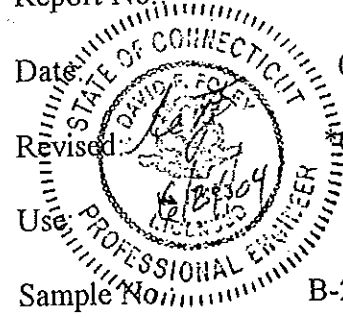
APPENDIX B

Soils Testing



Atterberg Limits Determination

Client:	HRP Associates	Project No.:	3008
Project:	HRP Associates – Middletown High School	Report No.:	*073
Technician:	Ed Powell	Date:	06/17/04
Subject:	Atterberg Limits Determination ASTM D-4318	Revised:	06/24/04
Lab No.:	18986	Use:	N/A
Source:	On Site	Sample No.:	B-22 10-12
Description:	Brown Sandy Silt (ML)		



Liquid Limit: 30
Plastic Limit: 25
Plasticity Index: 5

Remarks:

Approximately 12% retained on the #40 sieve. Sample was air-dried before preparation.

Report Revision: *Corrected Report Number

pc: HRP Associates
bh

**IMTL**

Accurate information you can rely on.

Soil Gradation Report

GRADATION ASTM D-422; WET WASH ASTM D-1140; MOISTURE CONTENT ASTM D-2216		
PROJECT:	HRP ASSOCIATES – MIDDLETOWN HIGH SCHOOL	PROJECT NO. 3008
CLIENT:	HRP ASSOCIATES	REPORT NO. 074
LAB NO.:	19014	DATE: 06/22/04
USE:	N/A	SAMPLED BY: CLIENT
SPEC A:	N/A	SOURCE: ON-SITE
SAMPLE NO.: B-23 (5'-7')		
GRADATION RESULTS		
SIEVE #	% PASS	SPEC A
19 mm (3/4")	100.0	
12.5 mm (1/2")	99.0	
6.3 mm (1/4")	96.3	
4.75 mm (#4)	95.1	
2.0 mm (#10)	91.9	
425 µm (#40)	79.2	
150 µm (#100)	70.7	
75 µm (#200)	67.7	
COMPLIED WITH:		SPEC A: N/A
... AS PER GRADATION ABOVE		

SOIL DESCRIPTION: DARK RED/BROWN FINES; SOME SAND; TRACE GRAVEL
SAMPLE SIZE DOES NOT COMPLY WITH TEST METHOD.

OVEN-DRY MOISTURE CONTENT: 21.2%

REVIEWED BY:
pc: HRP Associates
bh

David P. Quirke 6-27-04

**IMTL**

Accurate information you can rely on.

Soil Gradation Report

GRADATION ASTM D-422; WET WASH ASTM D-1140; MOISTURE CONTENT ASTM D-2216		
PROJECT:	HRP ASSOCIATES - MIDDLETOWN HIGH SCHOOL	PROJECT NO. 3008
CLIENT:	HRP ASSOCIATES	REPORT NO. 075
LAB NO.:	19015	DATE: 06/22/04
USE:	N/A	SAMPLED BY: CLIENT
SPEC A:	N/A	SOURCE: ON SITE
SAMPLE NO.:	B-26 (5'-7')	
GRADATION RESULTS		
SIEVE #	% PASS	SPEC A
4.75 mm (#4)	100.0	
2.0 mm (#10)	100.0	
425 µm (#40)	99.7	
150 µm (#100)	99.3	
75 µm (#200)	99.0	
COMPLIED WITH:		SPEC A: N/A
... AS PER GRADATION ABOVE		

SOIL DESCRIPTION: DARK RED/BROWN FINES; TRACE SAND
SAMPLE SIZE DOES NOT COMPLY WITH TEST METHOD.

OVEN-DRY MOISTURE CONTENT: 35.0%

REVIEWED BY: _____
pc: HRP Associates
bh

David P. L... 6-22-04



Accurate information you can rely on.

Atterberg Limits Determination

Client: HRP Associates
Project: HRP Associates – Middletown High School
Technician: Ed Powell
Subject: Atterberg Limits Determination ASTM D-4318
Lab No.: 19016
Source: On-Site
Description: Dark Red/Brown Sandy Clay (CL)

Project No.: 3008

Report No.: 076

Date: 06/23/04

Use: N/A

Sample No.: B-25 (5'-7')

Liquid Limit: 34
Plastic Limit: 24
Plasticity Index: 10

Remarks:

Approximately 56% retained on the #40 sieve. Sample was air-dried before preparation.

pc: HRP Associates
bh

**IMTL**

Accurate information you can rely on.

Soil Gradation Report

GRADATION ASTM D-422; WET WASH ASTM D-1140; MOISTURE CONTENT ASTM D-2216		
PROJECT:	HRP ASSOCIATES - NEW BRITAIN	PROJECT NO.: 3008
CLIENT:	HRP ASSOCIATES	REPORT NO.: 077
LAB NO.:	19025	DATE: 06/24/04
USE:	N/A	SAMPLED BY: CLIENT
SPEC A:	N/A	SOURCE: NEW BRITAIN
SAMPLE NO.:	GT1 (5'-7')	
GRADATION RESULTS		
SIEVE #	% PASS	SPEC A
19 mm (3/4")	100.0	
12.5 mm (1/2")	88.9	
6.3 mm (1/4")	77.2	
4.75 mm (#4)	73.3	
2.0 mm (#10)	62.5	
425 µm (#40)	49.5	
150 µm (#100)	41.9	
75 µm (#200)	37.3	
COMPLIED WITH:		SPEC A: N/A
...AS PER GRADATION ABOVE		

SOIL DESCRIPTION: DARK RED/BROWN FINES AND SAND; SOME GRAVEL
SAMPLE SIZE DOES NOT COMPLY WITH TEST METHOD.

OVEN-DRY MOISTURE CONTENT: 10.6%

REVIEWED BY: _____

pc: HRP Associates

bh

David P. Quirk 6-28-04

**IMTL**

Accurate information you can rely on.

Soil Gradation Report

GRADATION ASTM D-422; WET WASH ASTM D-1140; MOISTURE CONTENT ASTM D-2976		
PROJECT:	HRP ASSOCIATES - NEW BRITAIN	PROJECT NO. 3008
CLIENT:	HRP ASSOCIATES	REPORT NO. 078
LAB NO.:	19026	DATE: 06/24/04
USE:	N/A	SAMPLED BY: CLIENT
SPEC A:	N/A	SOURCE: NEW BRITAIN
SAMPLE NO.:	GT2 (10'-12')	
GRADATION RESULTS		
SIEVE #	% PASS	SPEC A
25 mm (1")	100.0	
19 mm (3/4")	74.7	
12.5 mm (1/2")	74.7	
6.3 mm (1/4")	68.0	
4.75 mm (#4)	67.0	
2.0 mm (#10)	57.4	
425 µm (#40)	41.8	
150 µm (#100)	26.9	
75 µm (#200)	19.9	
COMPLIED WITH:		SPEC A: N/A
... AS PER GRADATION ABOVE		

SOIL DESCRIPTION: DARK RED/BROWN SAND; SOME GRAVEL; SOME FINES
SAMPLE SIZE DOES NOT COMPLY WITH TEST METHOD.

OVEN-DRY MOISTURE CONTENT: 7.7%

REVIEWED BY: _____
pc: HRP Associates
bh

Daniel F. Quirli 6-28-04



Accurate information you can rely on.

Soil Gradation Report

GRADATION ASTM D-422; WET WASH ASTM D-1140; MOISTURE CONTENT ASTM D-2216		
PROJECT:	HRP ASSOCIATES - NEW BRITAIN	PROJECT NO. 3008
CLIENT:	HRP ASSOCIATES	REPORT NO. 079
LAB NO.:	19027	DATE: 06/24/04
USE:	N/A	SAMPLED BY: CLIENT
SPEC A:	N/A	SOURCE: NEW BRITAIN
SAMPLE NO.:	GT3 (5'-7')	
GRADATION RESULTS		
SIEVE #	% PASS	SPEC A
12.5 mm (1/2")	100.0	
6.3 mm (1/4")	99.6	
4.75 mm (#4)	98.3	
2.0 mm (#10)	94.0	
425 µm (#40)	75.2	
150 µm (#100)	49.1	
75 µm (#200)	32.5	
COMPLIED WITH:		SPEC A: N/A
... AS PER GRADATION ABOVE		

SOIL DESCRIPTION: DARK RED/BROWN SAND; SOME FINES; TRACE GRAVEL
SAMPLE SIZE DOES NOT COMPLY WITH TEST METHOD.

OVEN-DRY MOISTURE CONTENT: 15.2%

REVIEWED BY:
pc: HRP Associates
bh

David P. Smith 6-28-04

**IMTL**

Accurate information you can rely on.

Soil Gradation Report

GRADATION ASTM D-422; WET WASH ASTM D-1140; MOISTURE CONTENT ASTM D-2216		
PROJECT:	HRP ASSOCIATES - NEW BRITAIN	PROJECT NO. 3008
CLIENT:	HRP ASSOCIATES	REPORT NO. 080
LAB NO.:	19028	DATE: 06/24/04
USE:	N/A	SAMPLED BY: CLIENT
SPEC A:	N/A	SOURCE: NEW BRITAIN
SAMPLE NO.:	GT4 (5'-7')	
GRADATION RESULTS		
SIEVE #	% PASS	SPEC A
37.5 mm (1-1/2")	100.0	
25 mm (1")	86.4	
19 mm (3/4")	86.4	
12.5 mm (1/2")	72.7	
6.3 mm (1/4")	57.5	
4.75 mm (#4)	53.9	
2.0 mm (#10)	41.9	
425 µm (#40)	26.9	
150 µm (#100)	21.0	
75 µm (#200)	18.1	
COMPLIED WITH:		SPEC A: N/A
...AS PER GRADATION ABOVE		

SOIL DESCRIPTION: DARK RED/BROWN GRAVEL AND SAND; SOME FINES
SAMPLE SIZE DOES NOT COMPLY WITH TEST METHOD.

OVEN-DRY MOISTURE CONTENT: 6.6%

REVIEWED BY: _____
pc: HRP Associates
bh

David P. Chirba 6-28-04

APPENDIX C
Consolidation Tests

Geotechnical Test Report

Middletown High School Project Middletown, CT

Prepared for:

HRP Associates, Inc.

Plainville, CT

Prepared by:

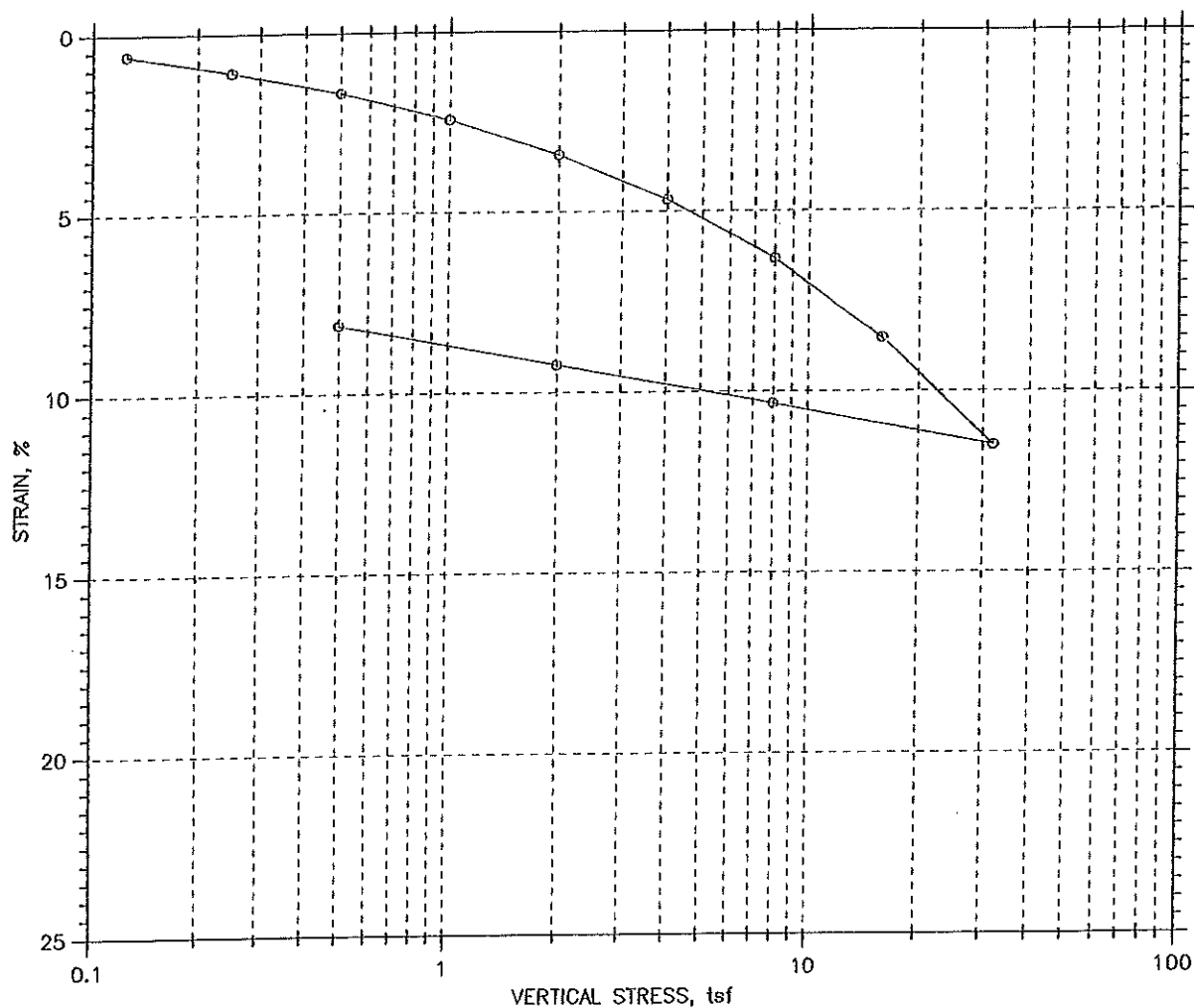


GeoTesting Express, Inc.

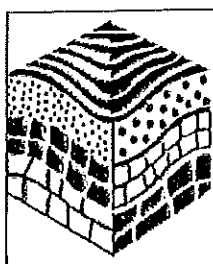
Boxborough, MA

January 2, 2004

CONSOLIDATION TEST DATA SUMMARY REPORT



				Before Test	After Test	
Overburden Pressure:				Water Content, %	27.74	23.38
Preconsolidation Pressure:				Dry Unit Weight, pcf	96.73	105.3
Compression Index:				Saturation, %	96.98	100.00
Diameter: 2.5 in		Height: 1 in		Void Ratio	0.80	0.65
LL: ---	PL: ---	PI: ---	GS: 2.78			



Project: Middletown High School	Location: Middletown, CT	Project No.: GTX-4739
Boring No.: B-9	Tested By: fy	Checked By: jdl
Sample No.: ---	Test Date: 12/24/2003	Depth: 10-12 ft
Test No.: C2	Sample Type: Tube	Elevation: ---
Description: Moist, reddish brown clayey silt		
Remarks: ---		

Fri, 02-JAN-2004 09:29:49

CONSOLIDATION TEST DATA

Project: Middletown High School
 Boring No.: B-9
 Sample No.: ---
 Test No.: C2

Location: Middletown, CT
 Tested By: fy
 Test Date: 12/24/2003
 Sample Type: Tube

Project No.: GTX-4739
 Checked By: jdt
 Depth: 10-12 ft
 Elevation: ---

Soil Description: Moist, reddish brown clayey silt
 Remarks: ---

Estimated Specific Gravity: 2.78
 Initial Void Ratio: 0.80
 Final Void Ratio: 0.65

Liquid Limit: ---
 Plastic Limit: ---
 Plasticity Index: ---

Initial Height: 1.00 in
 Specimen Diameter: 2.50 in

	Before Consolidation		After Consolidation	
	Trimmings	Specimen+Ring	Specimen+Ring	Trimmings
Container ID	m	RING		26
Wt. Container + Wet Soil, gm	352.63	376.28	370.84	161.74
Wt. Container + Dry Soil, gm	278.41	341.7	341.7	132.63
Wt. Container, gm	8.16	217.06	217.06	8.12
Wt. Dry Soil, gm	270.25	124.64	124.64	124.51
Water Content, %	27.46	27.74	23.38	23.38
Void Ratio	---	0.80	0.65	---
Degree of Saturation, %	---	96.98	100.00	---
Dry Unit Weight, pcf	---	96.731	105.26	---

Note: Specific Gravity and Void Ratios are calculated assuming the degree of saturation equals 100% at the end of the test. Therefore, values may not represent actual values for the specimen.

CONSOLIDATION TEST DATA

Project: Middletown High School
 Boring No.: B-9
 Sample No.: ---
 Test No.: C2

Location: Middletown, CT
 Tested By: fy
 Test Date: 12/24/2003
 Sample Type: Tube

Project No.: GTX-4739
 Checked By: jdt
 Depth: 10-12 ft
 Elevation: ---

Soil Description: Moist, reddish brown clayey silt
 Remarks: ---

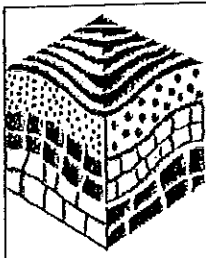
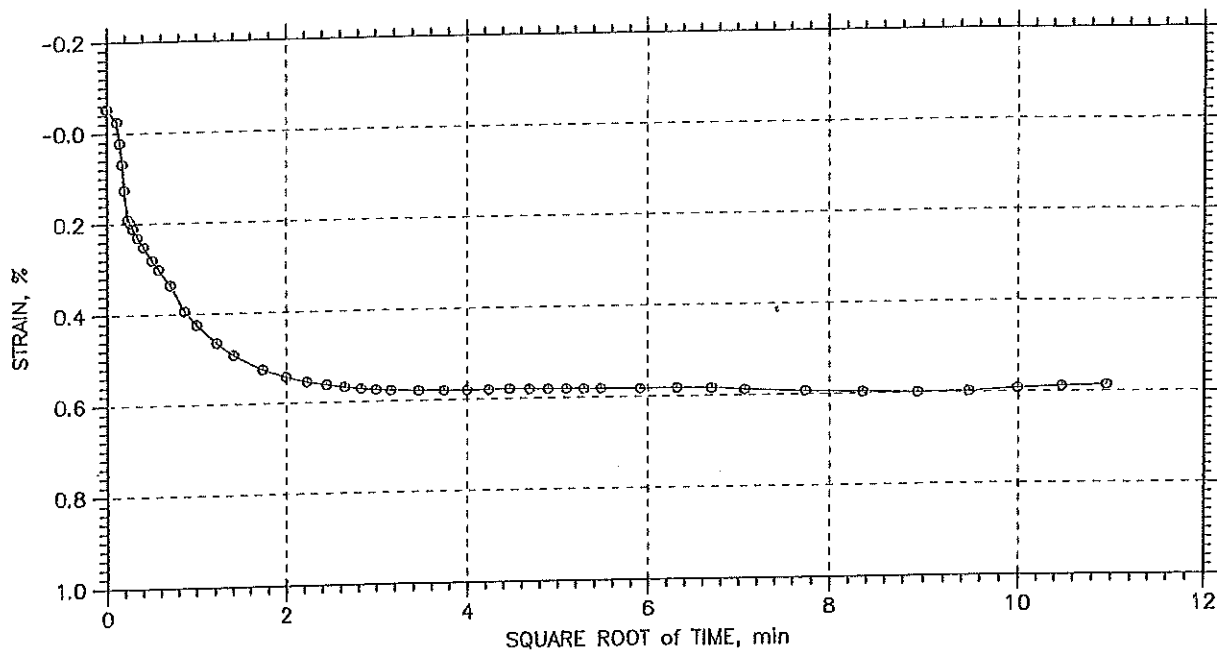
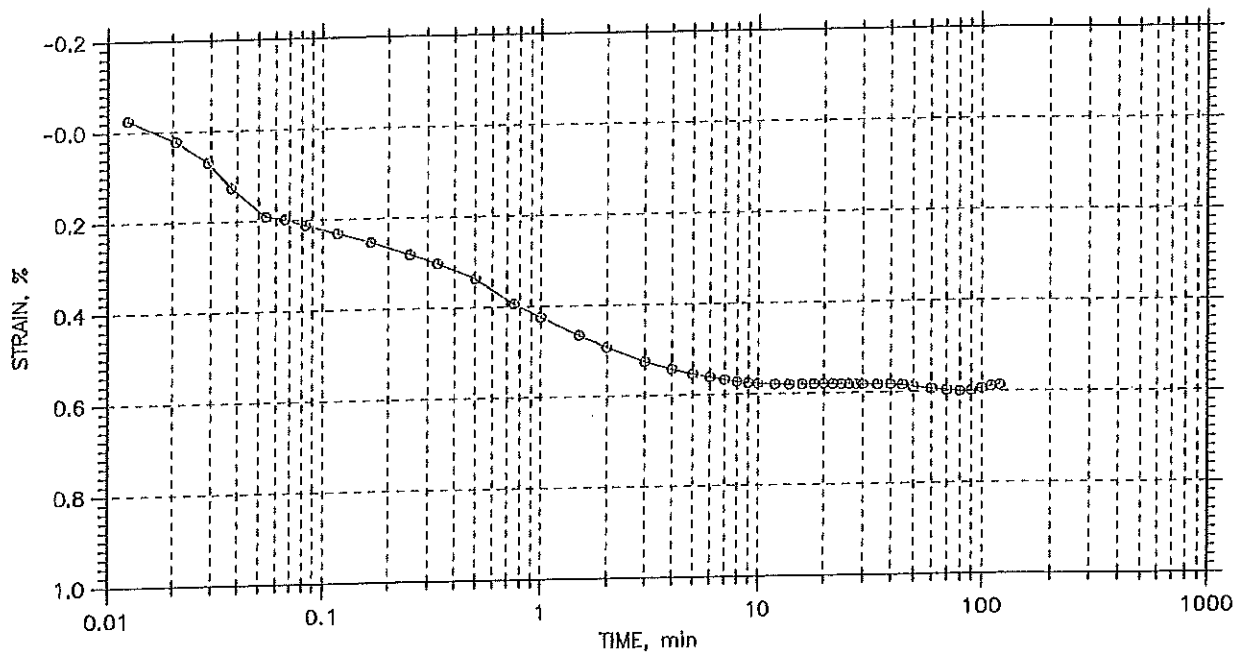
	Applied Stress tsf	Final Displacement in	Void Ratio	Strain at End %	T50 Fitting		Coefficient of Consolidation		
					Sq.Rt. min	Log min	Sq.Rt. in ² /sec	Log in ² /sec	Ave. in ² /sec
1	0.125	0.005862	0.786	0.59	0.4	0.0	2.32e-003	0.00e+000	2.32e-003
2	0.25	0.01079	0.777	1.08	0.2	0.2	3.71e-003	4.14e-003	3.91e-003
3	0.5	0.0167	0.766	1.67	0.2	0.1	4.92e-003	7.59e-003	5.97e-003
4	1	0.0243	0.753	2.43	0.1	0.1	7.55e-003	1.45e-002	9.93e-003
5	2	0.03418	0.735	3.42	0.1	0.0	1.08e-002	2.02e-002	1.41e-002
6	4	0.0467	0.712	4.67	0.1	0.0	1.41e-002	3.03e-002	1.93e-002
7	8	0.06309	0.683	6.31	0.0	0.0	1.99e-002	2.83e-002	2.34e-002
8	16	0.08524	0.643	8.52	0.0	0.0	5.23e-002	4.27e-002	4.70e-002
9	32	0.1149	0.590	11.49	0.0	0.0	6.40e-002	4.67e-002	5.40e-002
10	8	0.1033	0.611	10.33	0.0	0.0	1.13e-001	0.00e+000	1.13e-001
11	2	0.09237	0.630	9.24	0.0	0.0	1.73e-002	0.00e+000	1.73e-002
12	0.5	0.08102	0.651	8.10	0.2	0.1	4.23e-003	6.25e-003	5.04e-003

CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 1 of 12

Stress: 0.125 tsf



Project: Middletown High School	Location: Middletown, CT	Project No.: GTX-4739
Boring No.: B-9	Tested By: fy	Checked By: jdt
Sample No.: ---	Test Date: 12/24/2003	Depth: 10-12 ft
Test No.: C2	Sample Type: Tube	Elevation: ---
Description: Moist, reddish brown clayey silt		
Remarks: ---		

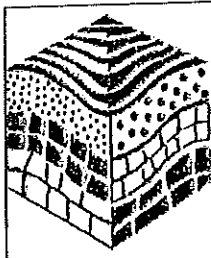
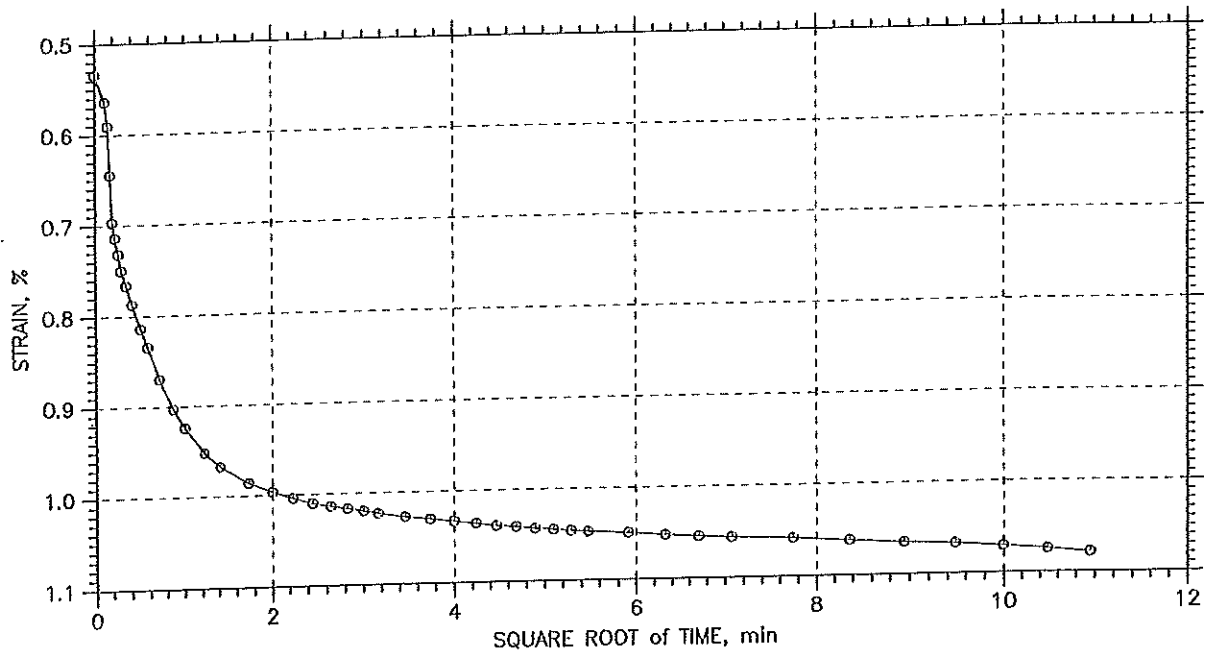
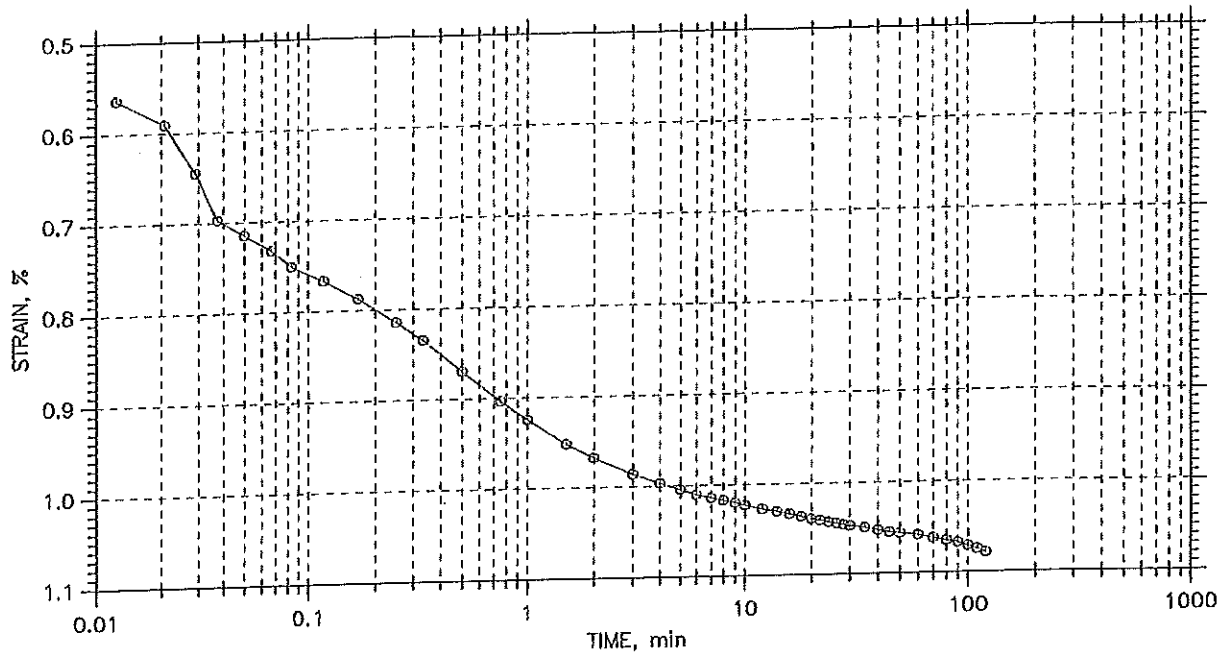
Fri, 02-JAN-2004 09:29:50

CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 2 of 12

Stress: 0.25 tsf



Project: Middletown High School	Location: Middletown, CT	Project No.: GTX-4739
Boring No.: B-9	Tested By: fy	Checked By: jdt
Sample No.: ---	Test Date: 12/24/2003	Depth: 10-12 ft
Test No.: C2	Sample Type: Tube	Elevation: ---
Description: Moist, reddish brown clayey silt		
Remarks: ---		

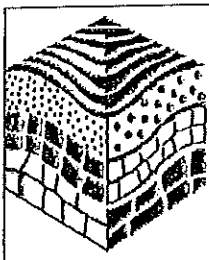
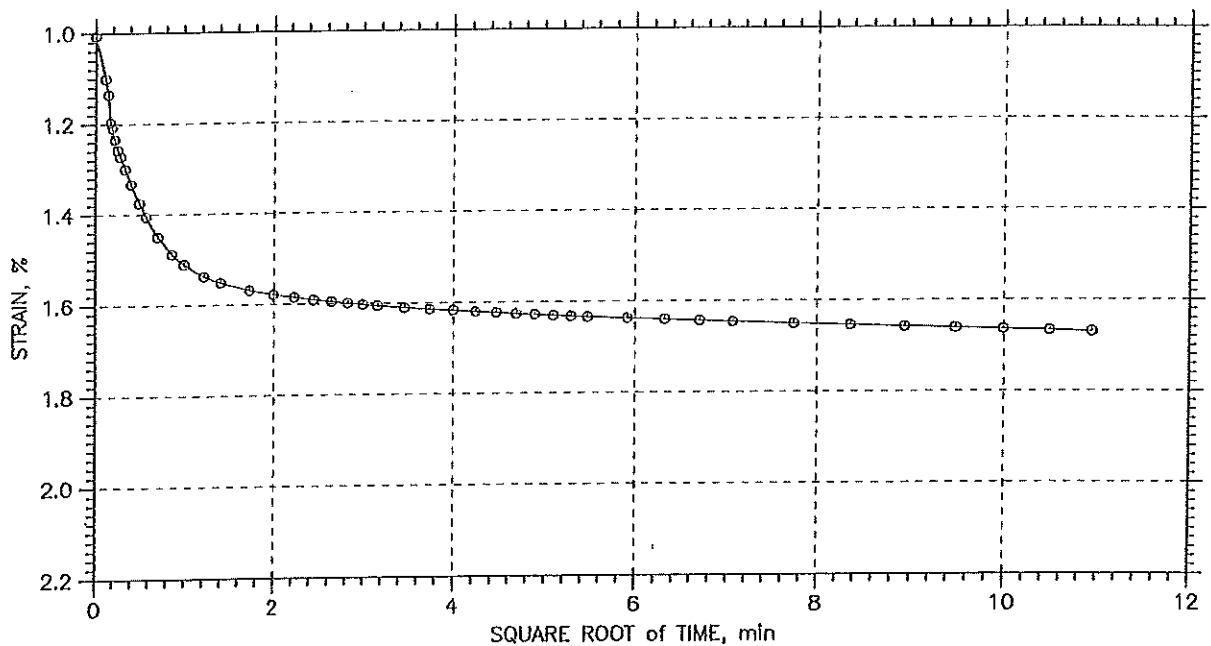
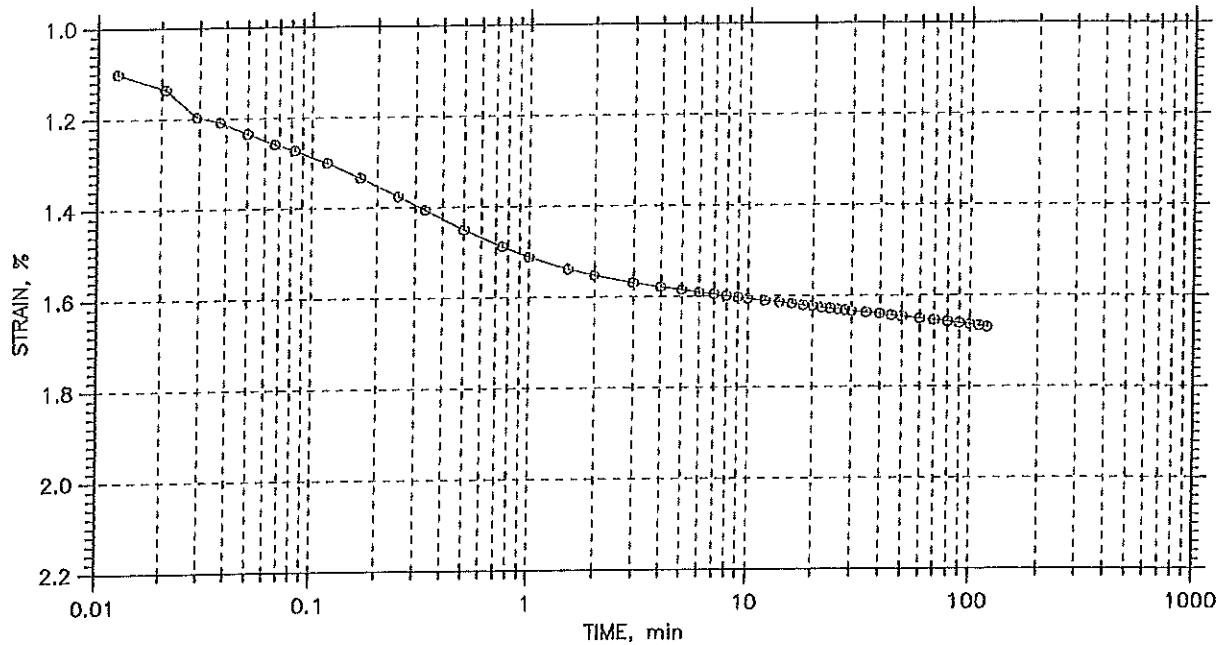
Fri, 02-JAN-2004 09:29:51

CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 3 of 12

Stress: 0.5 tsf



Project: Middletown High School	Location: Middletown, CT	Project No.: GTX-4739
Boring No.: B-9	Tested By: fy	Checked By: jdt
Sample No.: ---	Test Date: 12/24/2003	Depth: 10-12 ft
Test No.: C2	Sample Type: Tube	Elevation: ---
Description: Moist, reddish brown clayey silt		
Remarks: ---		

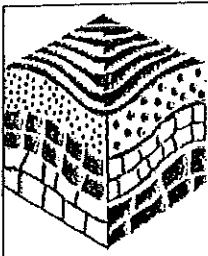
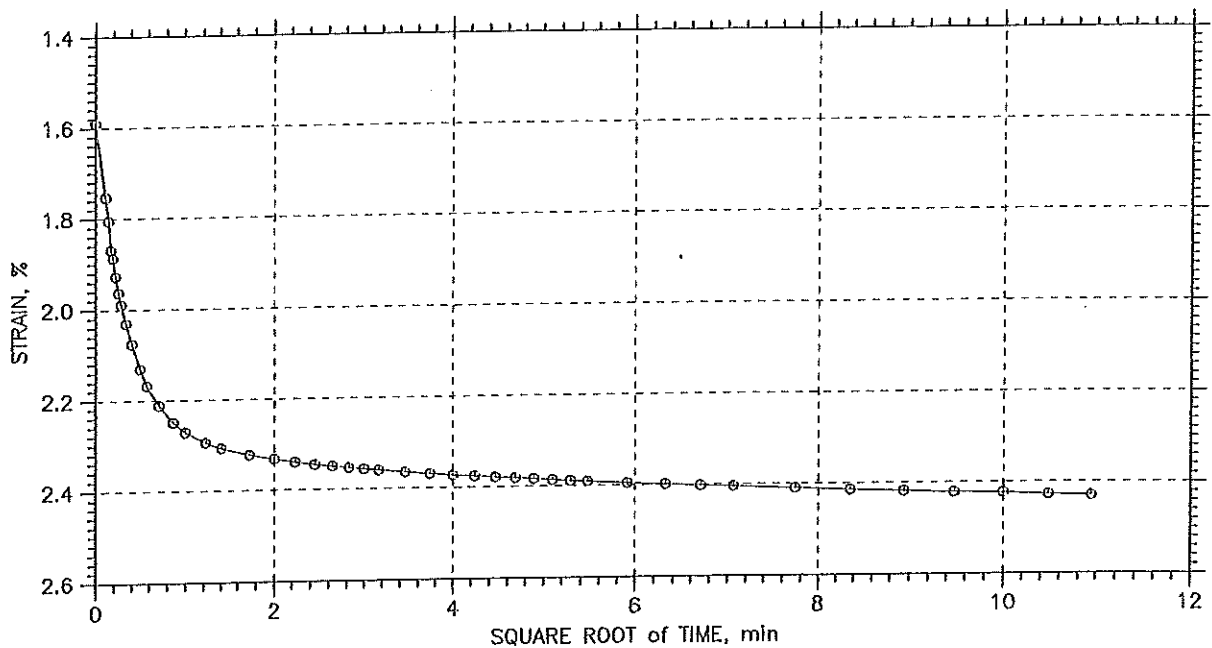
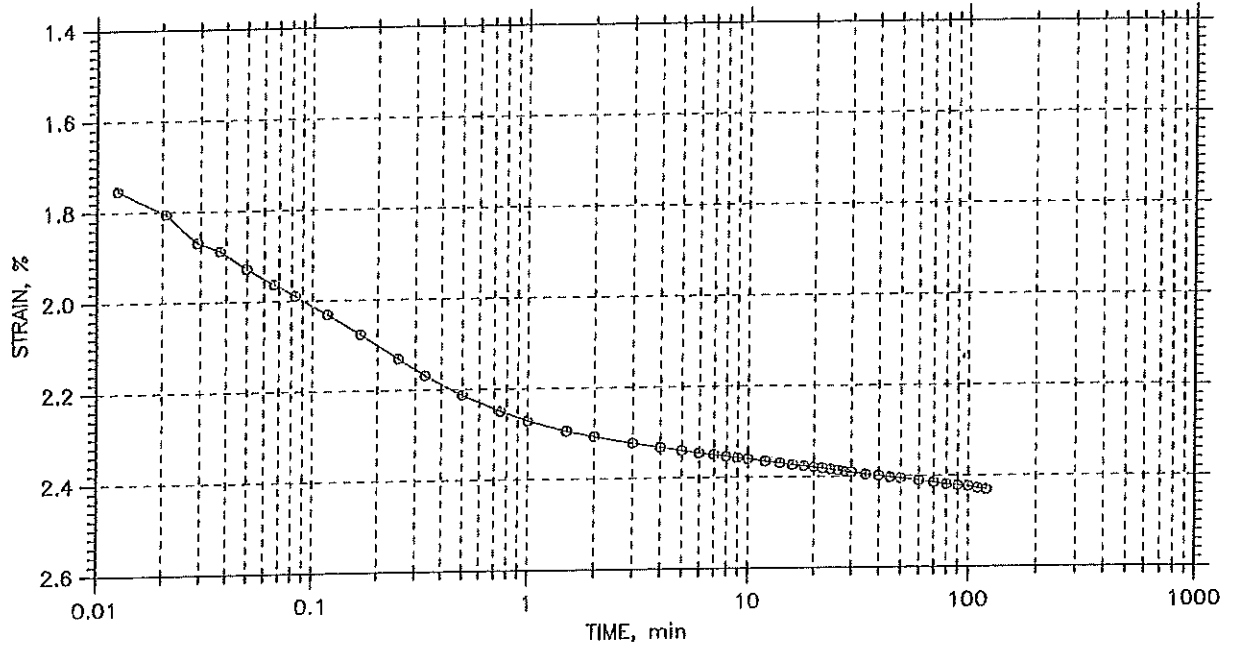
Fri, 02-JAN-2004 09:29:51

CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 4 of 12

Stress: 1. tsf



Project: Middletown High School	Location: Middletown, CT	Project No.: GTX-4739
Boring No.: B-9	Tested By: fy	Checked By: jdt
Sample No.: ---	Test Date: 12/24/2003	Depth: 10-12 ft
Test No.: C2	Sample Type: Tube	Elevation: ---
Description: Moist, reddish brown clayey silt		
Remarks: ---		

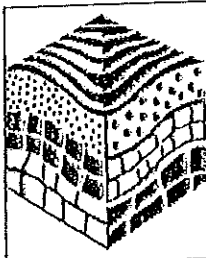
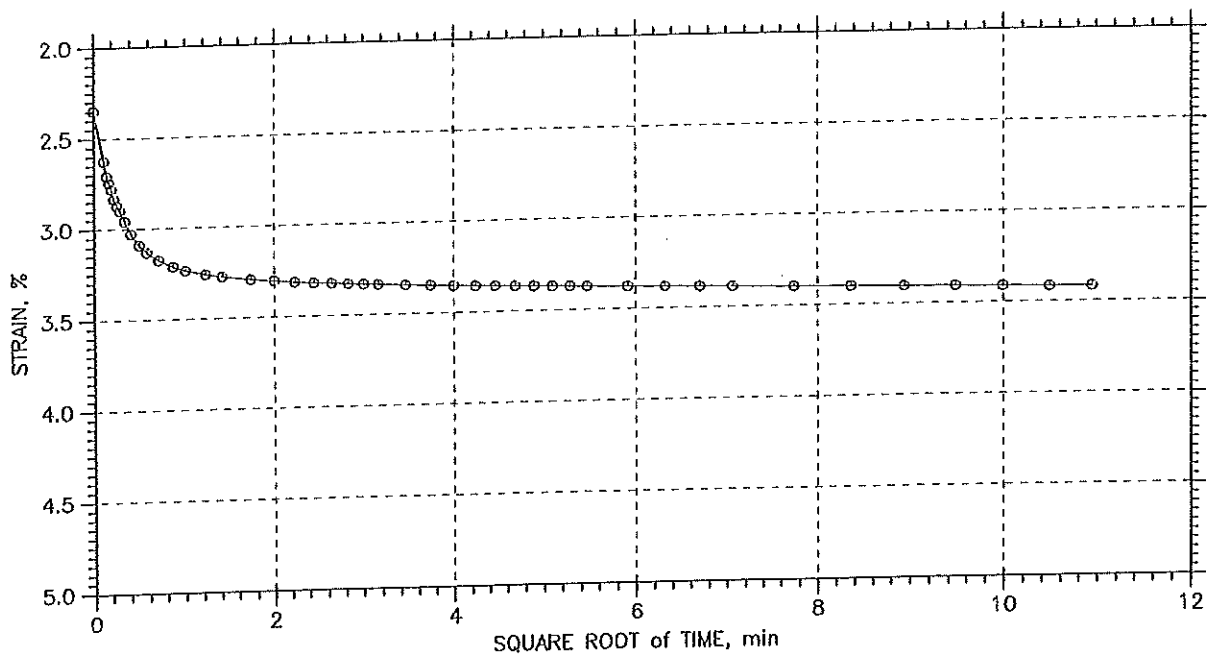
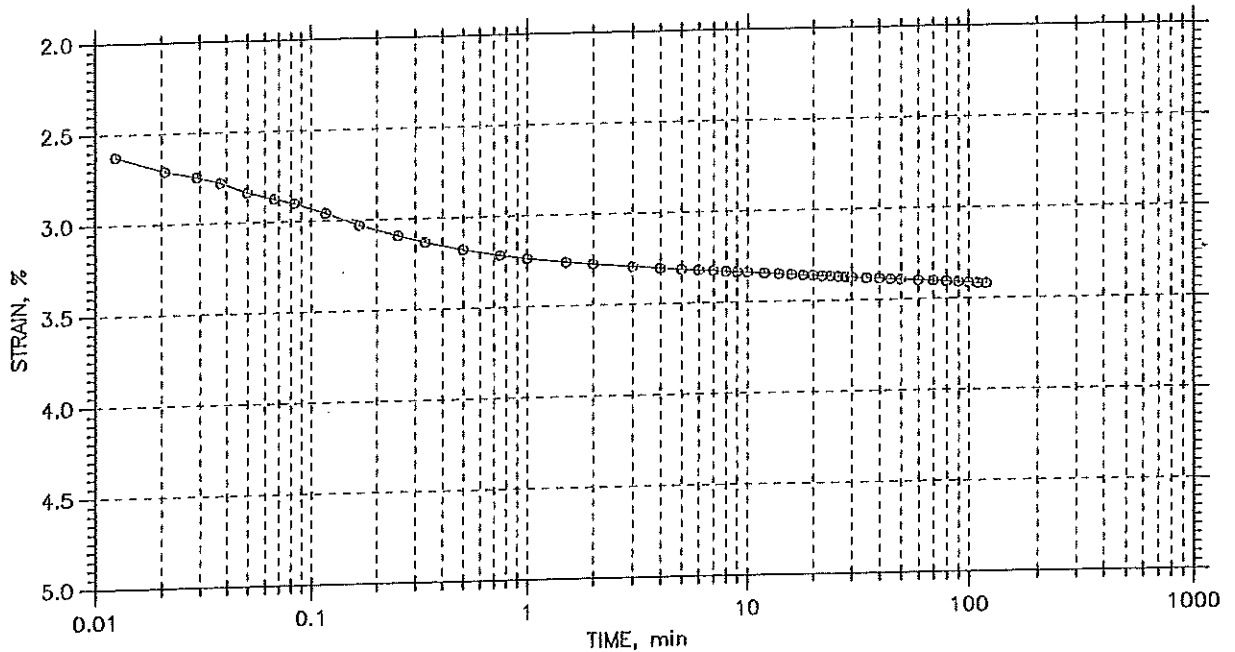
Fri, 02-JAN-2004 09:29:52

CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 5 of 12

Stress: 2. tsf



Project: Middletown High School	Location: Middletown, CT	Project No.: GTX-4739
Boring No.: B-9	Tested By: fy	Checked By: jdt
Sample No.: ---	Test Date: 12/24/2003	Depth: 10-12 ft
Test No.: C2	Sample Type: Tube	Elevation: ---
Description: Moist, reddish brown clayey silt		
Remarks: ---		

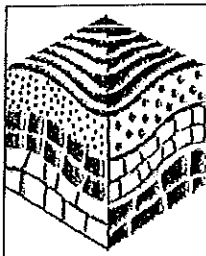
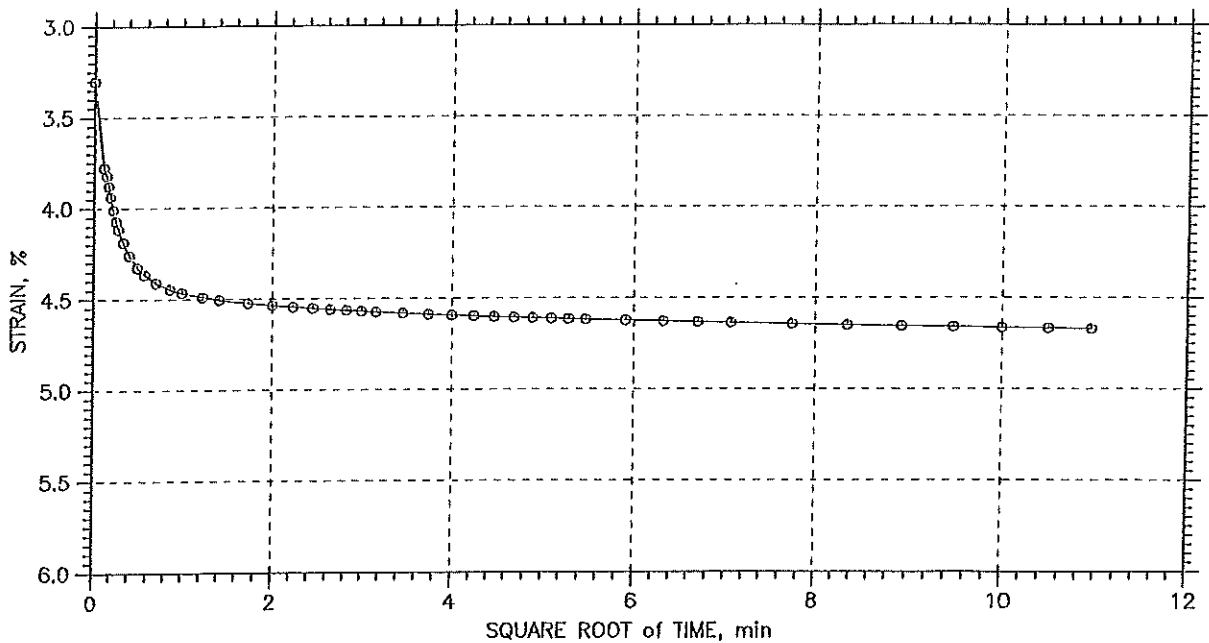
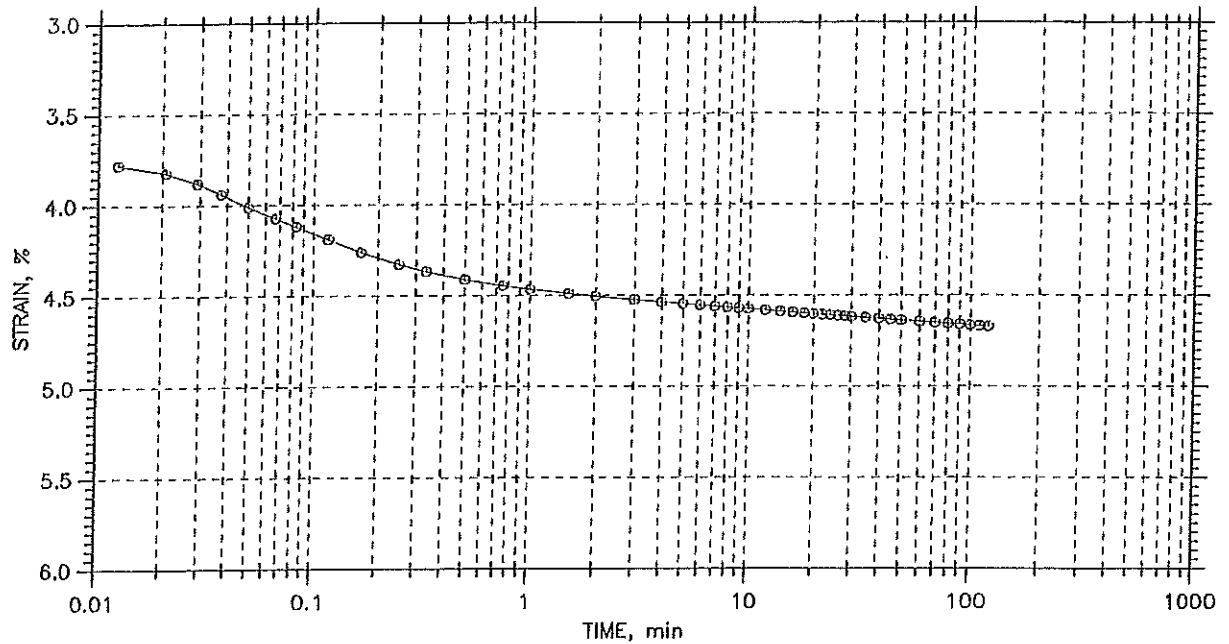
Fri, 02-JAN-2004 09:29:53

CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 6 of 12

Stress: 4. tsf



Project: Middletown High School	Location: Middletown, CT	Project No.: GTX-4739
Boring No.: B-9	Tested By: fy	Checked By: jdt
Sample No.: ---	Test Date: 12/24/2003	Depth: 10-12 ft
Test No.: C2	Sample Type: Tube	Elevation: ---
Description: Moist, reddish brown clayey silt		
Remarks: ---		

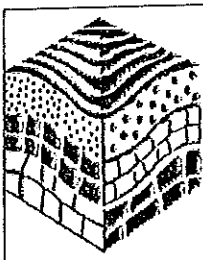
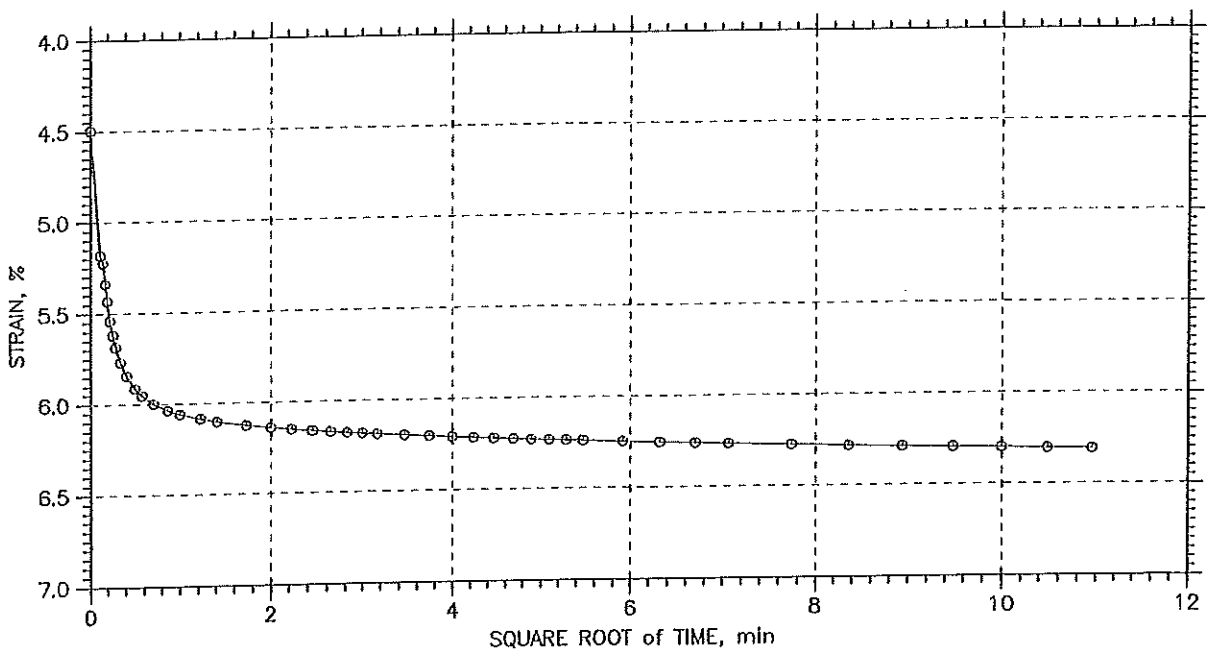
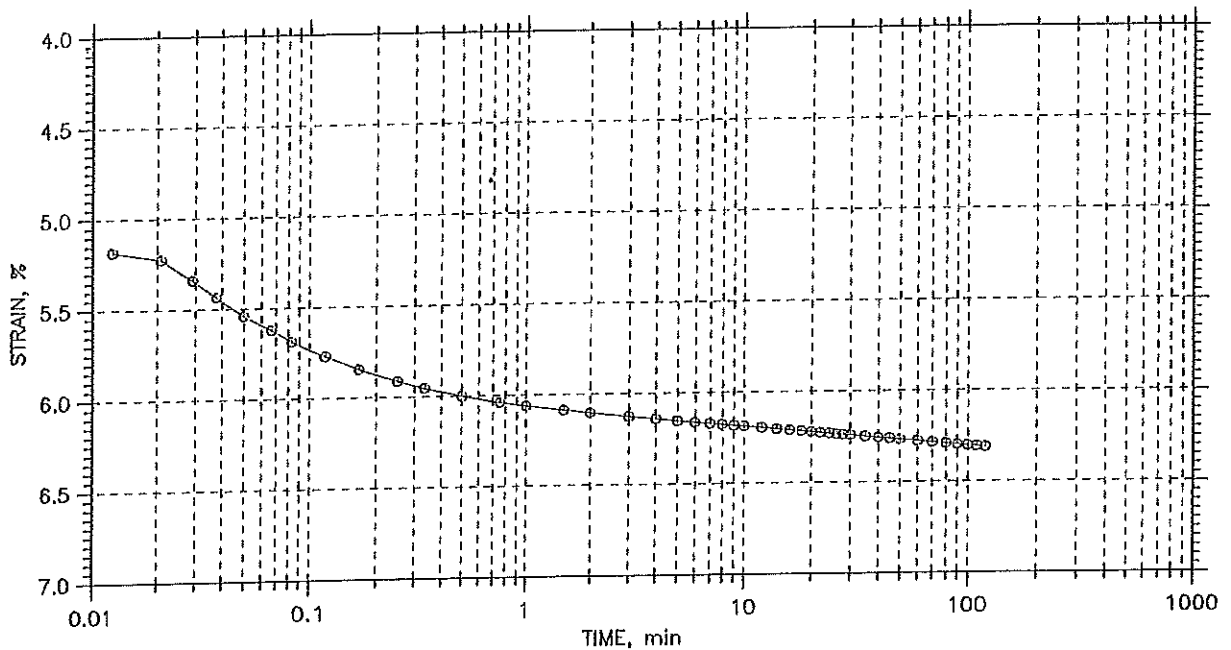
Fri, 02-JAN-2004 09:29:54

CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 7 of 12

Stress: 8. tsf



Project: Middletown High School	Location: Middletown, CT	Project No.: GTX-4739
Boring No.: B-9	Tested By: fy	Checked By: jdt
Sample No.: ---	Test Date: 12/24/2003	Depth: 10-12 ft
Test No.: C2	Sample Type: Tube	Elevation: ---
Description: Moist, reddish brown clayey silt		
Remarks: ---		

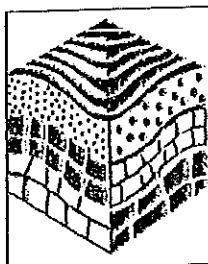
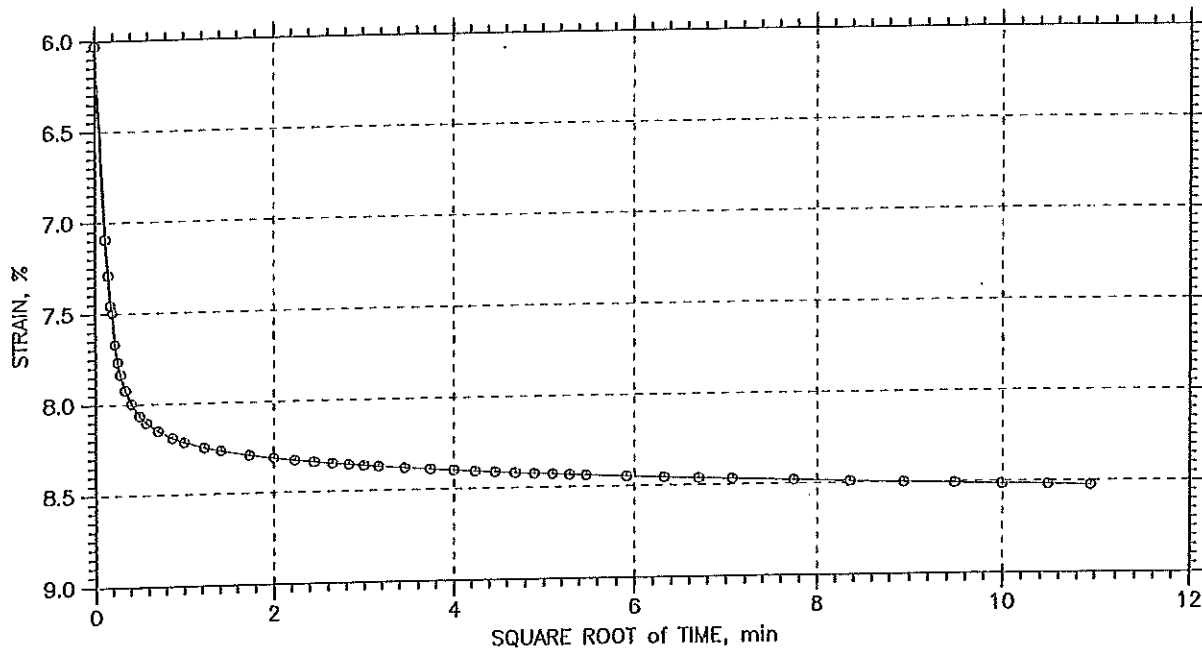
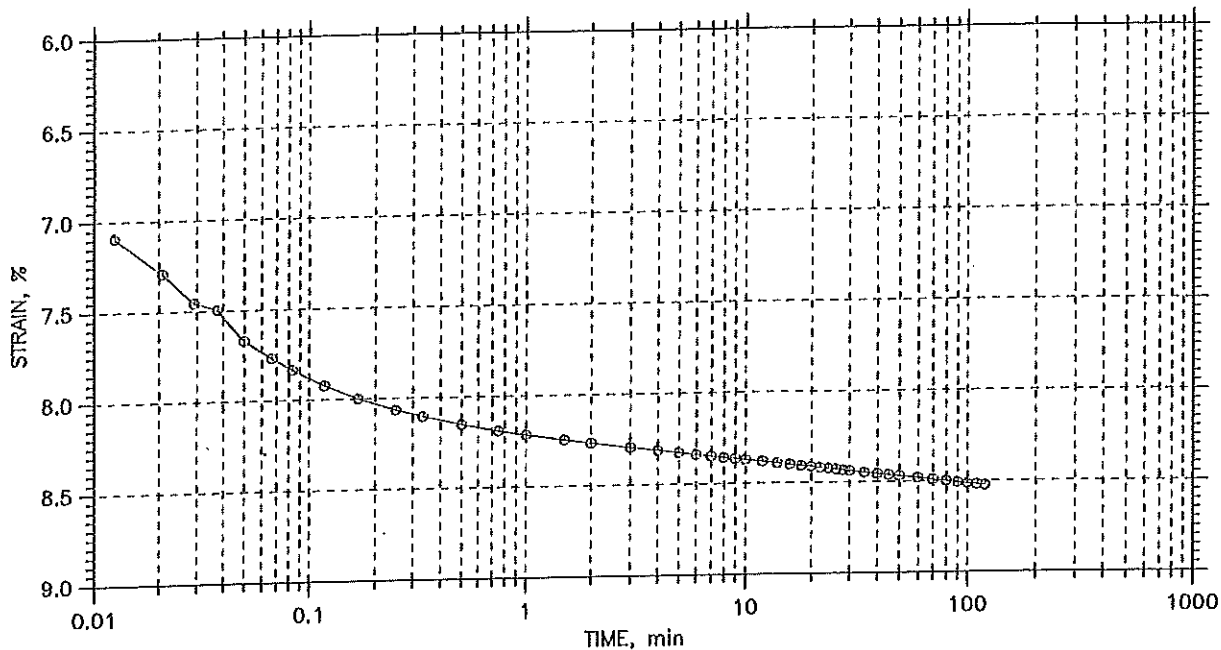
Fri, 02-JAN-2004 09:29:55

CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 8 of 12

Stress: 16. tsf



Project: Middletown High School	Location: Middletown, CT	Project No.: GTX-4739
Boring No.: B-9	Tested By: fy	Checked By: jdl
Sample No.: ---	Test Date: 12/24/2003	Depth: 10-12 ft
Test No.: C2	Sample Type: Tube	Elevation: ---
Description: Moist, reddish brown clayey silt		
Remarks: ---		

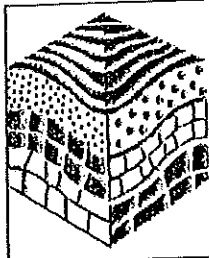
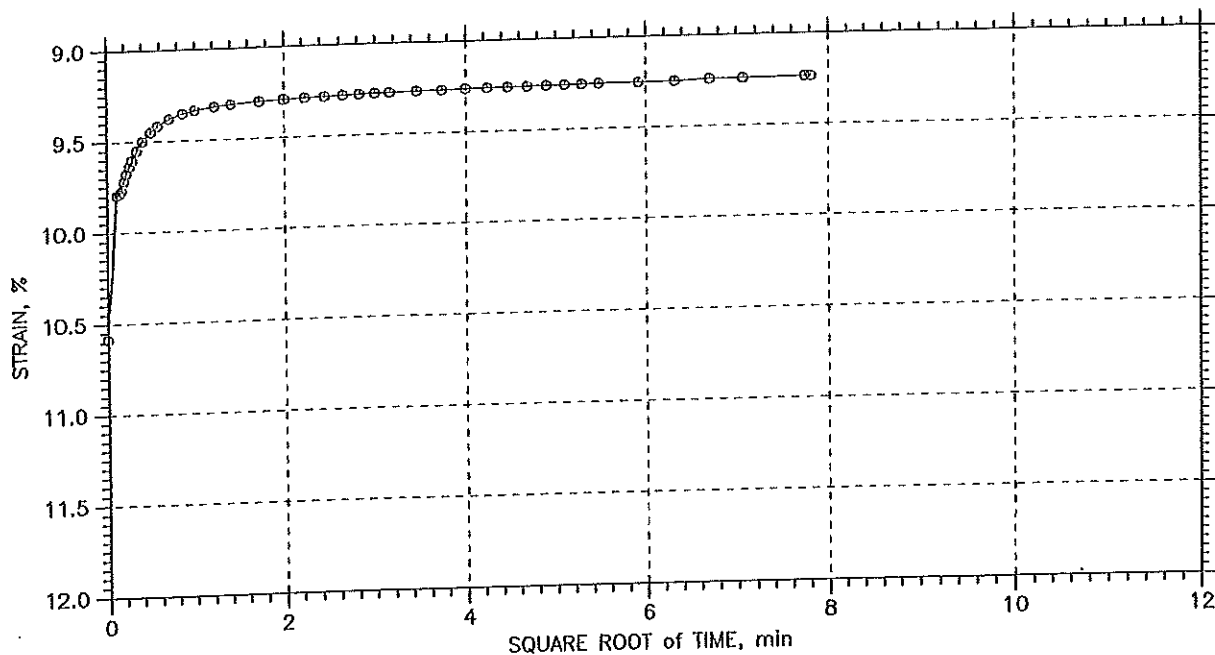
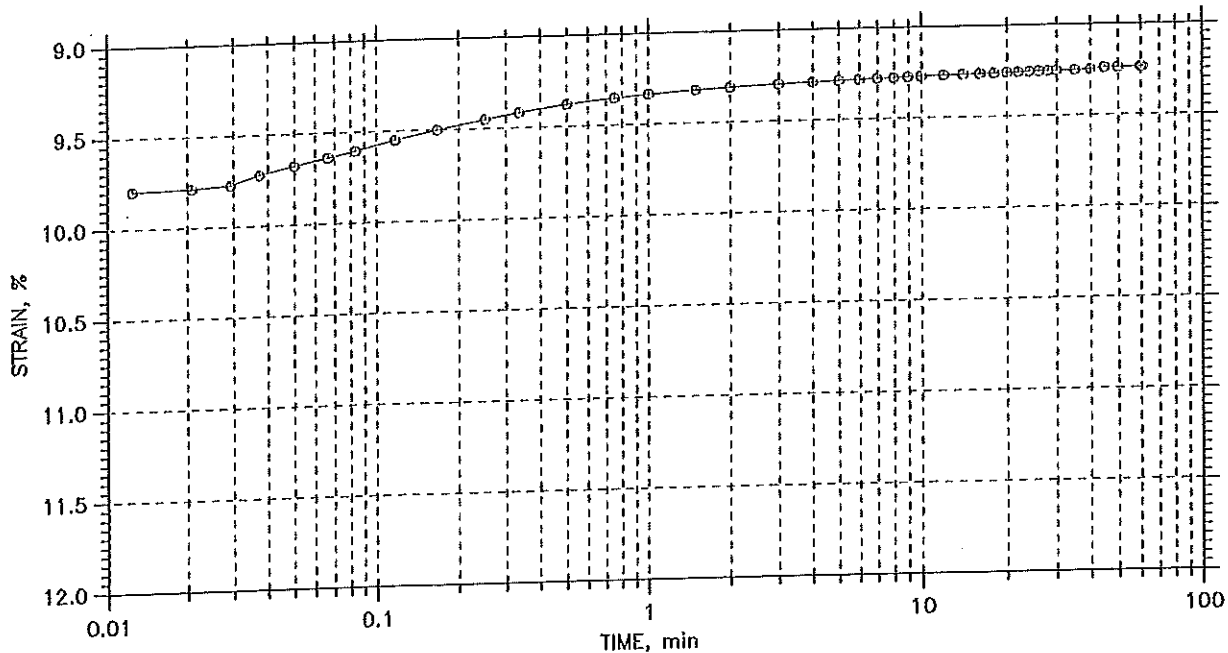
Fri, 02-JAN-2004 09:29:56

CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 11 of 12

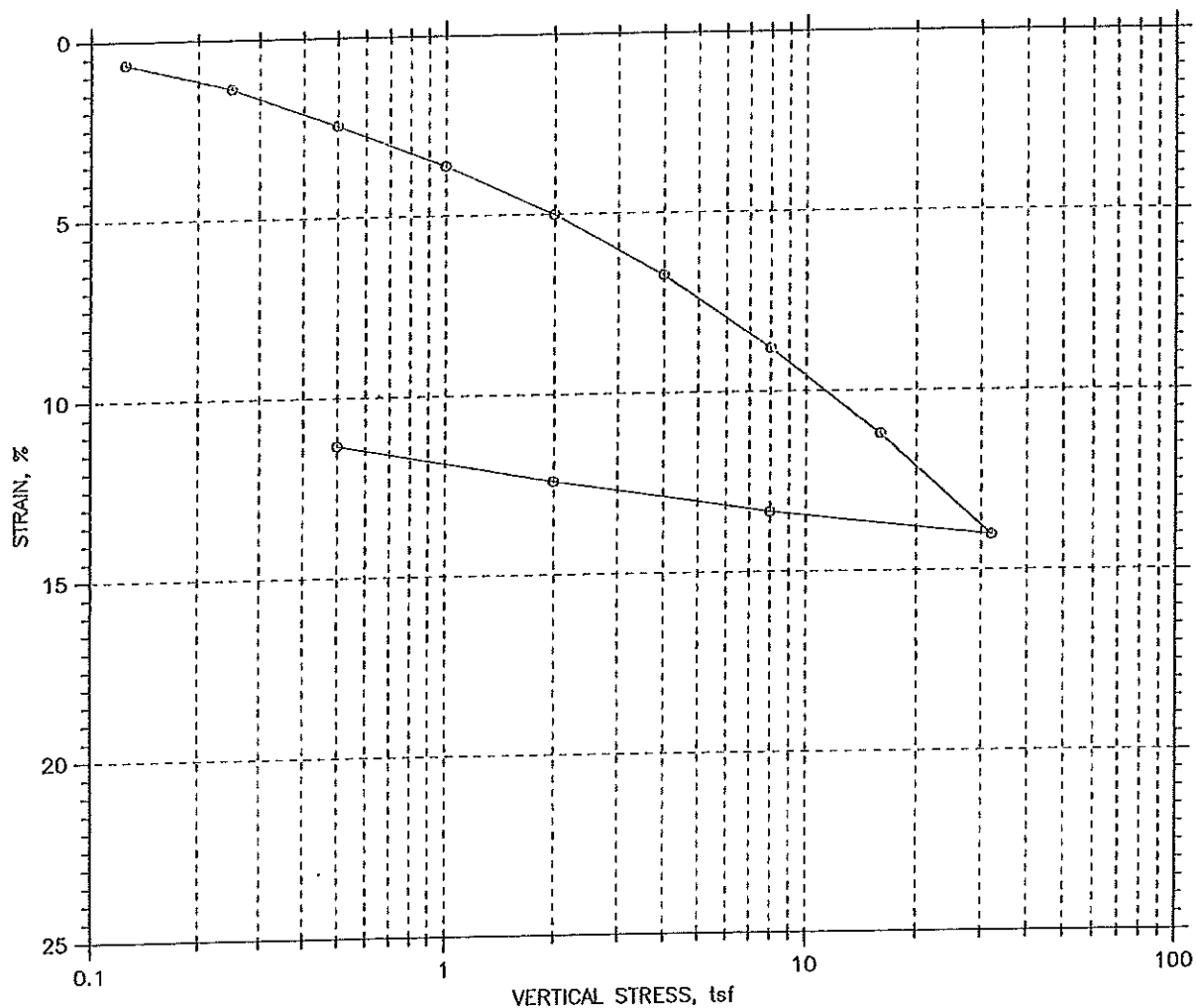
Stress: 2. tsf



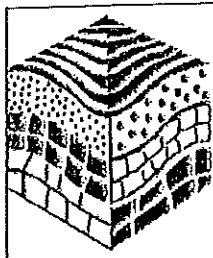
Project: Middletown High School	Location: Middletown, CT	Project No.: GTX-4739
Boring No.: B-9	Tested By: fy	Checked By: jdt
Sample No.: ---	Test Date: 12/24/2003	Depth: 10-12 ft
Test No.: C2	Sample Type: Tube	Elevation: ---
Description: Moist, reddish brown clayey silt		
Remarks: ---		

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CONSOLIDATION TEST DATA SUMMARY REPORT



		Before Test	After Test
Overburden Pressure:		36.03	27.93
Preconsolidation Pressure:		86.25	97.27
Compression Index:		99.76	100.00
Diameter: 2.5 in	Height: 1 in	Void Ratio	
LL: ---	PL: ---	1.00	0.77
Pl: ---	GS: 2.76		



Project: Middletown High School	Location: Middletown, CT	Project No.: GTX-4739
Boring No.: B-13	Tested By: fy	Checked By: jdt
Sample No.: ---	Test Date: 12/24/03	Depth: 8-10 ft
Test No.: C3	Sample Type: Tube	Elevation: ---
Description: Moist, reddish brown clayey silt		
Remarks: ---		

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CONSOLIDATION TEST DATA

Project: Middletown High School
 Boring No.: B-13
 Sample No.: ---
 Test No.: C3

Location: Middletown, CT
 Tested By: fy
 Test Date: 12/24/03
 Sample Type: Tube

Project No.: GTX-4739
 Checked By: jdt
 Depth: 0-10 ft
 Elevation: ---

Soil Description: Moist, reddish brown clayey silt
 Remarks: ---

Estimated Specific Gravity: 2.76
 Initial Void Ratio: 1.00
 Final Void Ratio: 0.77

Liquid Limit: ---
 Plastic Limit: ---
 Plasticity Index: ---

Initial Height: 1.00 in
 Specimen Diameter: 2.50 in

Container ID	Before Consolidation		After Consolidation	
	Trimmings	Specimen+Ring	Specimen+Ring	Trimmings
	c	RING		n
Wt. Container + Wet Soil, gm	371.44	367.67	358.66	149.63
Wt. Container + Dry Soil, gm	274.13	327.62	327.62	118.72
Wt. Container, gm	8.14	216.48	216.48	8.04
Wt. Dry Soil, gm	265.99	111.14	111.14	110.68
Water Content, %	36.58	36.03	27.93	27.93
Void Ratio	---	1.00	0.77	---
Degree of Saturation, %	---	99.76	100.00	---
Dry Unit Weight, pcf	---	86.255	97.268	---

Note: Specific Gravity and Void Ratios are calculated assuming the degree of saturation equals 100% at the end of the test. Therefore, values may not represent actual values for the specimen.

CONSOLIDATION TEST DATA

Project: Middletown High School
 Boring No.: B-13
 Sample No.: ---
 Test No.: C3

Location: Middletown, CT
 Tested By: fy
 Test Date: 12/24/03
 Sample Type: Tube

Project No.: GTX-4739
 Checked By: jdt
 Depth: 8-10 ft
 Elevation: ---

Soil Description: Moist, reddish brown clayey silt
 Remarks: ---

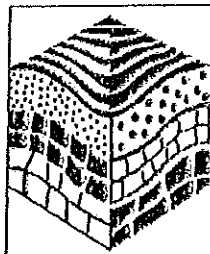
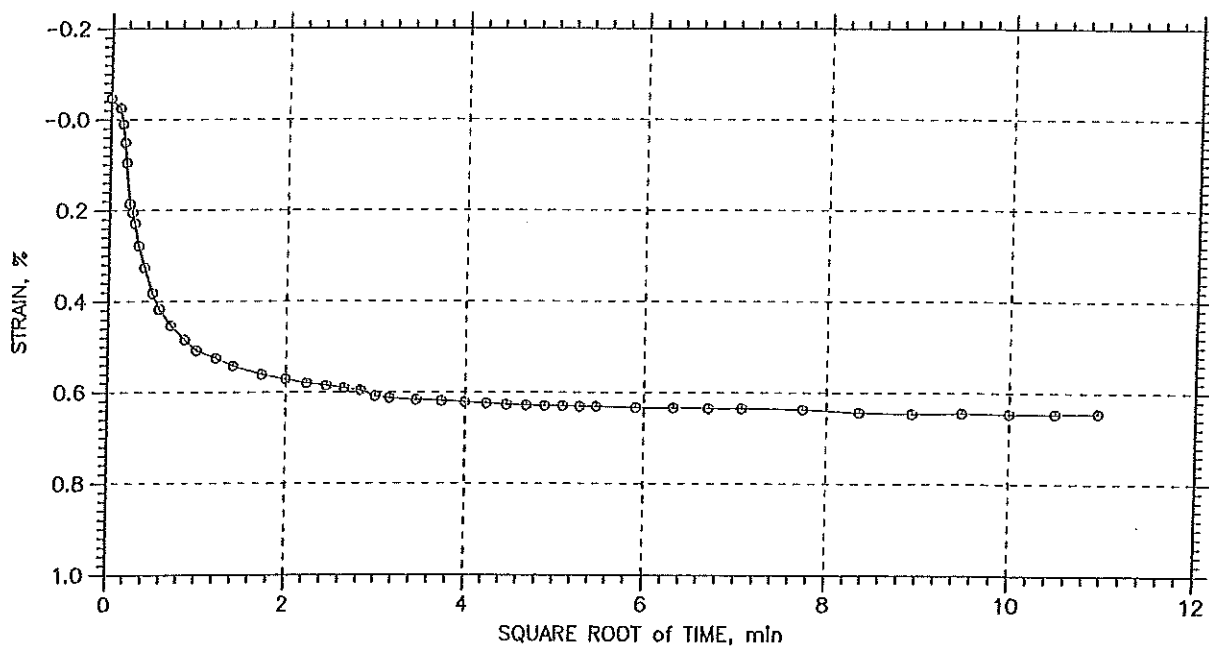
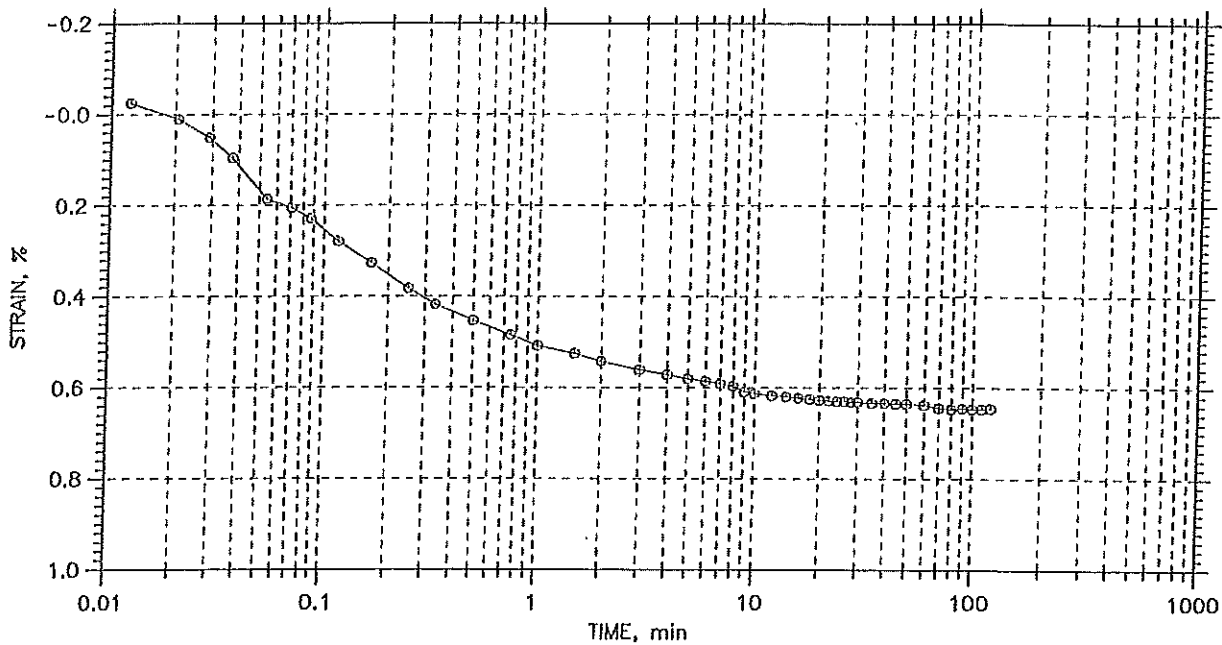
	Applied Stress tsf	Final Displacement in	Void Ratio	Strain at End %	T50 Fitting		Coefficient of Consolidation		
					Sq.Rt. min	Log min	Sq.Rt. in ² /sec	Log in ² /sec	Ave. in ² /sec
1	0.125	0.006453	0.983	0.65	0.1	0.1	5.45e-003	7.81e-003	6.42e-003
2	0.25	0.01372	0.969	1.37	0.2	0.1	4.05e-003	6.02e-003	4.84e-003
3	0.5	0.02452	0.947	2.45	0.2	0.1	5.27e-003	8.49e-003	6.50e-003
4	1	0.03622	0.924	3.62	0.1	0.1	7.68e-003	1.51e-002	1.02e-002
5	2	0.05003	0.896	5.00	0.1	0.0	1.43e-002	2.58e-002	1.84e-002
6	4	0.06724	0.862	6.72	0.0	0.0	1.92e-002	2.84e-002	2.29e-002
7	8	0.08792	0.821	8.79	0.0	0.0	1.84e-002	3.85e-002	2.49e-002
8	16	0.1119	0.773	11.19	0.0	0.0	2.75e-002	4.60e-002	3.44e-002
9	32	0.1402	0.717	14.02	0.0	0.0	2.71e-002	4.86e-002	3.48e-002
10	8	0.1333	0.730	13.33	0.0	0.0	1.32e-001	0.00e+000	1.32e-001
11	2	0.1241	0.749	12.41	0.0	0.0	8.10e-002	0.00e+000	8.10e-002
12	0.5	0.1132	0.770	11.32	0.1	0.0	6.01e-003	1.47e-002	8.54e-003

CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 1 of 12

Stress: 0.125 tsf



Project: Middletown High School	Location: Middletown, CT	Project No.: GTX-4739
Boring No.: B-13	Tested By: fy	Checked By: jdt
Sample No.: ---	Test Date: 12/24/03	Depth: 8-10 ft
Test No.: C3	Sample Type: Tube	Elevation: ---
Description: Moist, reddish brown clayey silt		
Remarks: ---		

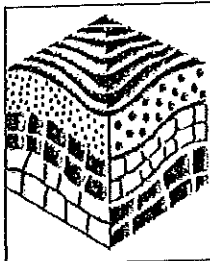
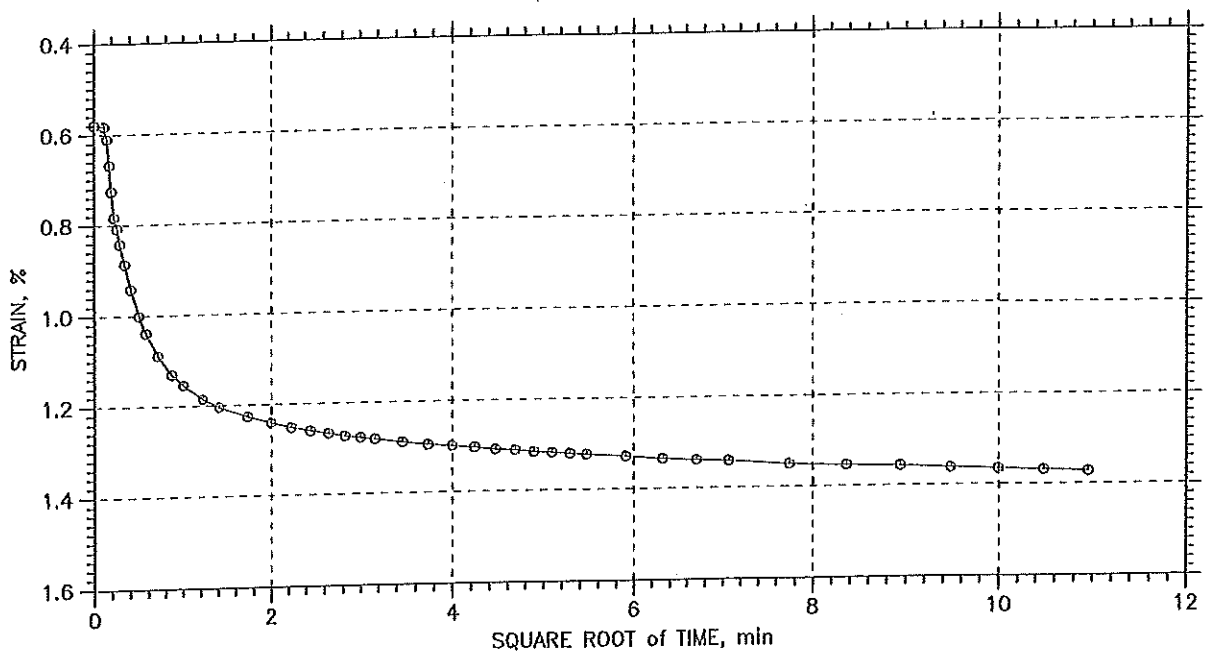
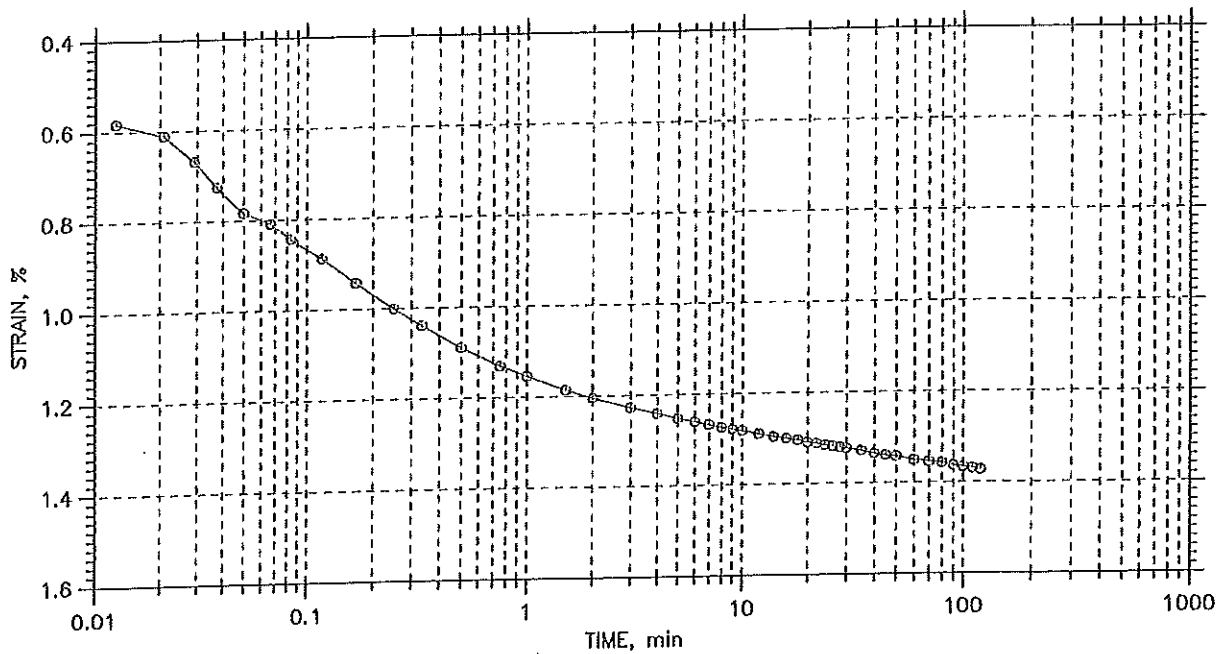
Fri, 02-JAN-2004 09:31:29

CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 2 of 12

Stress: 0.25 tsf



Project: Middletown High School	Location: Middletown, CT	Project No.: GTX-4739
Boring No.: B-13	Tested By: fy	Checked By: jdl
Sample No.: ---	Test Date: 12/24/03	Depth: 8-10 ft
Test No.: C3	Sample Type: Tube	Elevation: ---
Description: Moist, reddish brown clayey silt		
Remarks: ---		

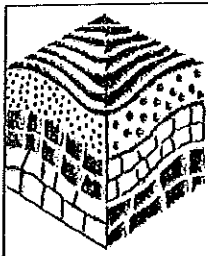
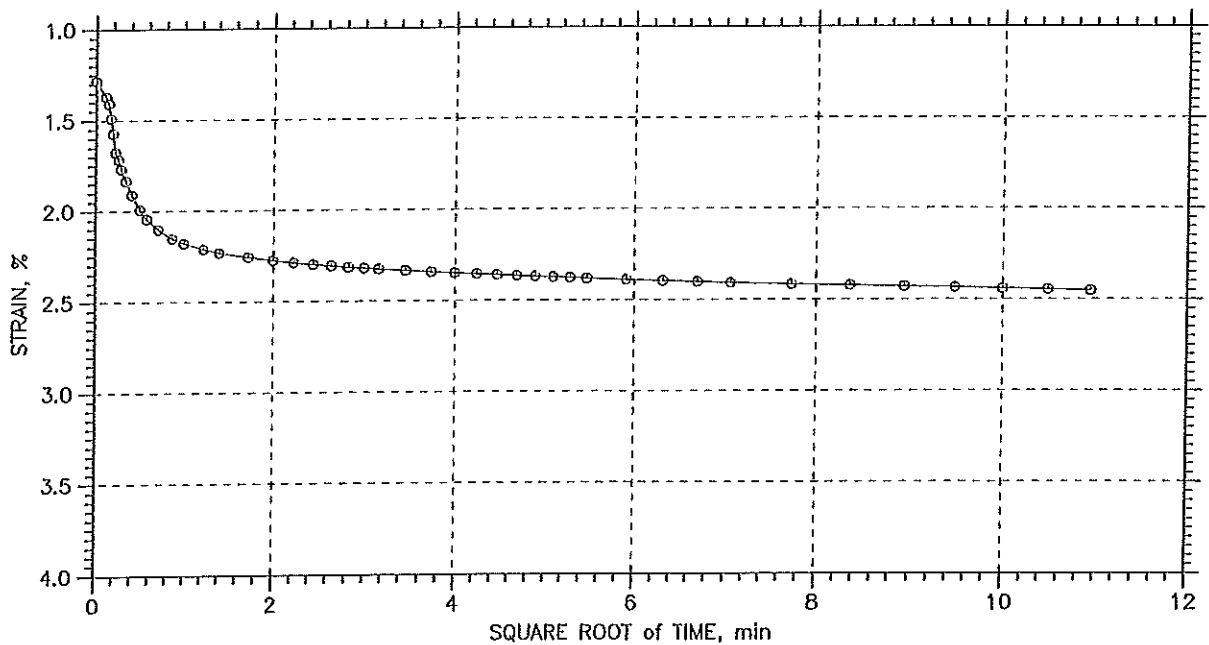
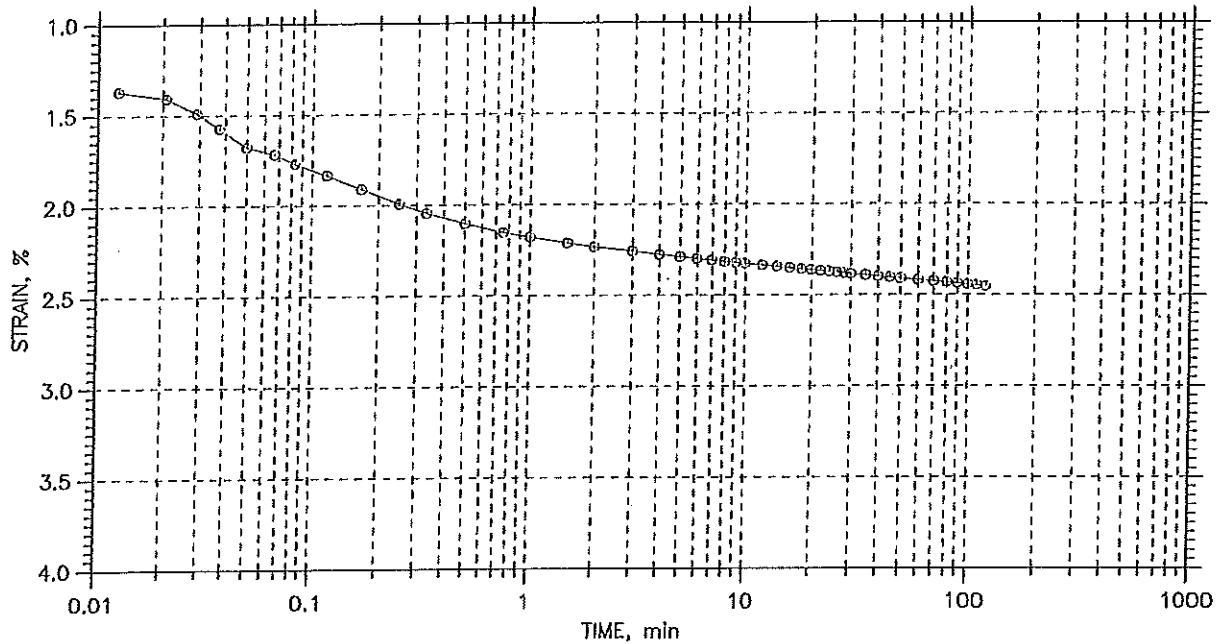
Fri, 02-JAN-2004 09:31:29

CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 3 of 12

Stress: 0.5 tsf



Project: Middletown High School	Location: Middletown, CT	Project No.: GTX-4739
Boring No.: B-13	Tested By: fy	Checked By: jdt
Sample No.: ---	Test Date: 12/24/03	Depth: 8-10 ft
Test No.: C3	Sample Type: Tube	Elevation: ---
Description: Moist, reddish brown clayey silt		
Remarks: ---		

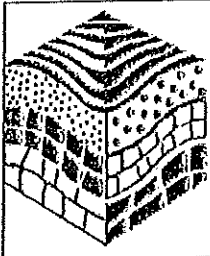
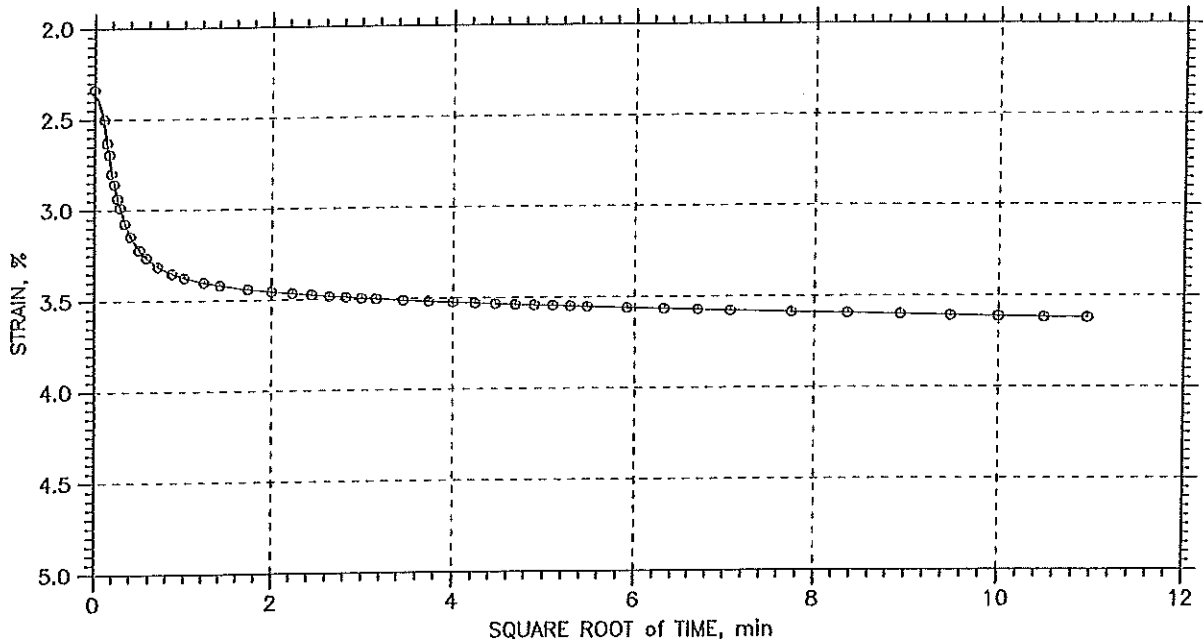
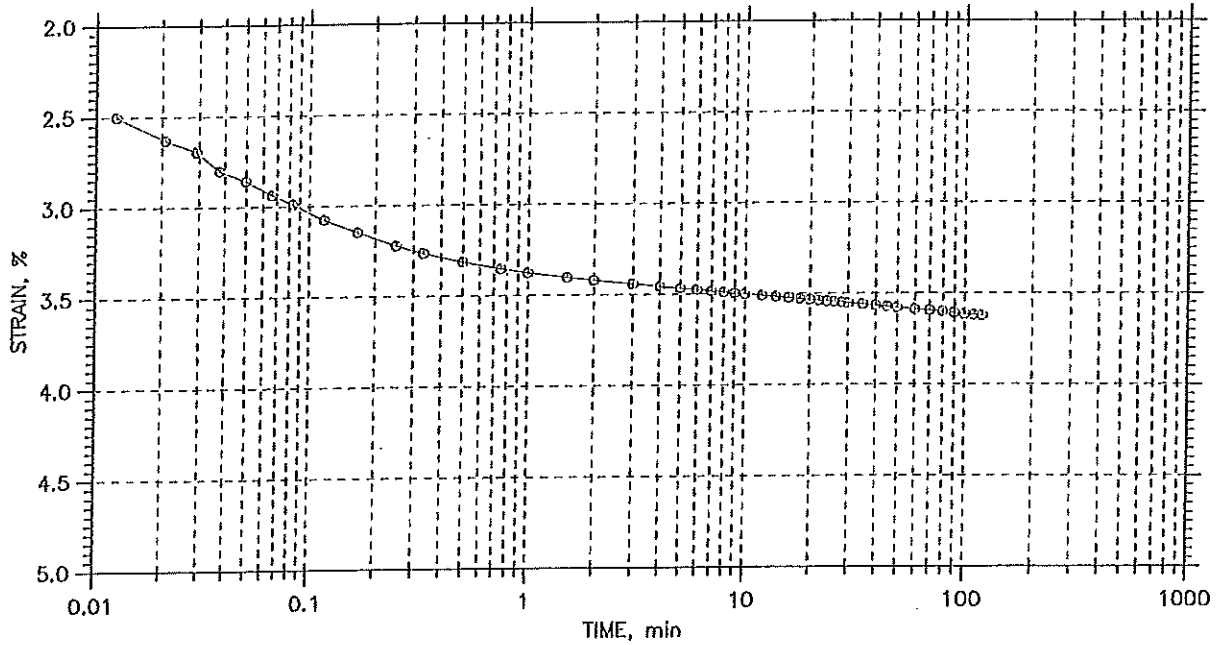
Fri, 02-JAN-2004 09:31:30

CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 4 of 12

Stress: 1. tsf



Project: Middletown High School	Location: Middletown, CT	Project No.: GTX-4739
Boring No.: B-13	Tested By: fy	Checked By: jdt
Sample No.: ---	Test Date: 12/24/03	Depth: 8-10 ft
Test No.: C3	Sample Type: Tube	Elevation: ---
Description: Moist, reddish brown clayey silt		
Remarks: ---		

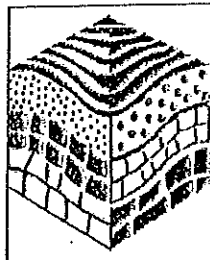
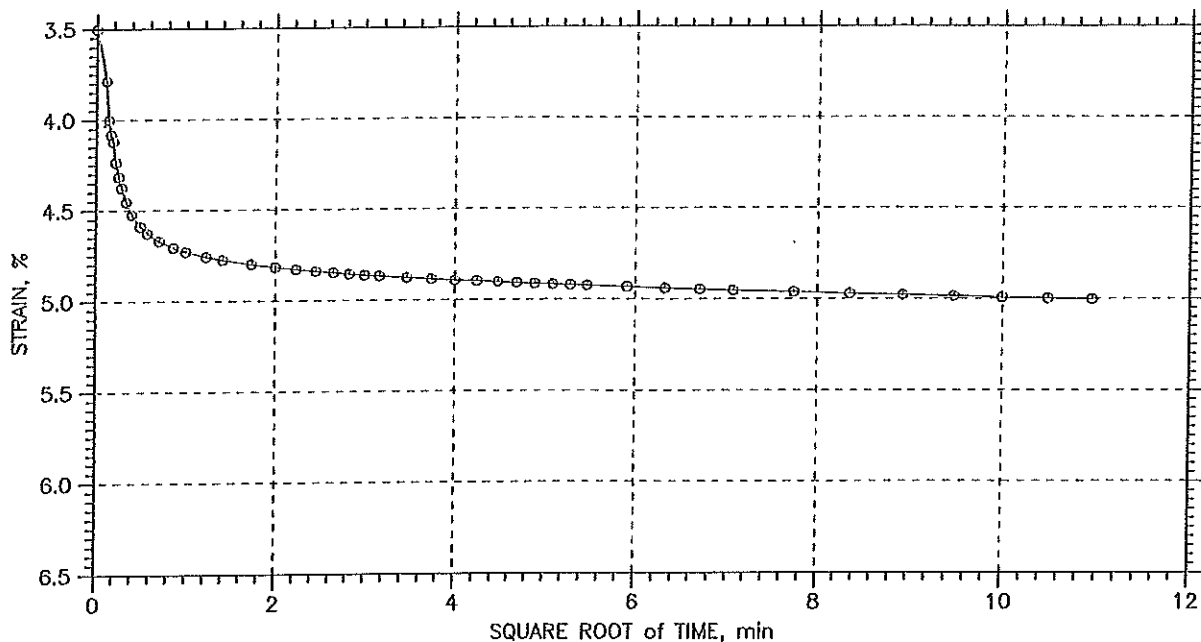
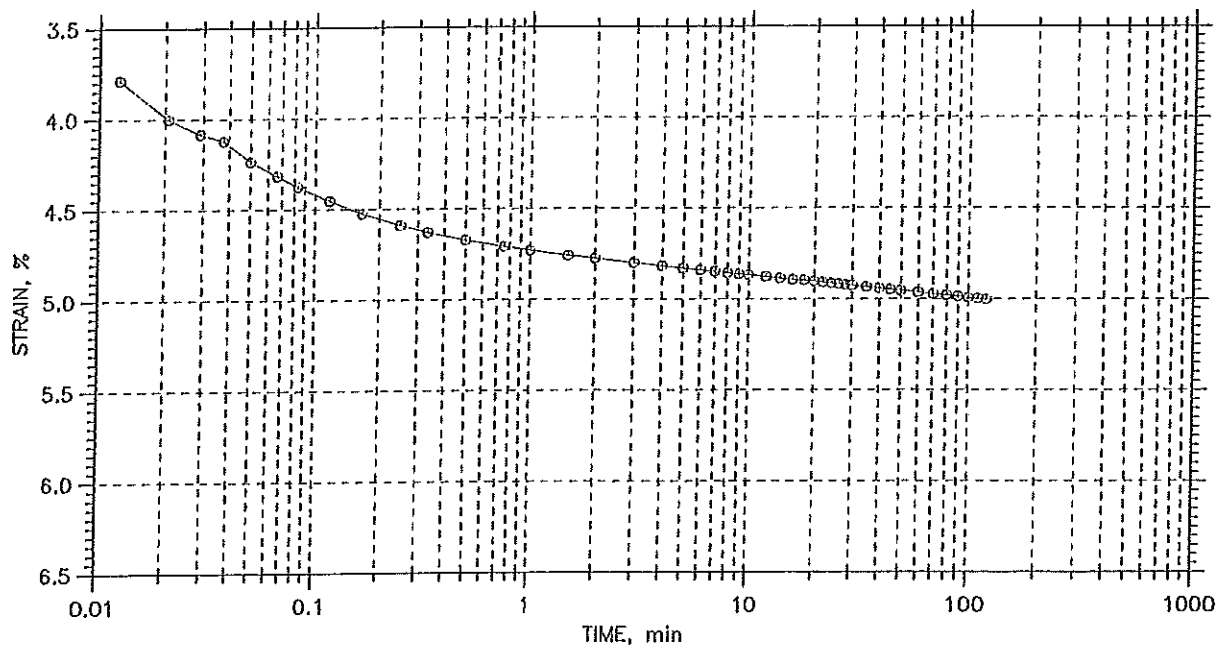
Fri, 02-JAN-2004 09:31:31

CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 5 of 12

Stress: 2. tsf



Project: Middletown High School	Location: Middletown, CT	Project No.: GTX-4739
Boring No.: B-13	Tested By: fy	Checked By: jdt
Sample No.: ---	Test Date: 12/24/03	Depth: 8-10 ft
Test No.: C3	Sample Type: Tube	Elevation: ---
Description: Moist, reddish brown clayey silt		
Remarks: ---		

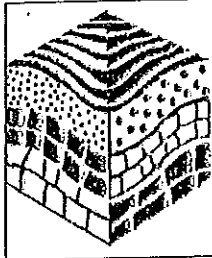
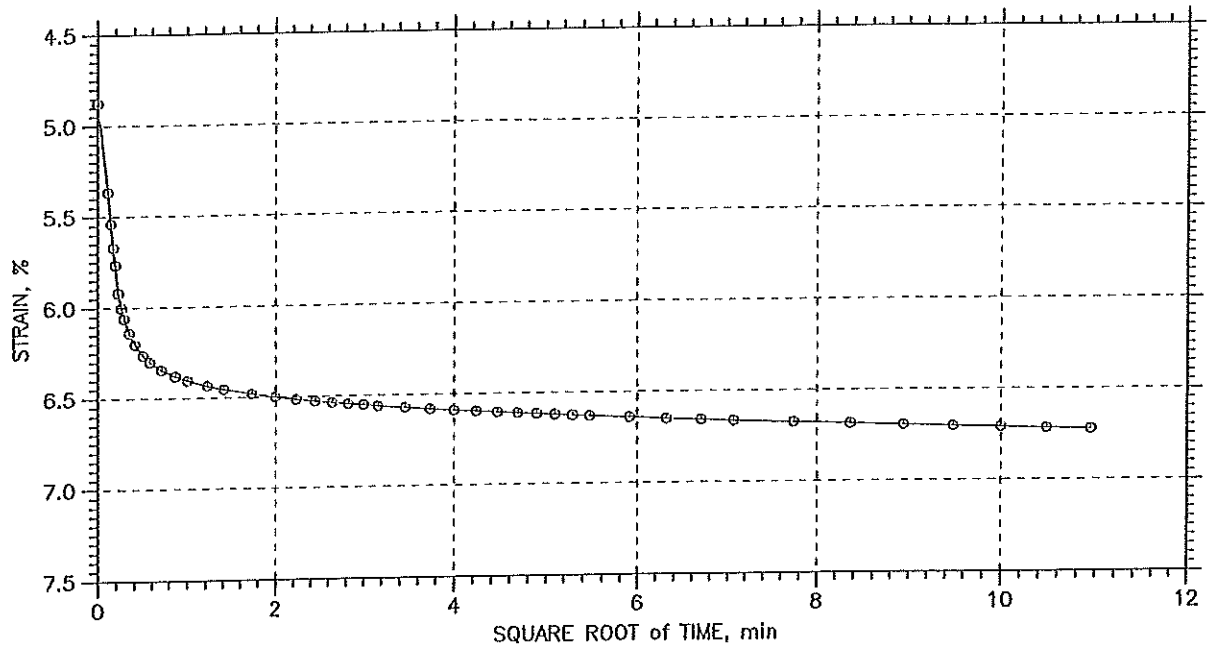
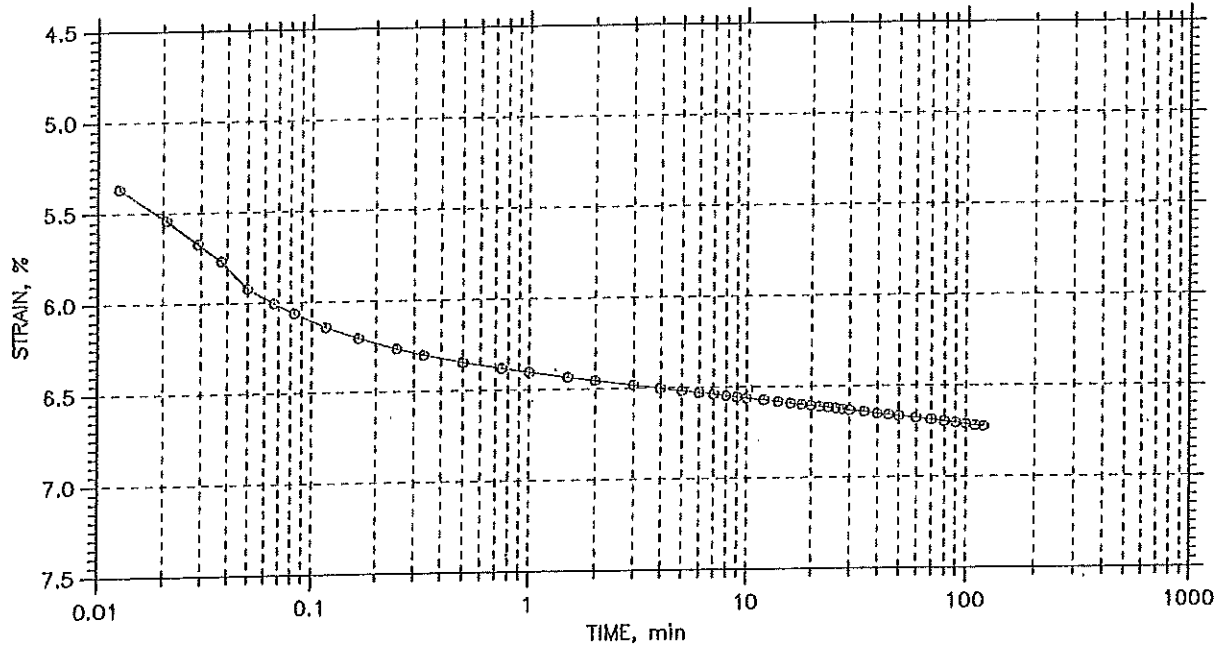
Fri, 02-JAN-2004 09:31:32

CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 6 of 12

Stress: 4. tsf



Project: Middletown High School	Location: Middletown, CT	Project No.: GTX-4739
Boring No.: B-13	Tested By: fy	Checked By: jdt
Sample No.: ---	Test Date: 12/24/03	Depth: 8-10 ft
Test No.: C3	Sample Type: Tube	Elevation: ---
Description: Moist, reddish brown clayey silt		
Remarks: ---		

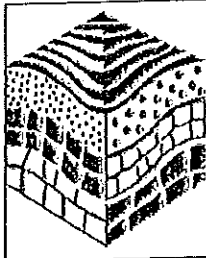
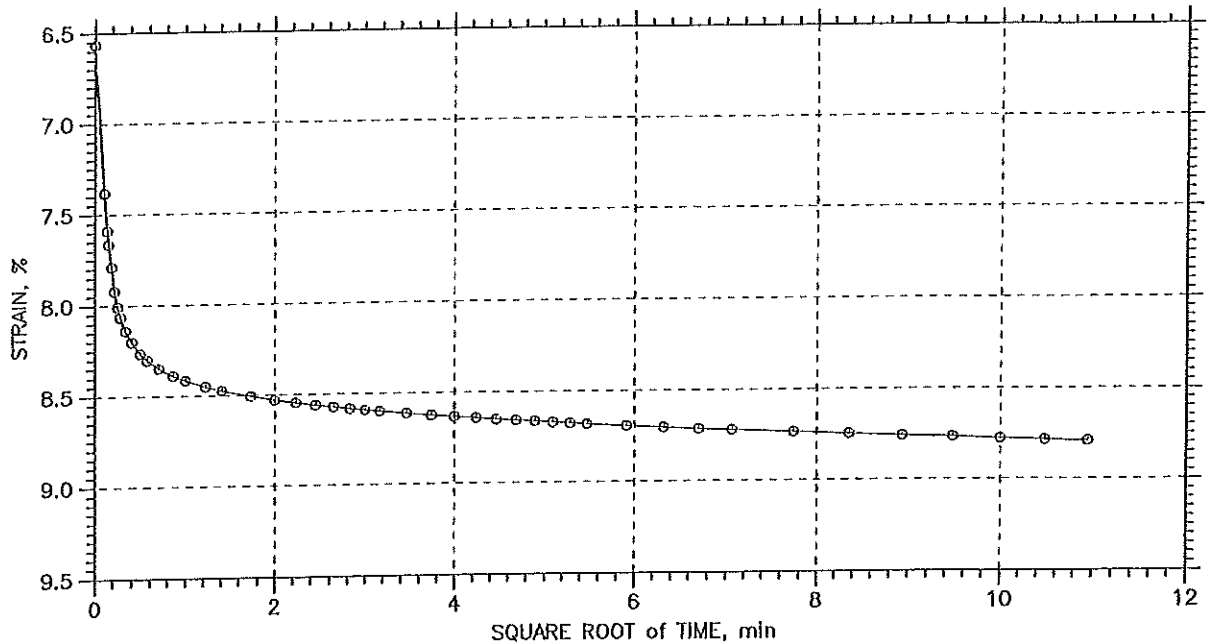
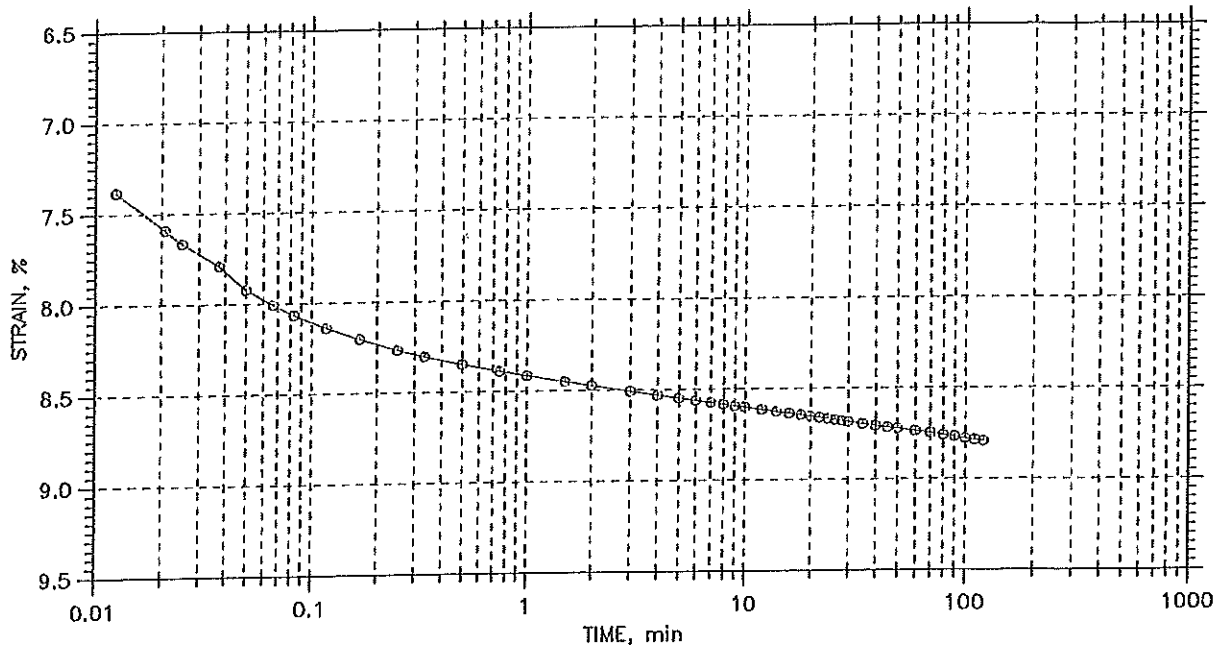
Fri, 02-JAN-2004 09:31:32

CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 7 of 12

Stress: 8. tsf



Project: Middletown High School	Location: Middletown, CT	Project No.: GTX-4739
Boring No.: B-13	Tested By: fy	Checked By: jdt
Sample No.: ---	Test Date: 12/24/03	Depth: 8-10 ft
Test No.: C3	Sample Type: Tube	Elevation: ---
Description: Moist, reddish brown clayey silt		
Remarks: ---		

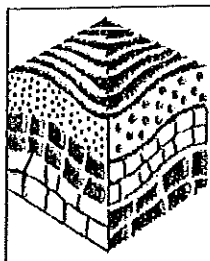
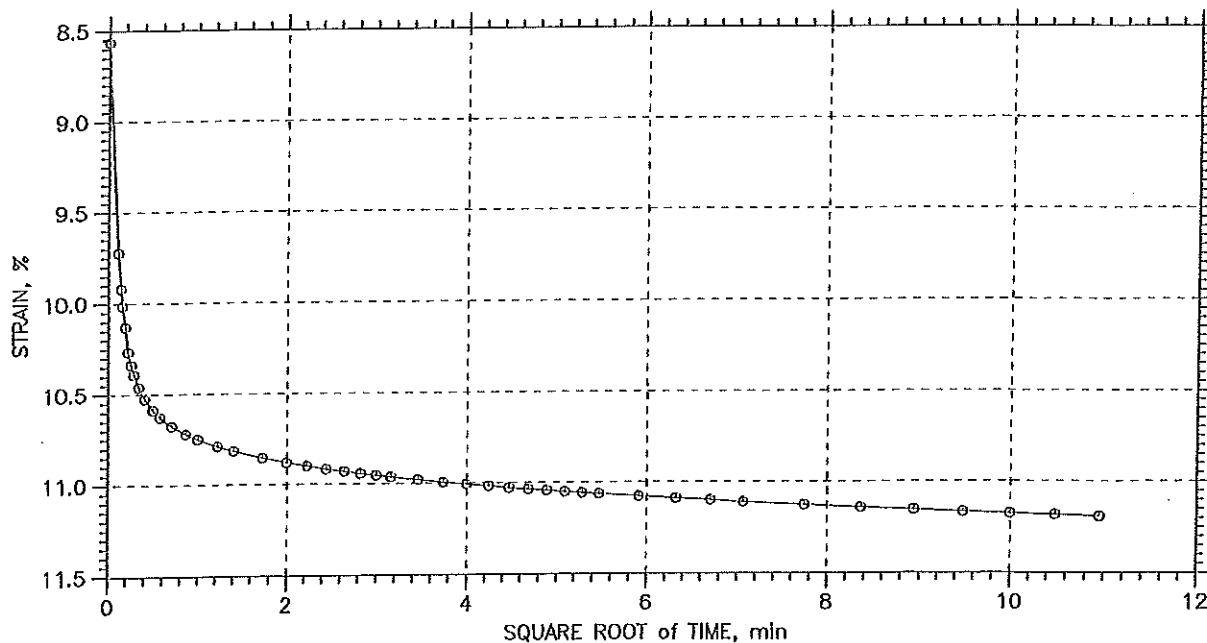
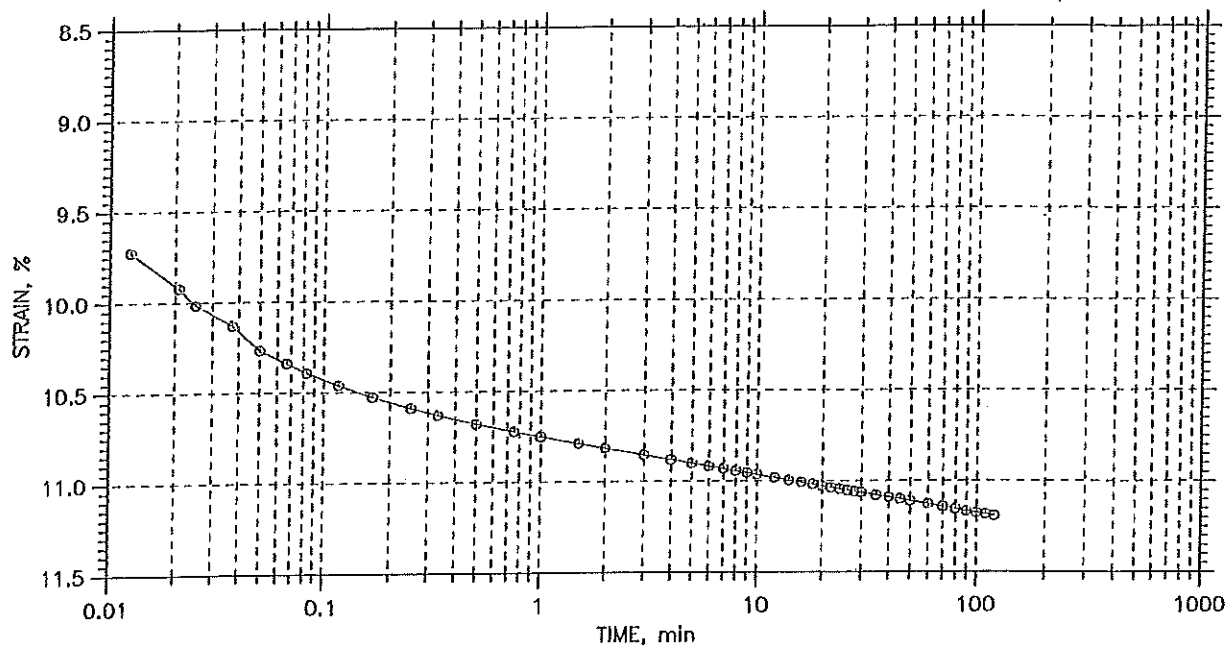
Fri, 02-JAN-2004 09:31:33

CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 8 of 12

Stress: 16. tsf



Project: Middletown High School	Location: Middletown, CT	Project No.: GTX-4739
Boring No.: B-13	Tested By: fy	Checked By: jdt
Sample No.: ---	Test Date: 12/24/03	Depth: 8-10 ft
Test No.: C3	Sample Type: Tube	Elevation: ---
Description: Moist, reddish brown clayey silt		
Remarks: ---		

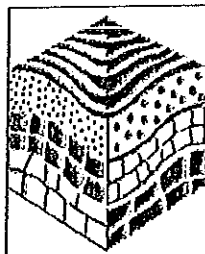
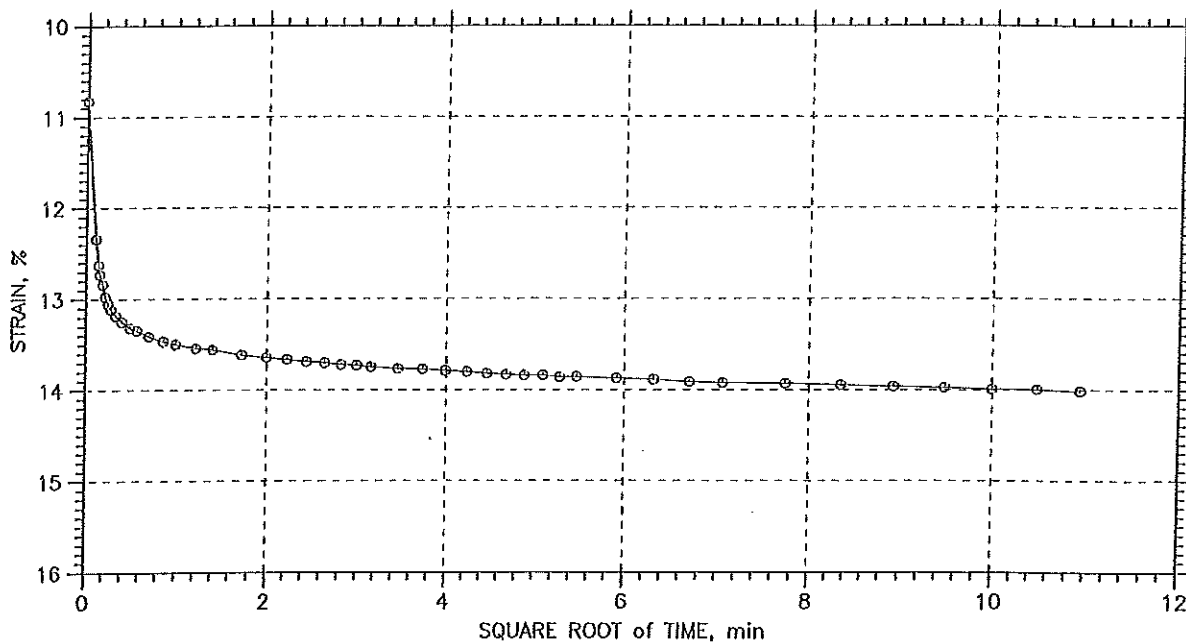
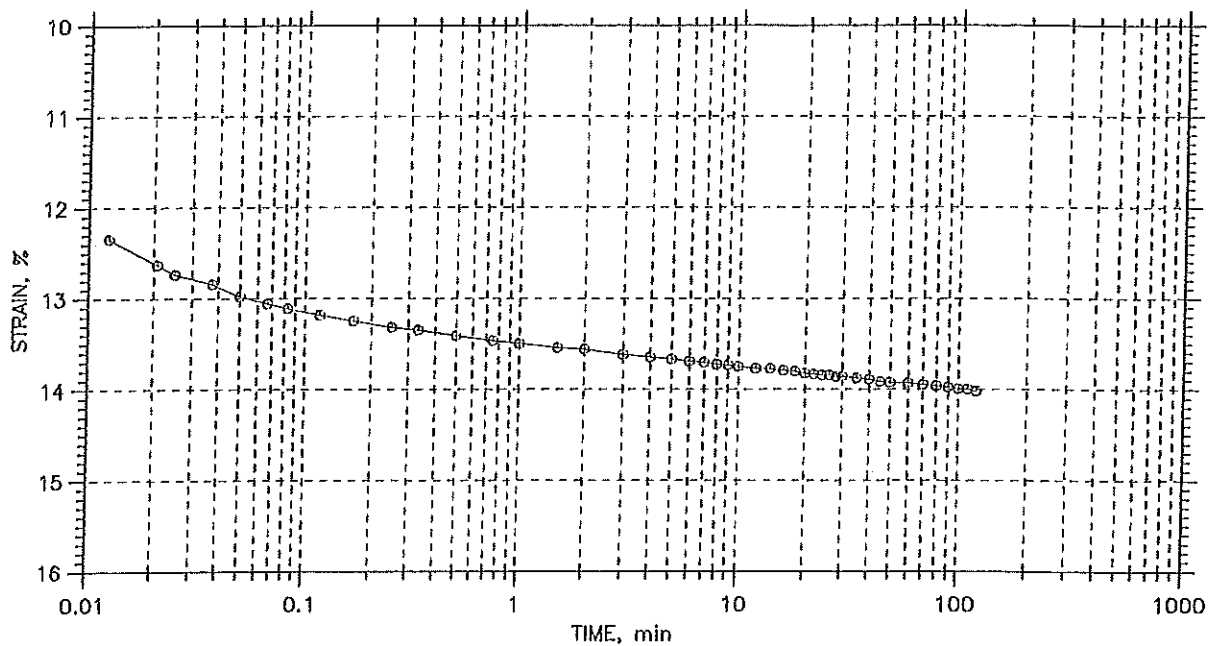
Fri, 02-JAN-2004 09:31:34

CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 9 of 12

Stress: 32. tsf



Project: Middletown High School	Location: Middletown, CT	Project No.: GTX-4739
Boring No.: B-13	Tested By: fy	Checked By: jdl
Sample No.: ---	Test Date: 12/24/03	Depth: 8-10 ft
Test No.: C3	Sample Type: Tube	Elevation: ---
Description: Moist, reddish brown clayey silt		
Remarks: ---		

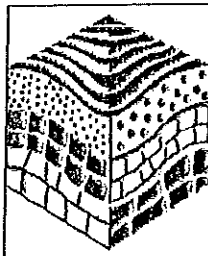
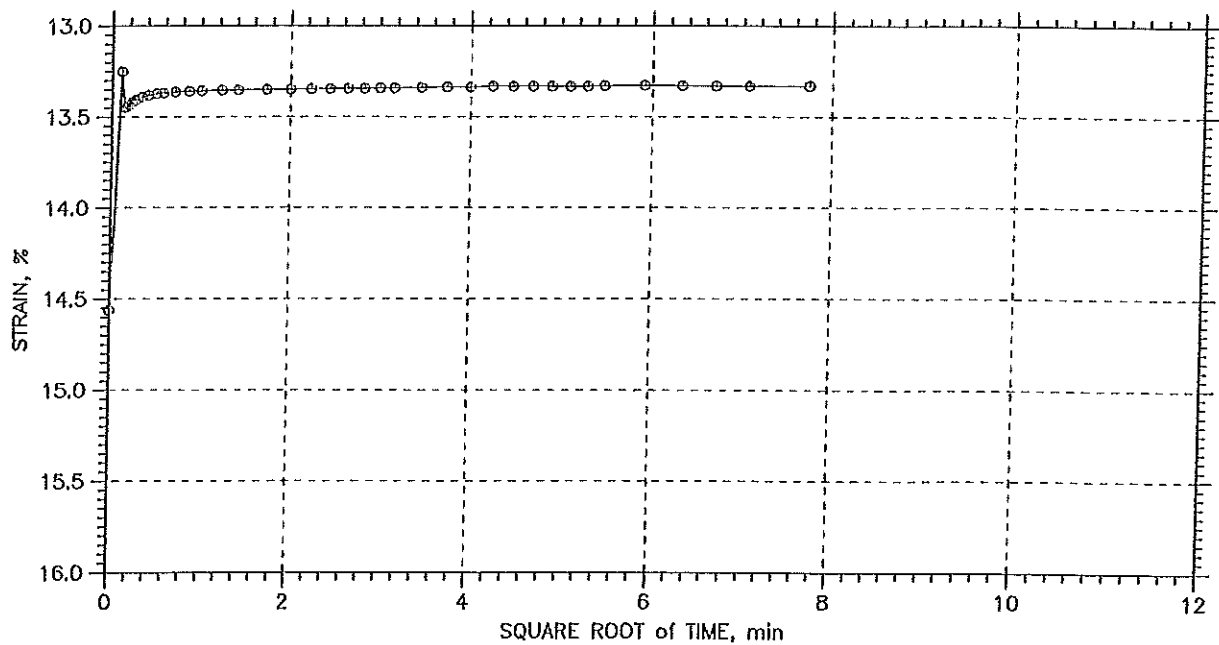
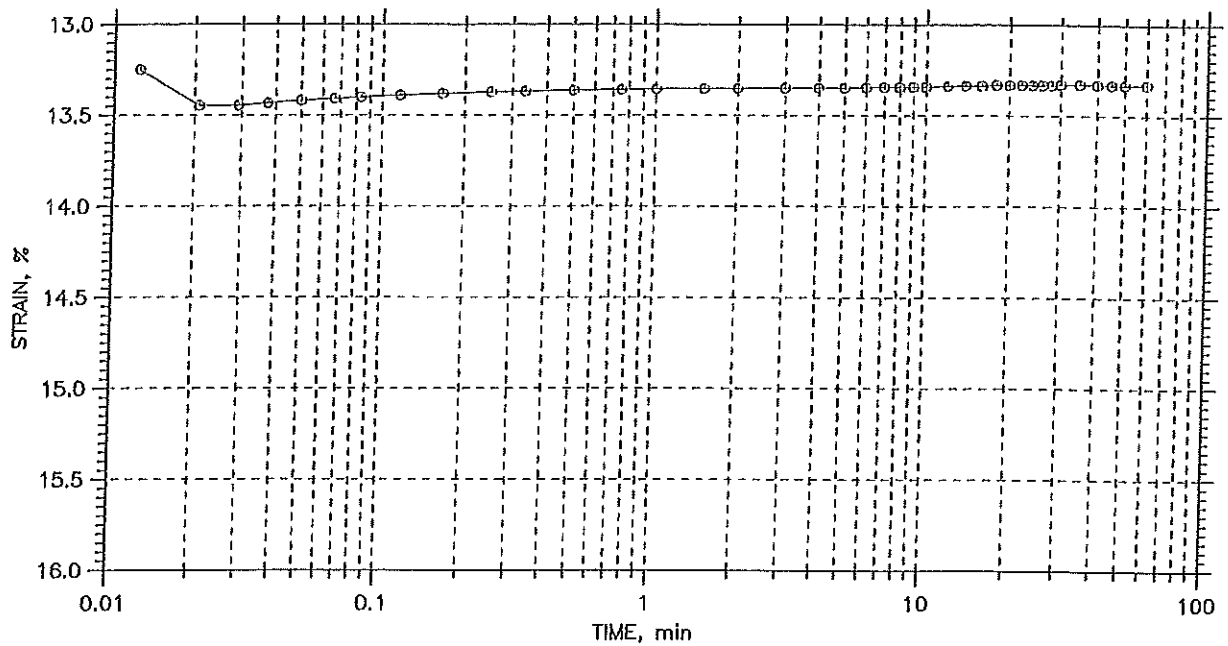
Fri, 02-JAN-2004 09:31:35

CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 10 of 12

Stress: 8. tsf



Project: Middletown High School	Location: Middletown, CT	Project No.: GTX-4739
Boring No.: B-13	Tested By: fy	Checked By: jdt
Sample No.: ---	Test Date: 12/24/03	Depth: 8-10 ft
Test No.: C3	Sample Type: Tube	Elevation: ---
Description: Moist, reddish brown clayey silt		
Remarks: ---		

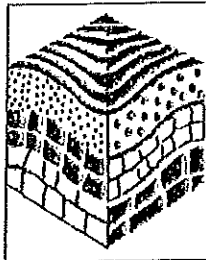
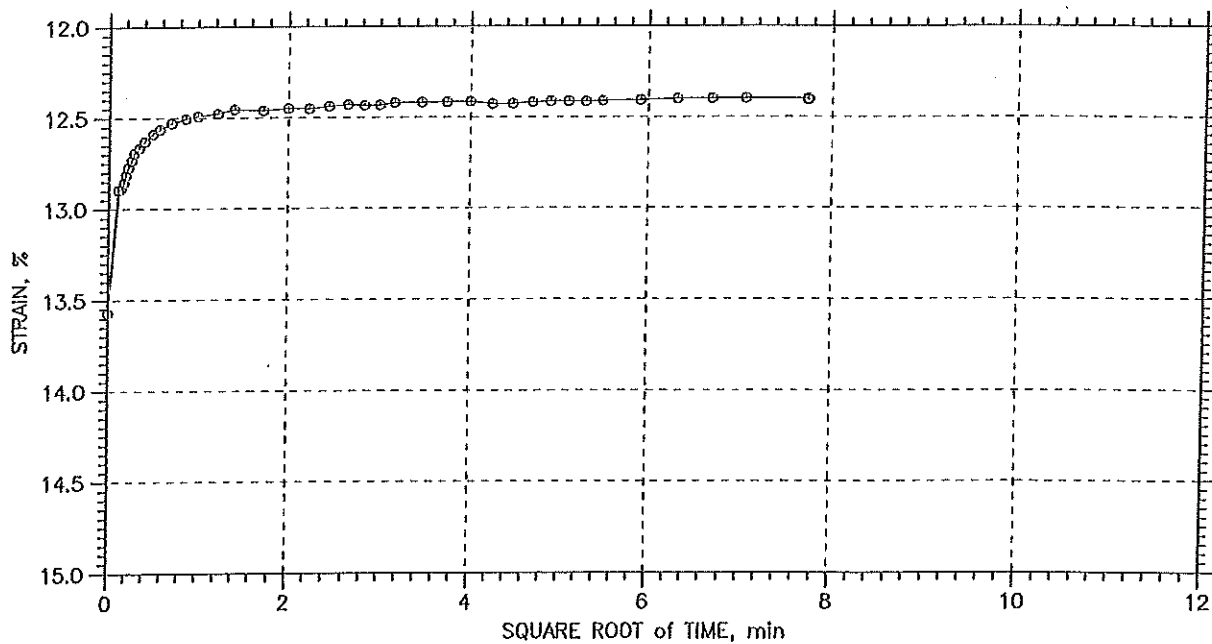
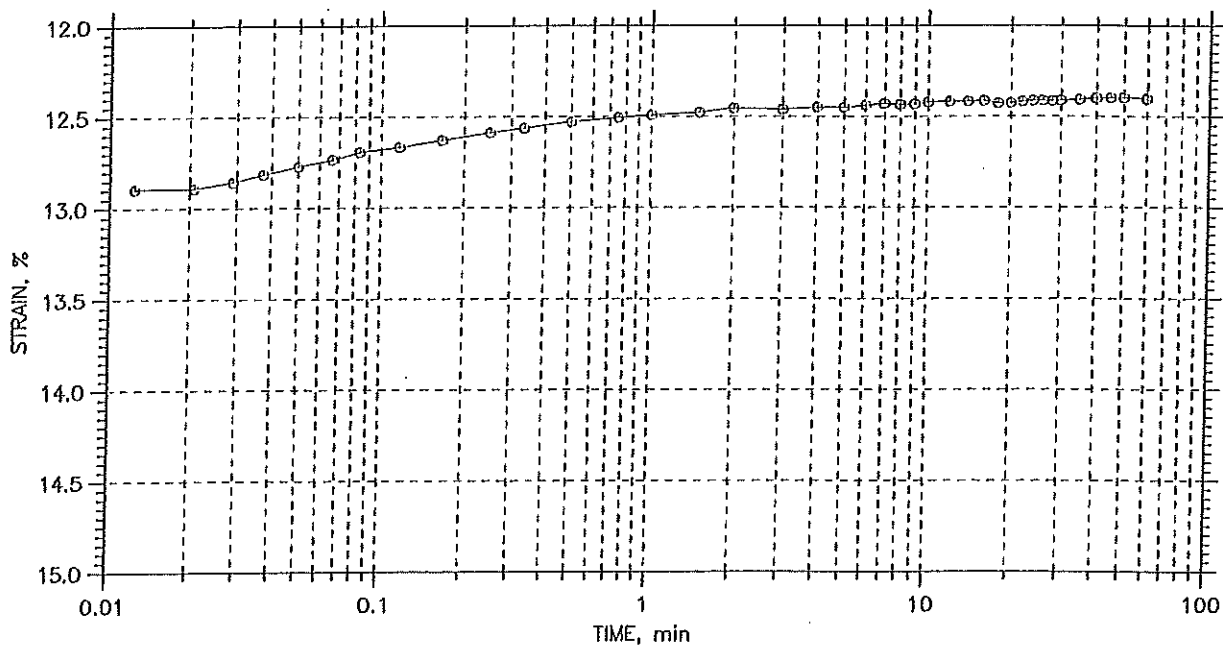
Fri, 02-JAN-2004 09:31:36

CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 11 of 12

Stress: 2. tsf



Project: Middletown High School	Location: Middletown, CT	Project No.: GTX-4739
Boring No.: B-13	Tested By: fy	Checked By: jdt
Sample No.: ---	Test Date: 12/24/03	Depth: 8-10 ft
Test No.: C3	Sample Type: Tube	Elevation: ---
Description: Moist, reddish brown clayey silt		
Remarks: ---		

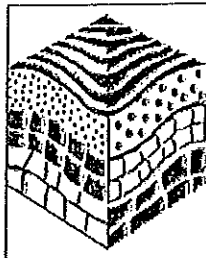
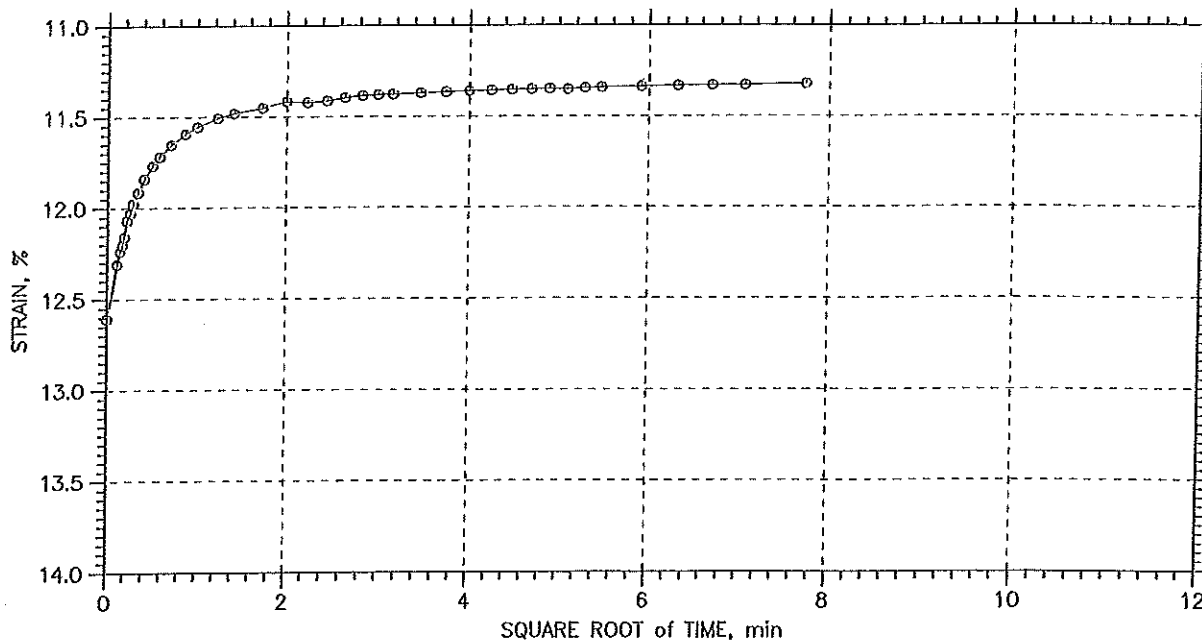
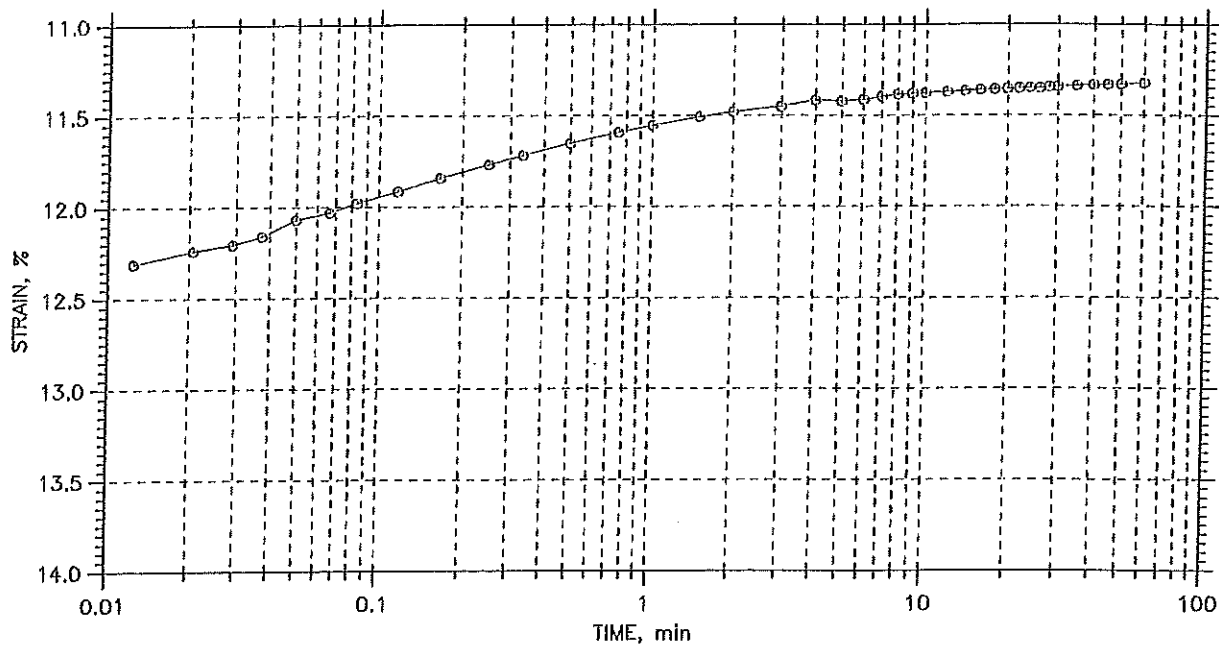
Fri, 02-JAN-2004 09:31:36

CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 12 of 12

Stress: 0.5 tsf



Project: Middletown High School	Location: Middletown, CT	Project No.: GTX-4739
Boring No.: B-13	Tested By: fy	Checked By: jdl
Sample No.: ---	Test Date: 12/24/03	Depth: 8-10 ft
Test No.: C3	Sample Type: Tube	Elevation: ---
Description: Moist, reddish brown clayey silt		
Remarks: ---		

Fri, 02-JAN-2004 09:31:37

Geotechnical Test Report

Middletown High School Project Middletown, CT

Prepared for:

HRP Associates, Inc.

Plainville, CT

Prepared by:

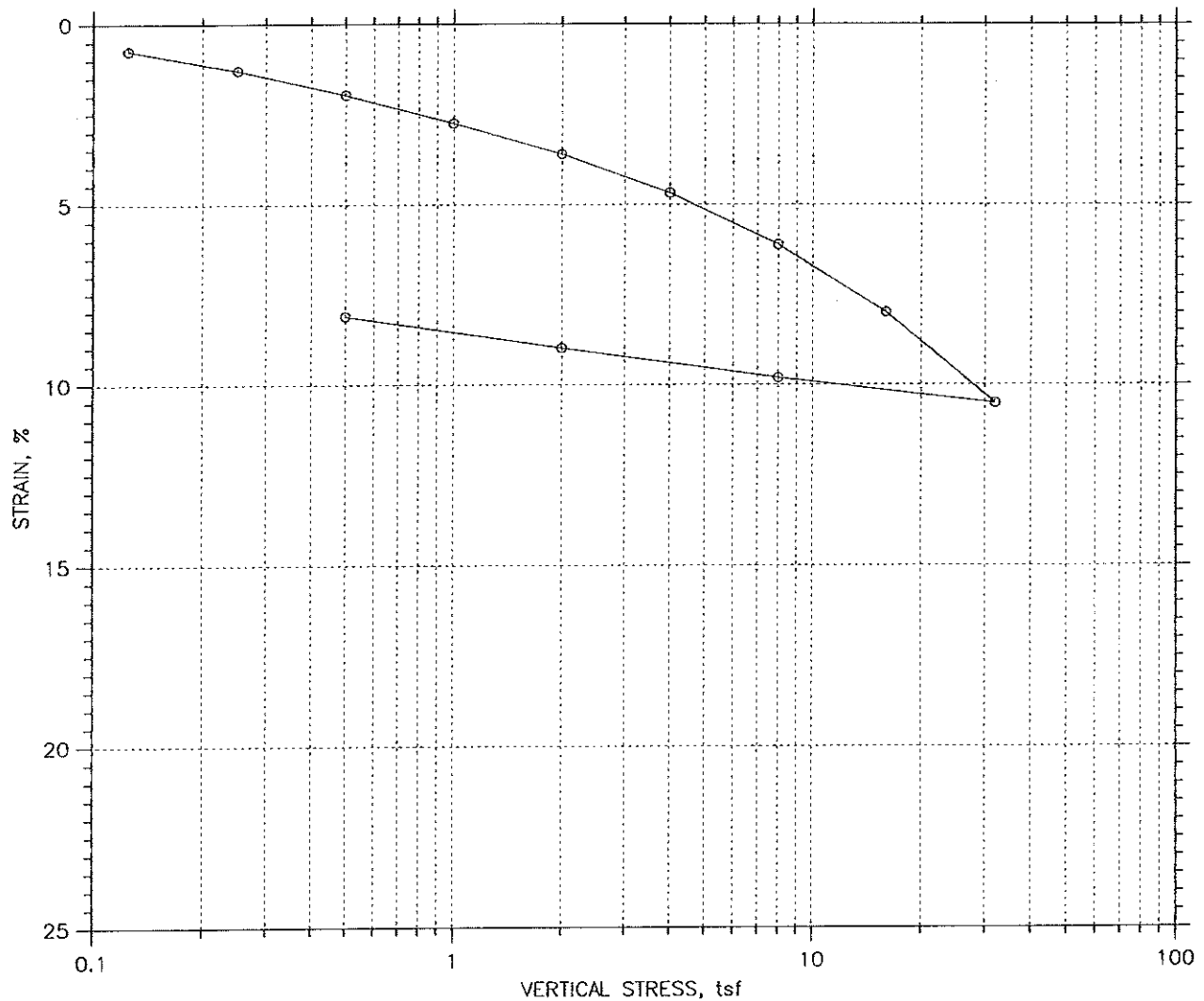


GeoTesting Express, Inc.

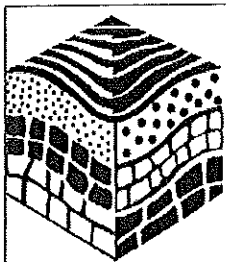
Boxborough, MA

June 23, 2004

CONSOLIDATION TEST DATA SUMMARY REPORT



				Before Test	After Test	
Overburden Pressure: 0 tsf				Water Content, %	32.22	26.82
Preconsolidation Pressure: 0 tsf				Dry Unit Weight, pcf	90.26	98.22
Compression Index: 0				Saturation, %	99.37	100.00
Diameter: 2.5 in		Height: 1 in		Void Ratio	0.88	0.73
LL: ---	PL: ---	Pt: ---	GS: 2.72			



Project: Middletown H.S	Location: Middletown, CT	Project No.: GTX-4739
Boring No.: ---	Tested By: fy	Checked By: jdt
Sample No.: B22A	Test Date: 06/17/04	Depth: 5-7 ft
Test No.: C4	Sample Type: Tube	Elevation: ---
Description: Moist, brown silt with clay		
Remarks: ---		

CONSOLIDATION TEST DATA

Project: Middletown H.S
Boring No.: ---
Sample No.: B22A
Test No.: C4

Location: Middletown, CT
Tested By: fy
Test Date: 06/17/04
Sample Type: Tube

Project No.: GTX-4739
Checked By: jdt
Depth: 5-7 ft
Elevation: ---

Soil Description: Moist, brown silt with clay
Remarks: ---

Estimated Specific Gravity: 2.72
Initial Void Ratio: 0.88
Final Void Ratio: 0.73

Liquid Limit: ---
Plastic Limit: ---
Plasticity Index: ---

Initial Height: 1.00 in
Specimen Diameter: 2.50 in

	Before Consolidation		After Consolidation	
	Trimmings	Specimen+Ring	Specimen+Ring	Trimmings
Container ID	808	RING		t
Wt. Container + Wet Soil, gm	364.52	362.87	356.59	157.09
Wt. Container + Dry Soil, gm	275.11	325.4	325.4	125.61
Wt. Container, gm	8.16	209.1	209.1	8.22
Wt. Dry Soil, gm	266.95	116.3	116.3	117.39
Water Content, %	33.49	32.22	26.82	26.82
Void Ratio	---	0.88	0.73	---
Degree of Saturation, %	---	99.37	100.00	---
Dry Unit Weight, pcf	---	90.26	98.216	---

Note: Specific Gravity and Void Ratios are calculated assuming the degree of saturation equals 100% at the end of the test. Therefore, values may not represent actual values for the specimen.

CONSOLIDATION TEST DATA

Project: Middletown H.S
Boring No.: ---
Sample No.: B22A
Test No.: C4

Location: Middletown, CT
Tested By: fy
Test Date: 06/17/04
Sample Type: Tube

Project No.: GTX-4739
Checked By: jdt
Depth: 5-7 ft
Elevation: ---

Soil Description: Moist, brown silt with clay
Remarks: ---

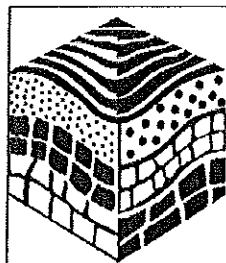
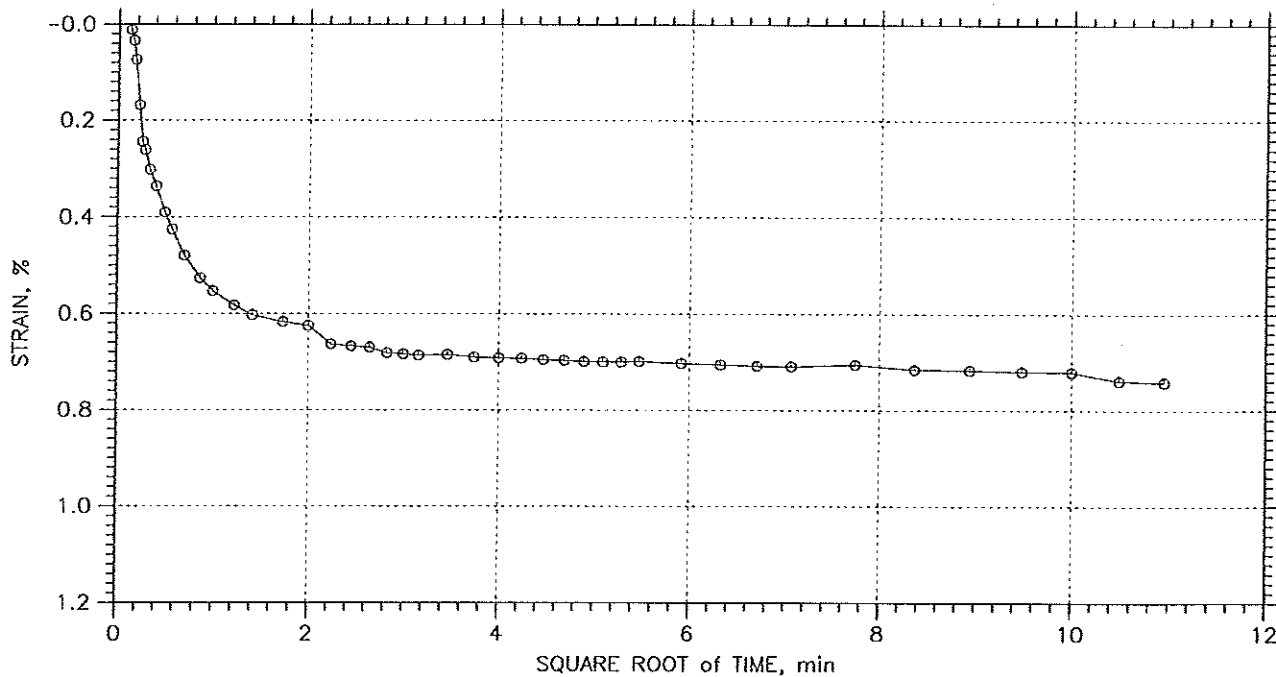
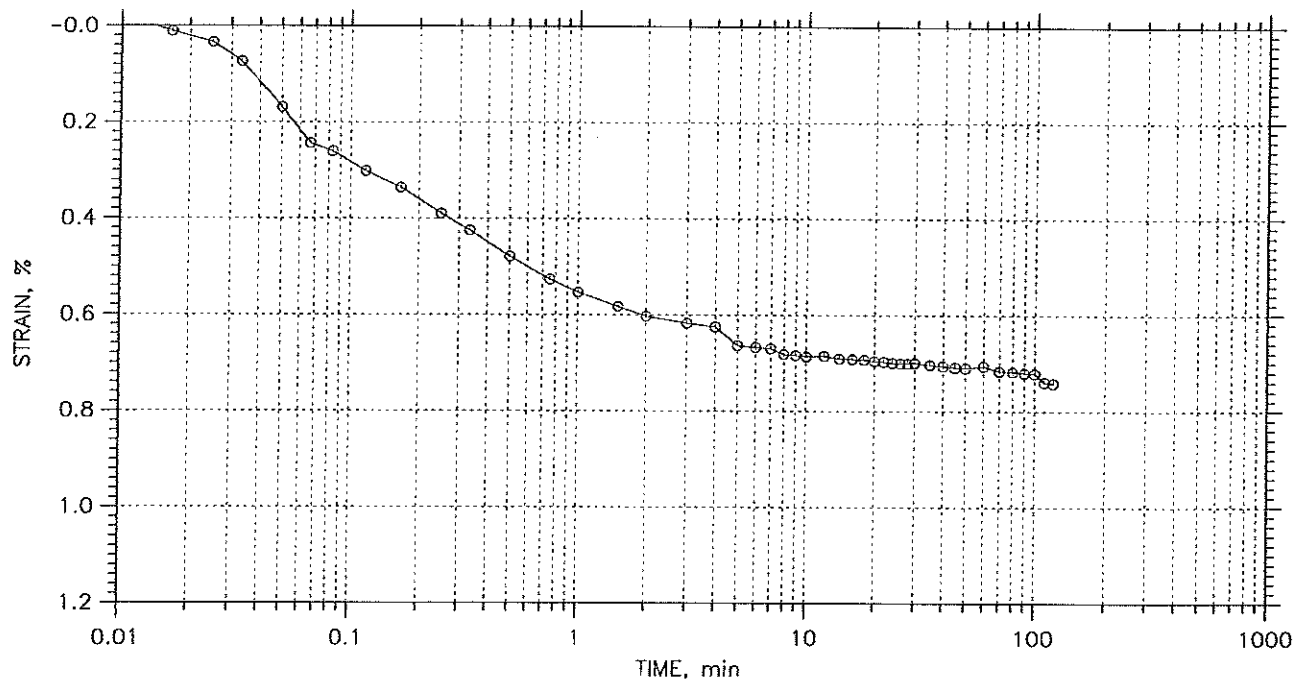
	Applied Stress tsf	Final Displacement in	Void Ratio	Strain at End %	T50 Fitting		Coefficient of Consolidation		
					Sq.Rt. min	Log min	Sq.Rt. in ² /sec	Log in ² /sec	Ave. in ² /sec
1	0.125	0.007416	0.868	0.74	0.2	0.1	3.88e-003	7.69e-003	5.16e-003
2	0.25	0.01287	0.858	1.29	0.2	0.1	4.83e-003	6.86e-003	5.67e-003
3	0.5	0.01968	0.845	1.97	0.1	0.1	7.56e-003	1.17e-002	9.20e-003
4	1	0.02745	0.831	2.75	0.1	0.0	1.56e-002	2.21e-002	1.83e-002
5	2	0.03607	0.814	3.61	0.0	0.0	1.97e-002	2.35e-002	2.14e-002
6	4	0.04685	0.794	4.69	0.0	0.0	2.89e-002	2.79e-002	2.84e-002
7	8	0.06113	0.767	6.11	0.0	0.0	4.03e-002	2.92e-002	3.38e-002
8	16	0.07998	0.732	8.00	0.0	0.0	5.76e-002	0.00e+000	5.76e-002
9	32	0.1051	0.684	10.51	0.0	0.0	5.65e-002	0.00e+000	5.65e-002
10	8	0.09816	0.698	9.82	0.0	0.0	7.72e-002	0.00e+000	7.72e-002
11	2	0.08989	0.713	8.99	0.0	0.0	5.18e-002	0.00e+000	5.18e-002
12	0.5	0.08101	0.730	8.10	0.1	0.0	1.37e-002	1.66e-002	1.50e-002

CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 1 of 12

Stress: 0.125 tsf



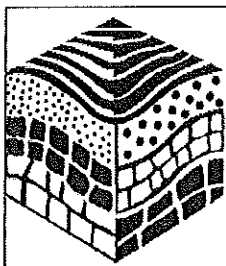
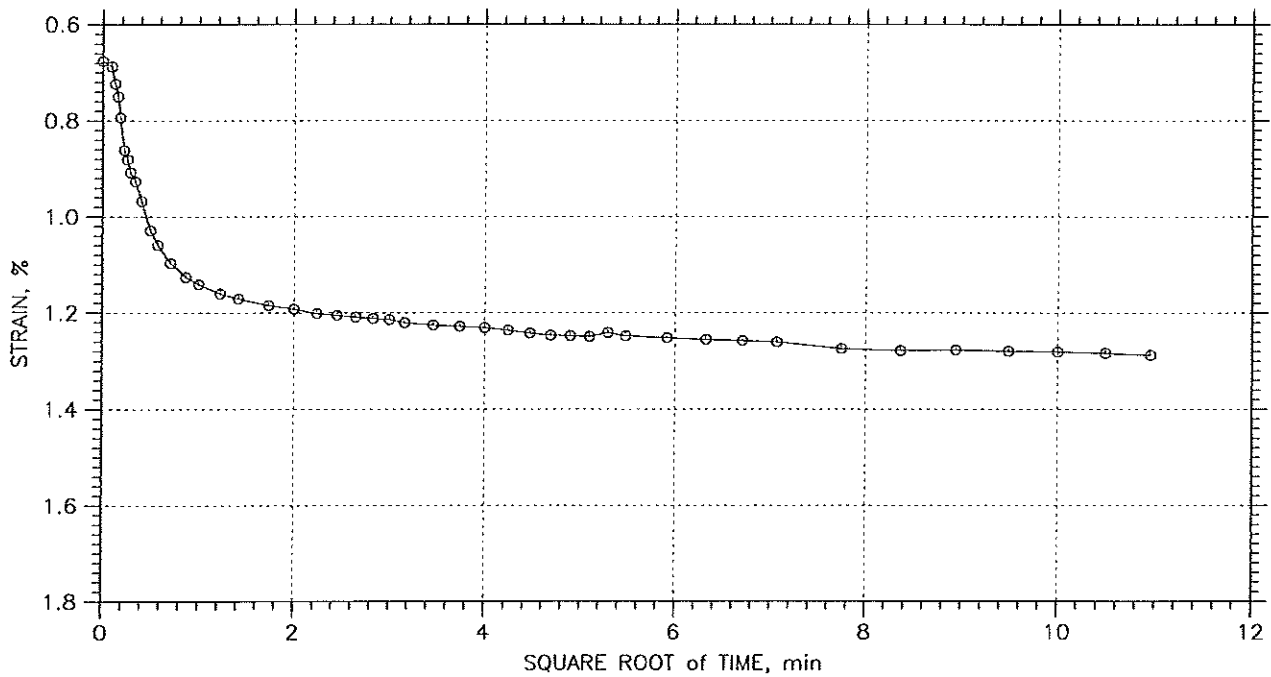
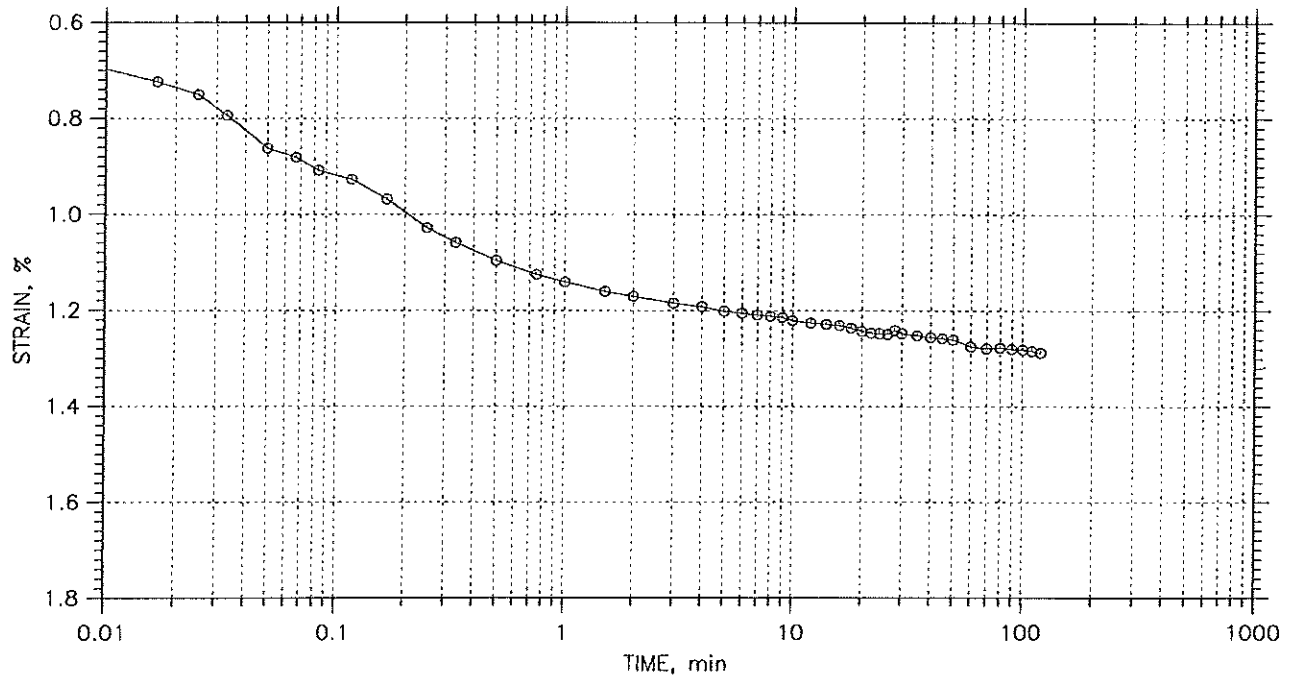
Project: Middletown H.S	Location: Middletown, CT	Project No.: GTX-4739
Boring No.: ---	Tested By: fy	Checked By: jdt
Sample No.: B22A	Test Date: 06/17/04	Depth: 5-7 ft
Test No.: C4	Sample Type: Tube	Elevation: ---
Description: Moist, brown silt with clay		
Remarks: ---		

CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 2 of 12

Stress: 0.25 tsf



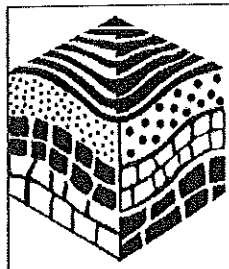
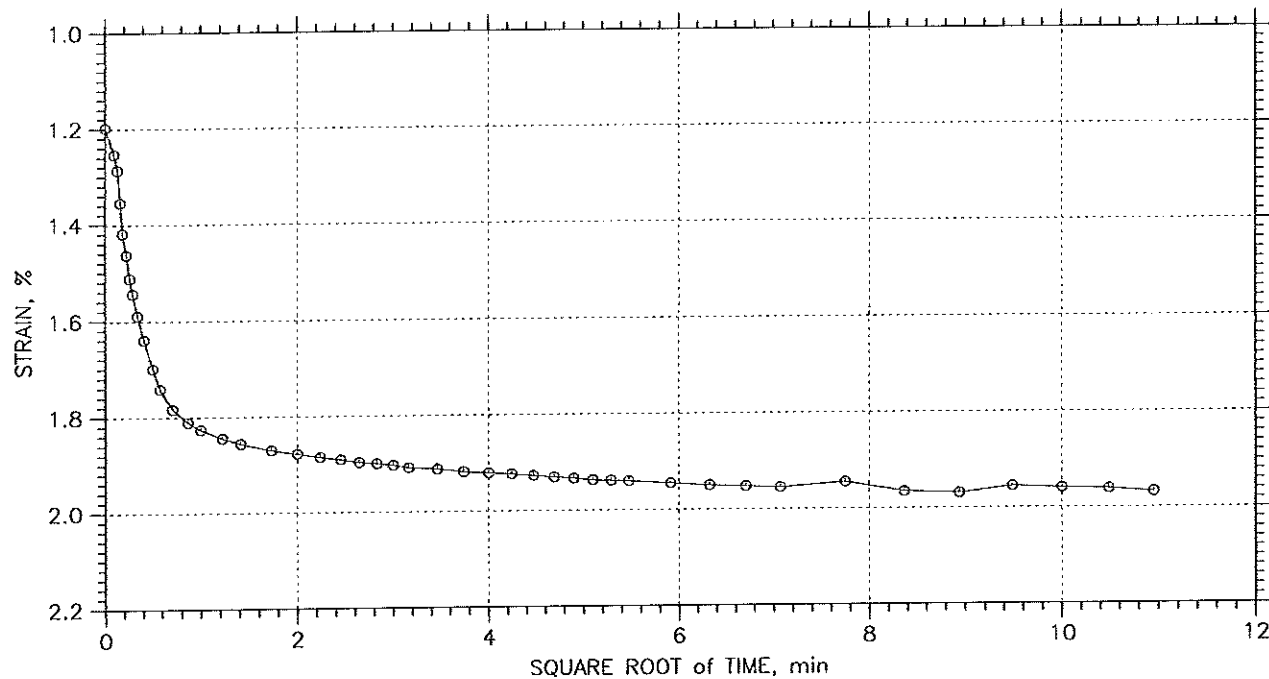
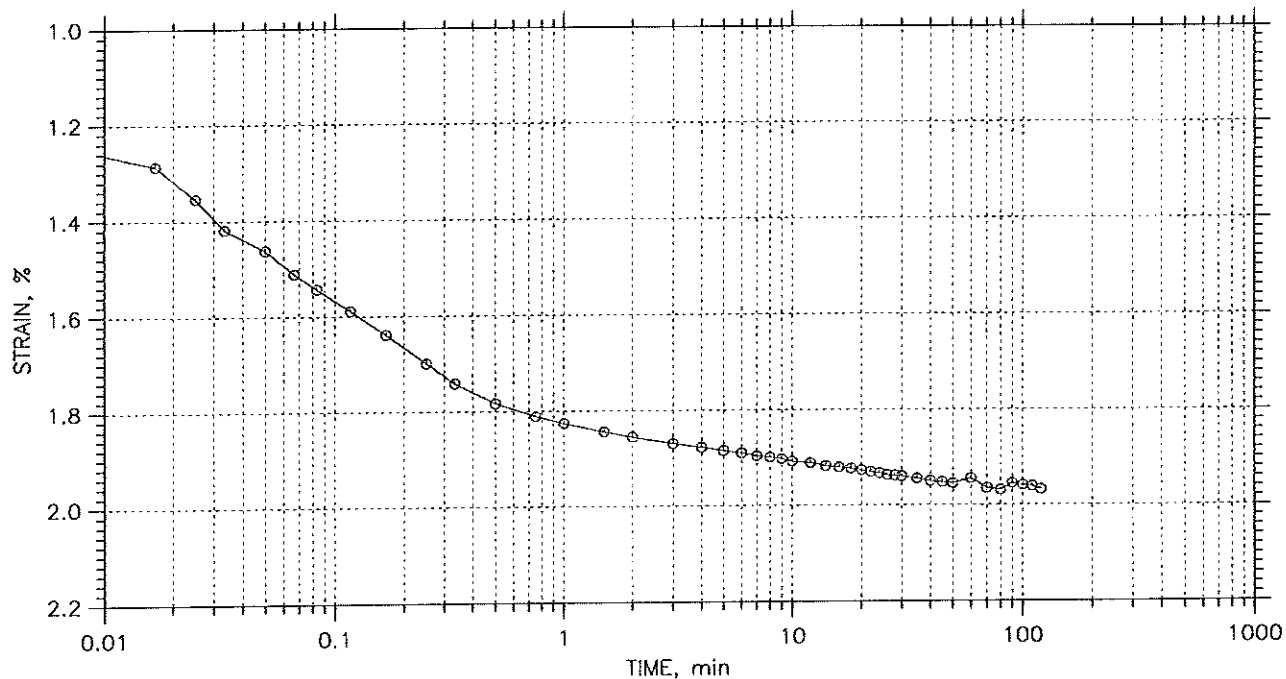
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Boring No.: ---	Tested By: fy	Checked By: jdt
Sample No.: B22A	Test Date: 06/17/04	Depth: 5-7 ft
Test No.: C4	Sample Type: Tube	Elevation: ---
Description: Moist, brown silt with clay		
Remarks: ---		

CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 3 of 12

Stress: 0.5 tsf



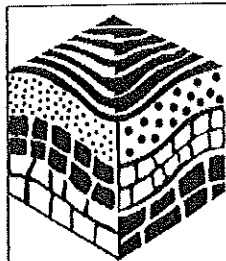
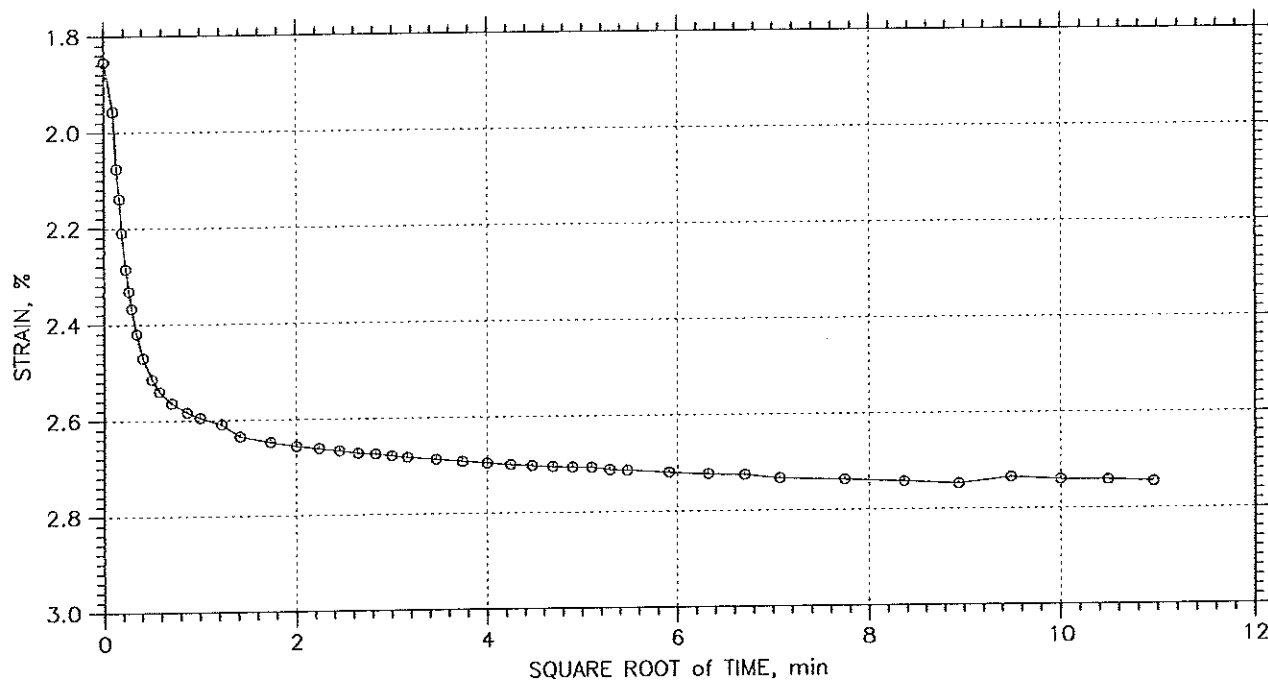
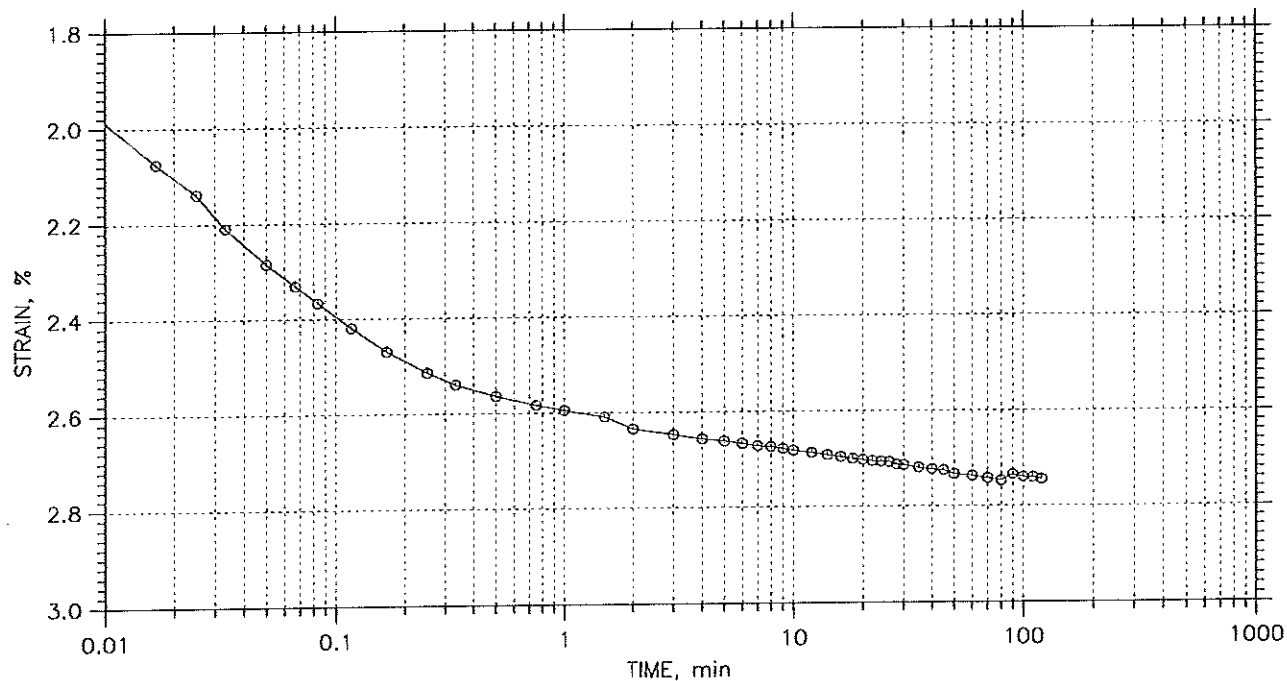
Project: Middletown H.S	Location: Middletown, CT	Project No.: GTX-4739
Boring No.: ---	Tested By: fy	Checked By: jdt
Sample No.: B22A	Test Date: 06/17/04	Depth: 5-7 ft
Test No.: C4	Sample Type: Tube	Elevation: ---
Description: Moist, brown silt with clay		
Remarks: ---		

CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 4 of 12

Stress: 1. tsf



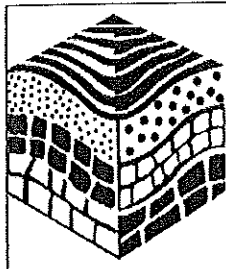
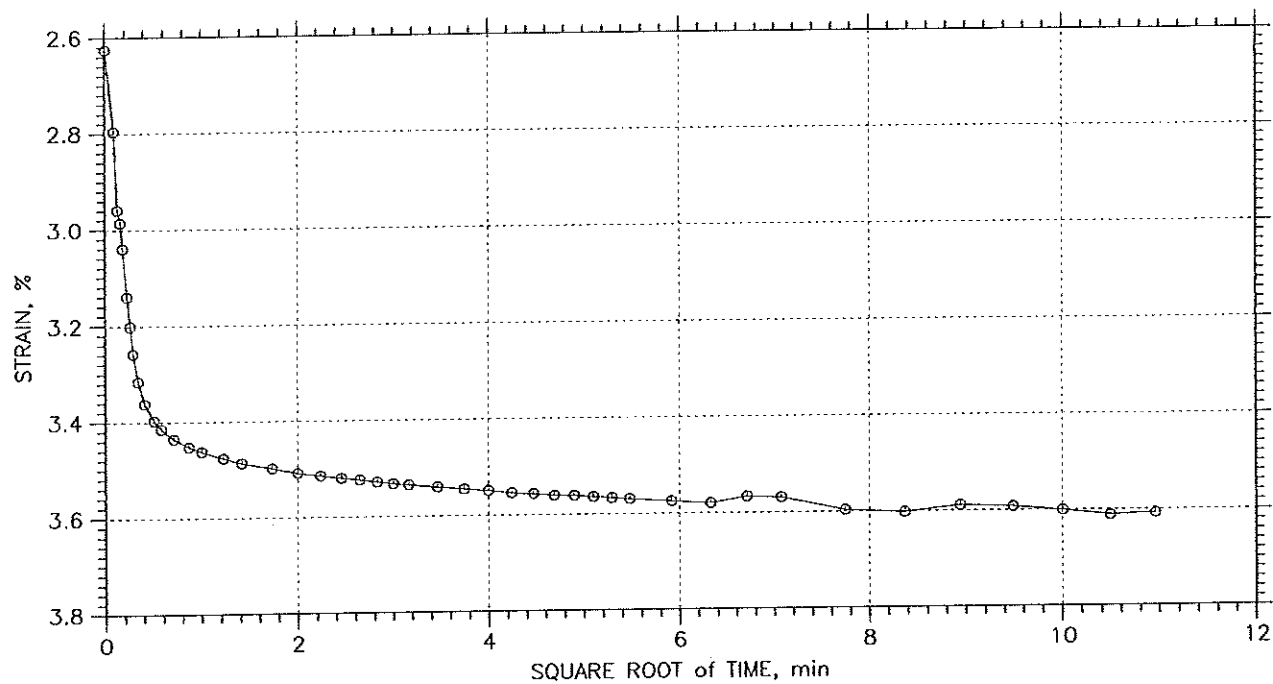
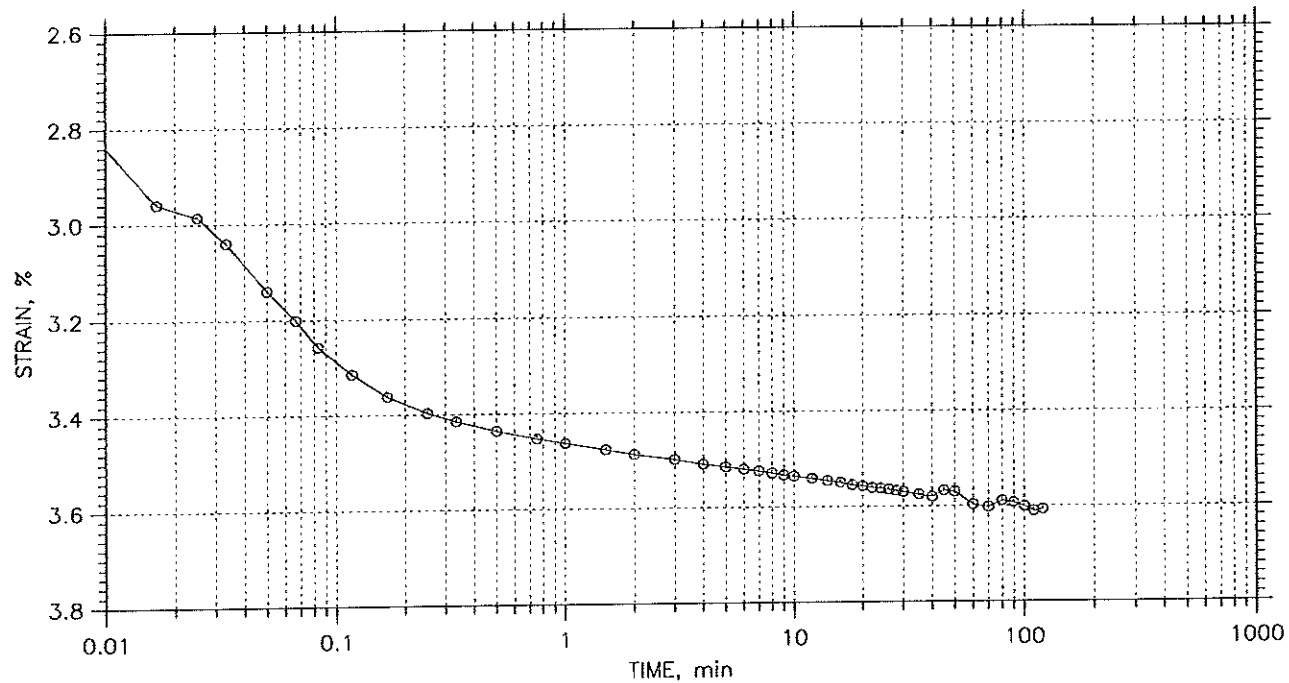
Project: Middletown H.S	Location: Middletown, CT	Project No.: GTX-4739
Boring No.: ---	Tested By: fy	Checked By: jdt
Sample No.: B22A	Test Date: 06/17/04	Depth: 5-7 ft
Test No.: C4	Sample Type: Tube	Elevation: ---
Description: Moist, brown silt with clay		
Remarks: ---		

CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 5 of 12

Stress: 2. tsf



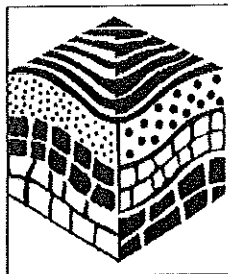
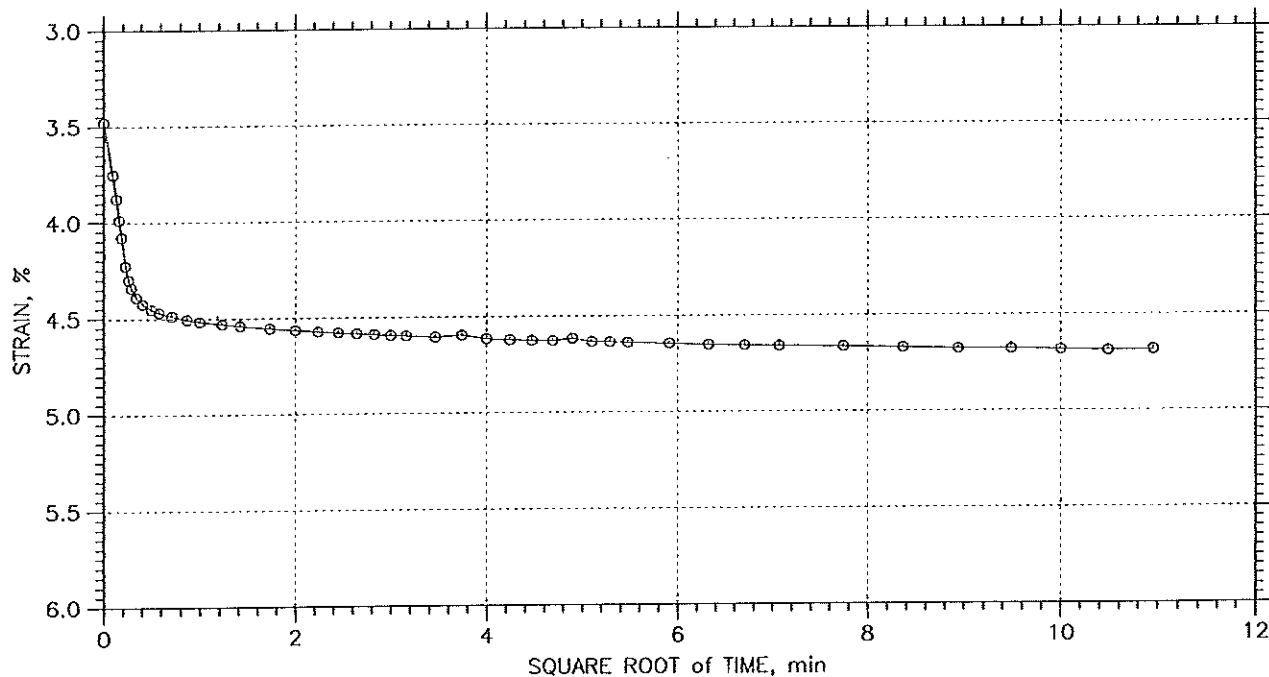
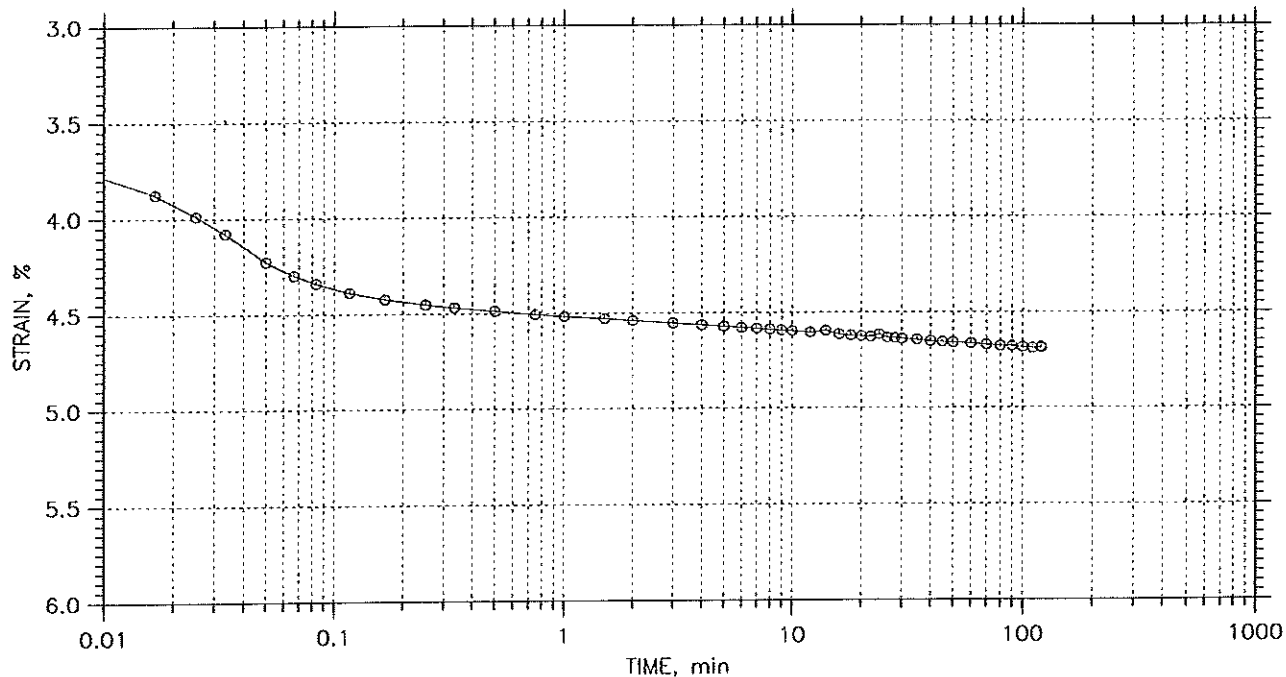
Project: Middletown H.S	Location: Middletown, CT	Project No.: GTX-4739
Boring No.: ---	Tested By: fy	Checked By: jdt
Sample No.: B22A	Test Date: 06/17/04	Depth: 5-7 ft
Test No.: C4	Sample Type: Tube	Elevation: ---
Description: Moist, brown silt with clay		
Remarks: ---		

CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 6 of 12

Stress: 4. tsf



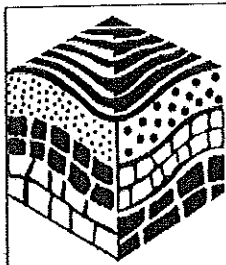
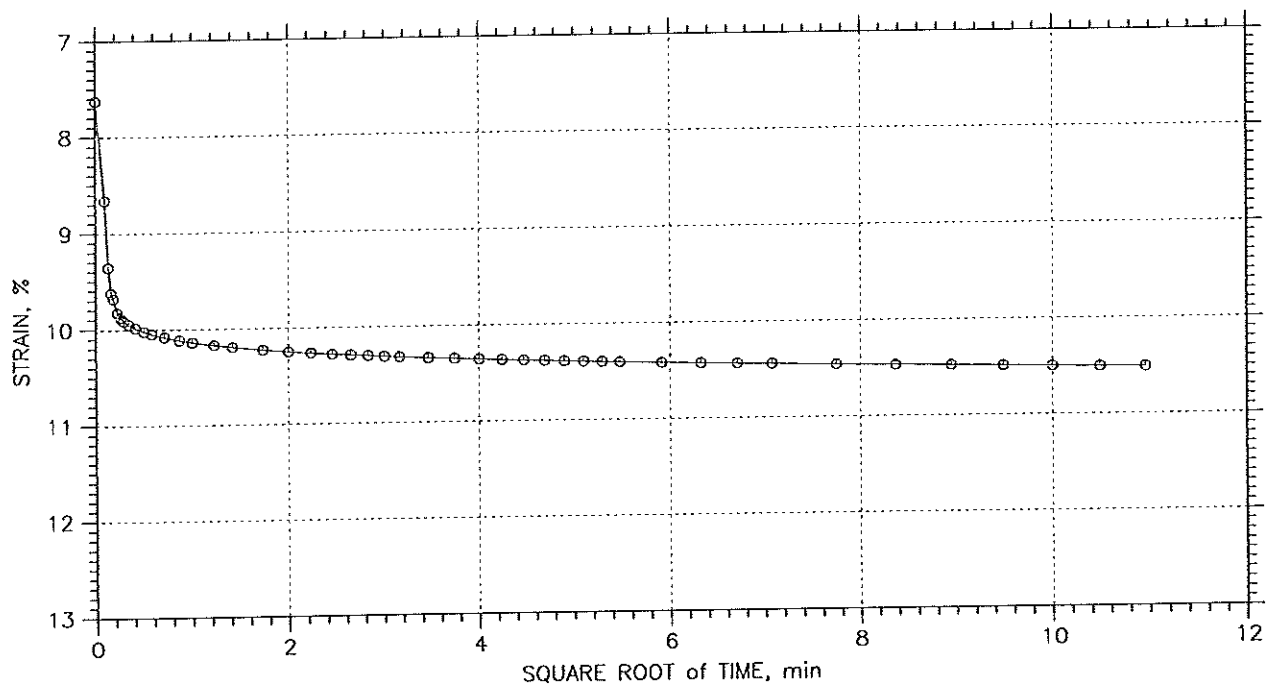
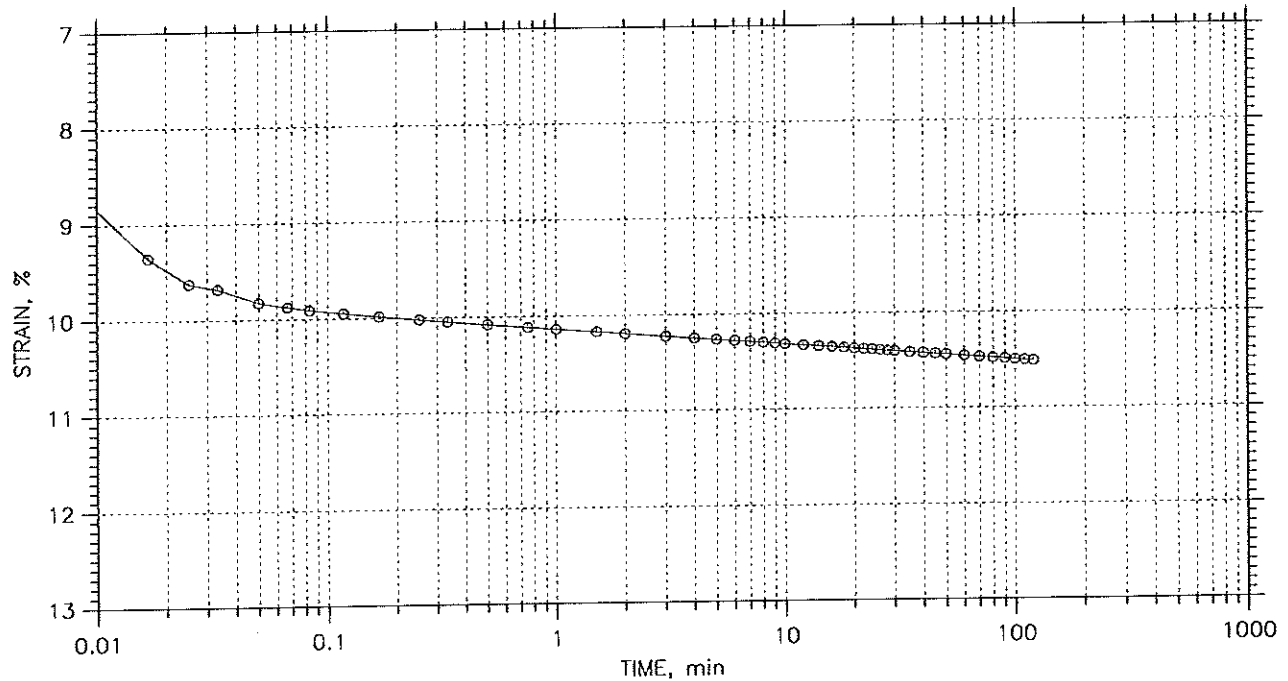
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Boring No.: ---	Tested By: fy	Checked By: jdt
Sample No.: B22A	Test Date: 06/17/04	Depth: 5-7 ft
Test No.: C4	Sample Type: Tube	Elevation: ---
Description: Moist, brown silt with clay		
Remarks: ---		

CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 9 of 12

Stress: 32. tsf



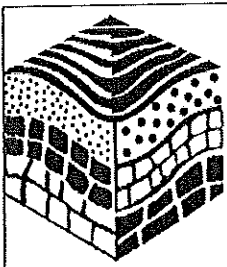
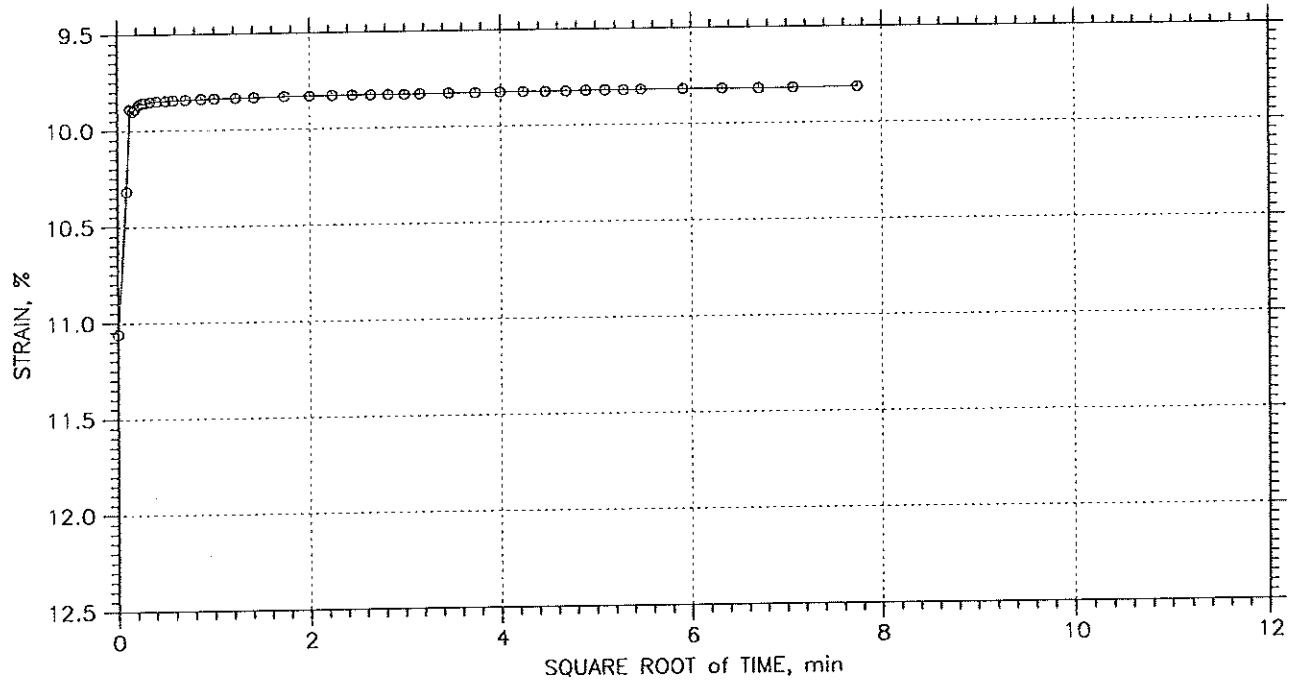
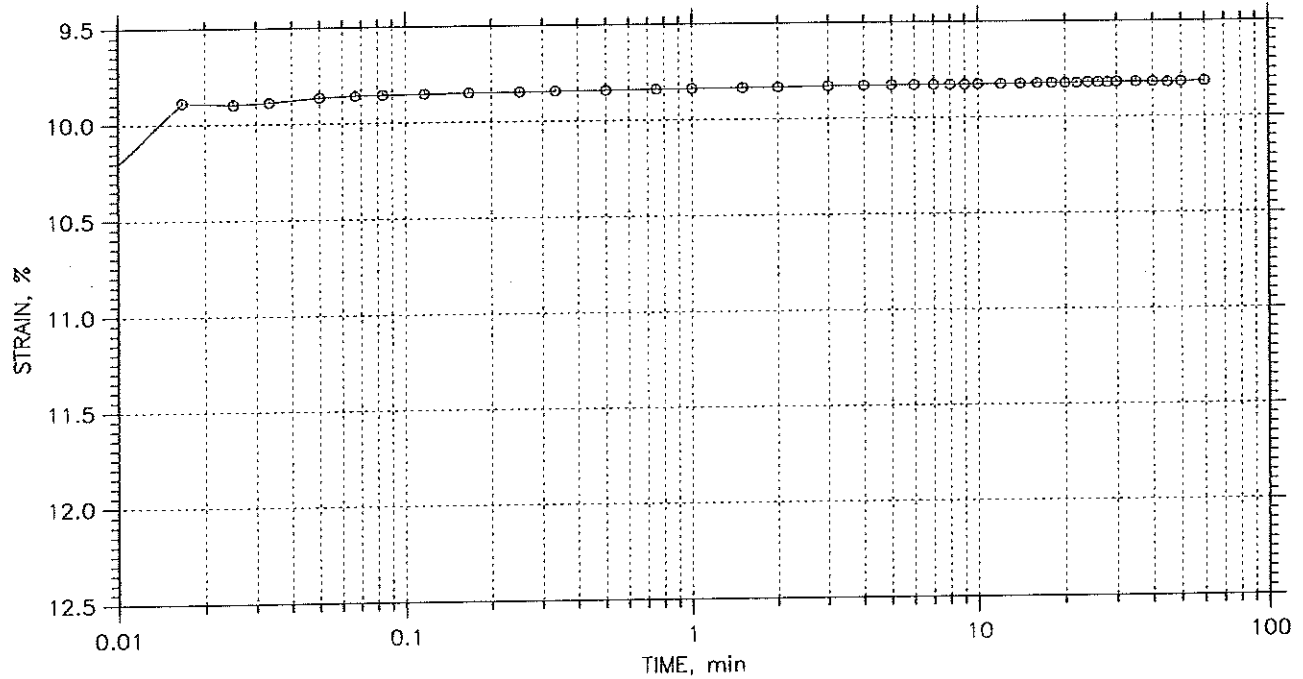
Project: Middletown H.S	Location: Middletown, CT	Project No.: GTX-4739
Boring No.: ---	Tested By: fy	Checked By: jdt
Sample No.: B22A	Test Date: 06/17/04	Depth: 5-7 ft
Test No.: C4	Sample Type: Tube	Elevation: ---
Description: Moist, brown silt with clay		
Remarks: ---		

CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 10 of 12

Stress: 8. tsf



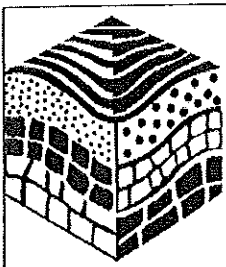
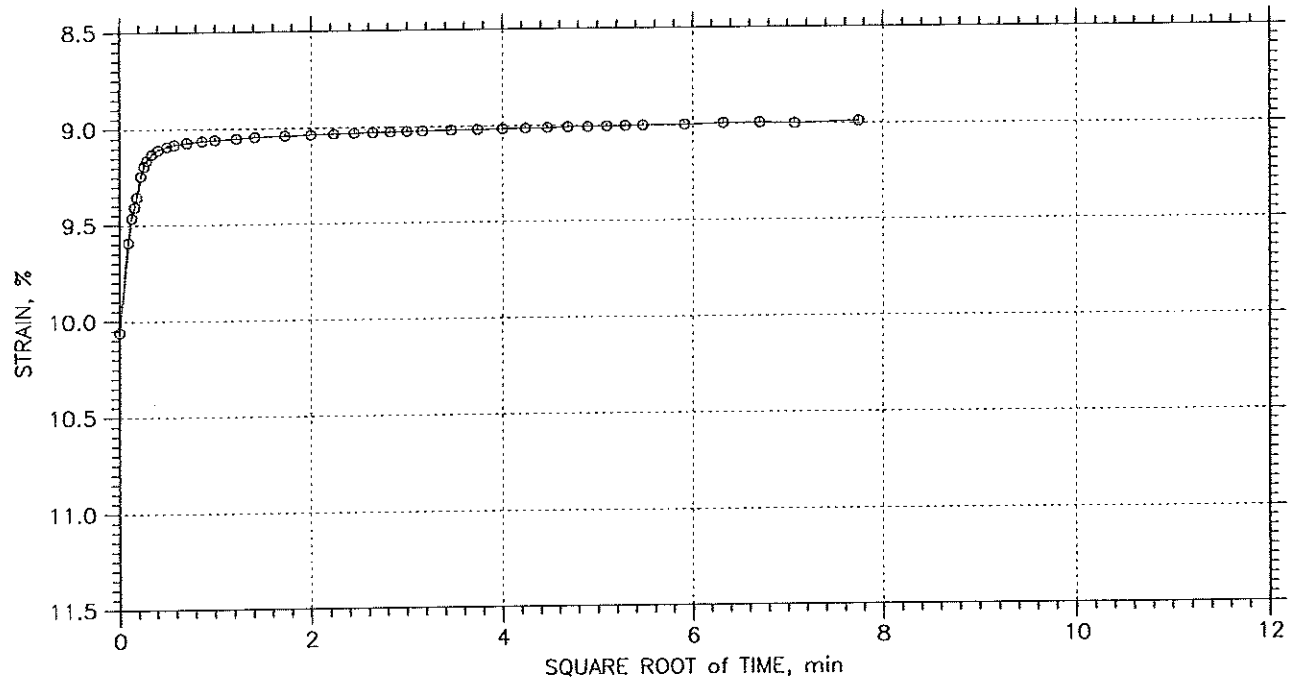
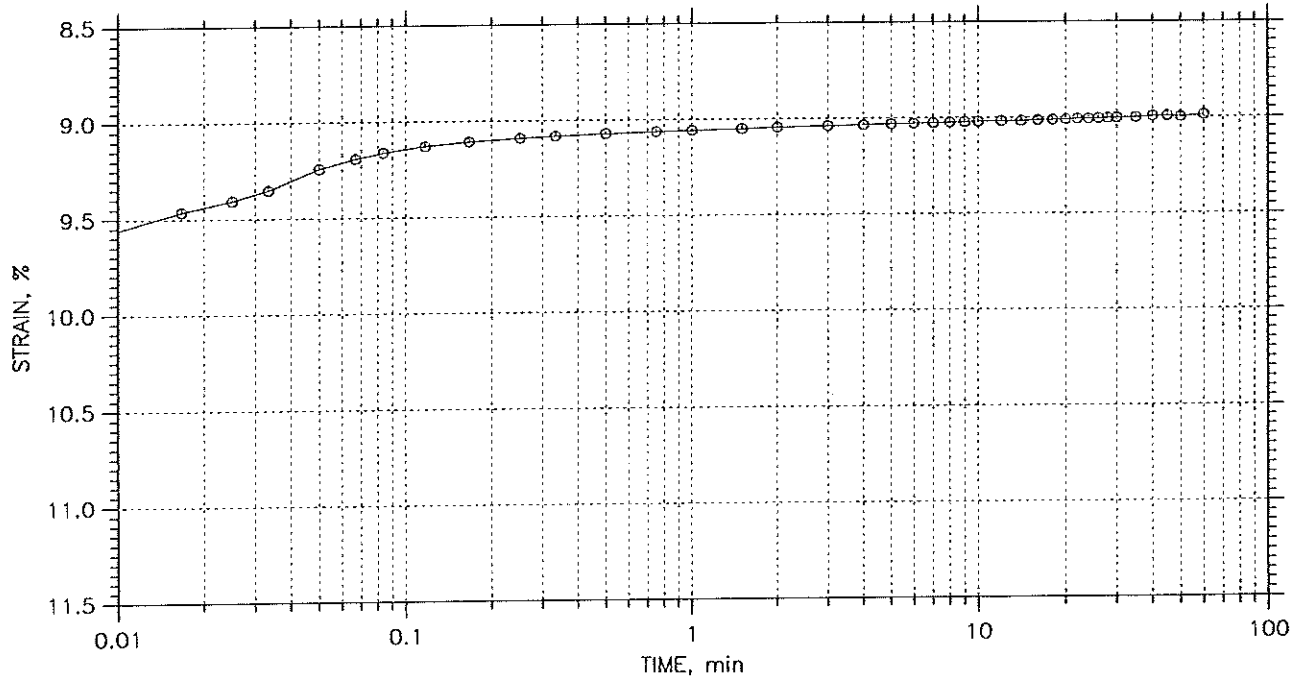
Project: Middletown H.S	Location: Middletown, CT	Project No.: GTX-4739
Boring No.: ---	Tested By: fy	Checked By: jdt
Sample No.: B22A	Test Date: 06/17/04	Depth: 5-7 ft
Test No.: C4	Sample Type: Tube	Elevation: ---
Description: Moist, brown silt with clay		
Remarks: ---		

CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 11 of 12

Stress: 2. tsf



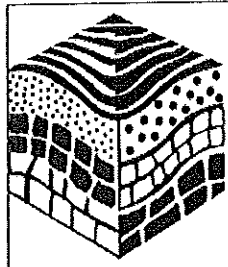
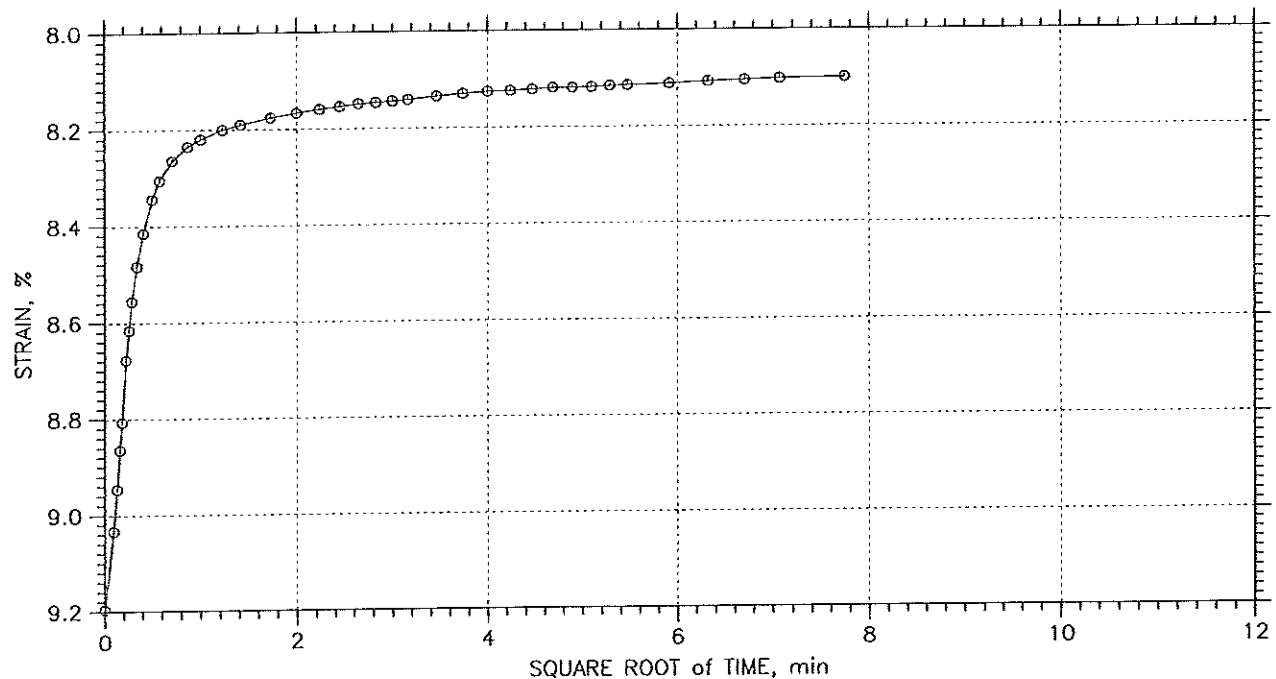
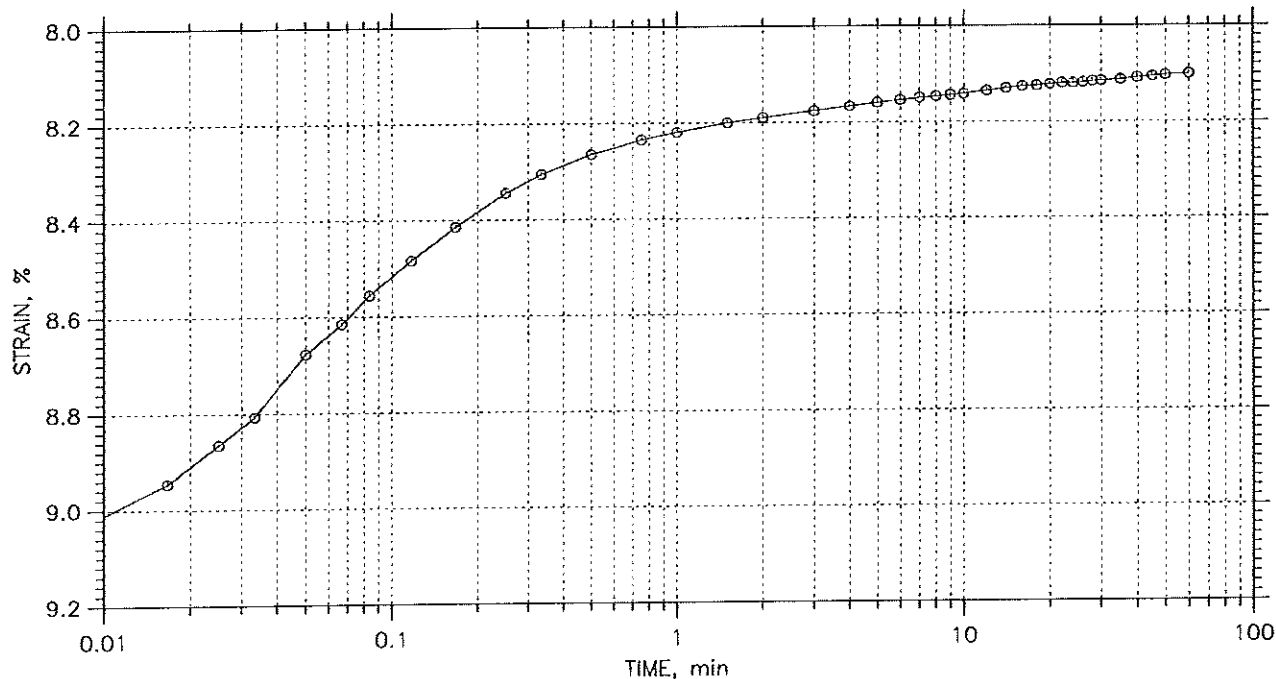
Project: Middletown H.S	Location: Middletown, CT	Project No.: GTX-4739
Boring No.: ---	Tested By: fy	Checked By: jdt
Sample No.: B22A	Test Date: 06/17/04	Depth: 5-7 ft
Test No.: C4	Sample Type: Tube	Elevation: ---
Description: Moist, brown silt with clay		
Remarks: ---		

CONSOLIDATION TEST DATA

TIME CURVES

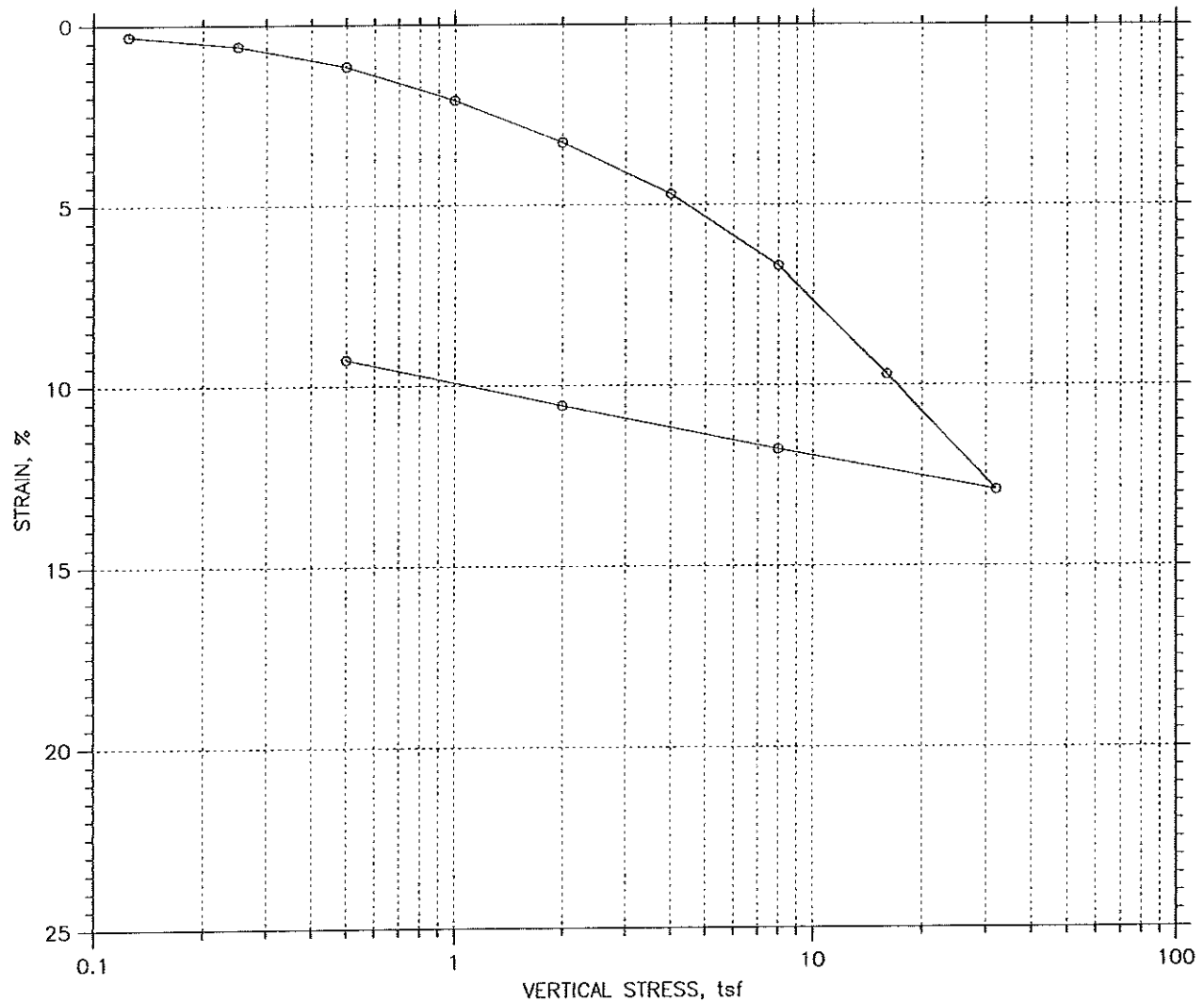
Constant Load Step: 12 of 12

Stress: 0.5 tsf

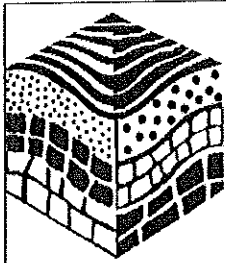


Project: Middletown H.S	Location: Middletown, CT	Project No.: GTX-4739
Boring No.: ---	Tested By: fy	Checked By: jdt
Sample No.: B22A	Test Date: 06/17/04	Depth: 5-7 ft
Test No.: C4	Sample Type: Tube	Elevation: ---
Description: Moist, brown silt with clay		
Remarks: ---		

CONSOLIDATION TEST DATA SUMMARY REPORT



				Before Test	After Test	
Overburden Pressure: 0 tsf			Water Content, %	18.97	17.41	
Preconsolidation Pressure: 0 tsf			Dry Unit Weight, pcf	105.9	116.7	
Compression Index: 0			Saturation, %	82.92	100.00	
Diameter: 2.5 in		Height: 1 in		Void Ratio	0.63	0.48
LL: ---	PL: ---	PI: ---	GS: 2.77			



Project: Middletown H.S	Location: Middletown, CT	Project No.: GTX-4739
Boring No.: ---	Tested By: fy	Checked By: jdt
Sample No.: B-21A	Test Date: 06/17/2004	Depth: 5-7 ft
Test No.: C5	Sample Type: Tube	Elevation: ---
Description: Moist, brown clay and silt with gravel		
Remarks: ---		

CONSOLIDATION TEST DATA

Project: Middletown H.S
Boring No.: ---
Sample No.: B-21A
Test No.: C5

Location: Middletown, CT
Tested By: fy
Test Date: 06/17/2004
Sample Type: Tube

Project No.: GTX-4739
Checked By: jdt
Depth: 5-7 ft
Elevation: ---

Soil Description: Moist, brown clay and silt with gravel
Remarks: ---

Estimated Specific Gravity: 2.77
Initial Void Ratio: 0.63
Final Void Ratio: 0.48

Liquid Limit: ---
Plastic Limit: ---
Plasticity Index: ---

Initial Height: 1.00 in
Specimen Diameter: 2.50 in

Container ID	Before Consolidation		After Consolidation	
	Trimmings	Specimen+Ring	Specimen+Ring	Trimmings
	p	RING		b
Wt. Container + Wet Soil, gm	305.17	378.77	376.64	168.16
Wt. Container + Dry Soil, gm	257.74	352.9	352.9	144.43
Wt. Container, gm	8.19	216.49	216.49	8.1
Wt. Dry Soil, gm	249.55	136.41	136.41	136.33
Water Content, %	19.01	18.97	17.41	17.41
Void Ratio	---	0.63	0.48	---
Degree of Saturation, %	---	82.92	100.00	---
Dry Unit Weight, pcf	---	105.86	116.69	---

Note: Specific Gravity and Void Ratios are calculated assuming the degree of saturation equals 100% at the end of the test. Therefore, values may not represent actual values for the specimen.

CONSOLIDATION TEST DATA

Project: Middletown H.S
Boring No.: ---
Sample No.: B-21A
Test No.: C5

Location: Middletown, CT
Tested By: fy
Test Date: 06/17/2004
Sample Type: Tube

Project No.: GTX-4739
Checked By: jdt
Depth: 5-7 ft
Elevation: ---

Soil Description: Moist, brown clay and silt with gravel
Remarks: ---

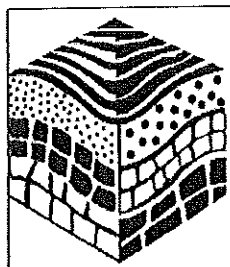
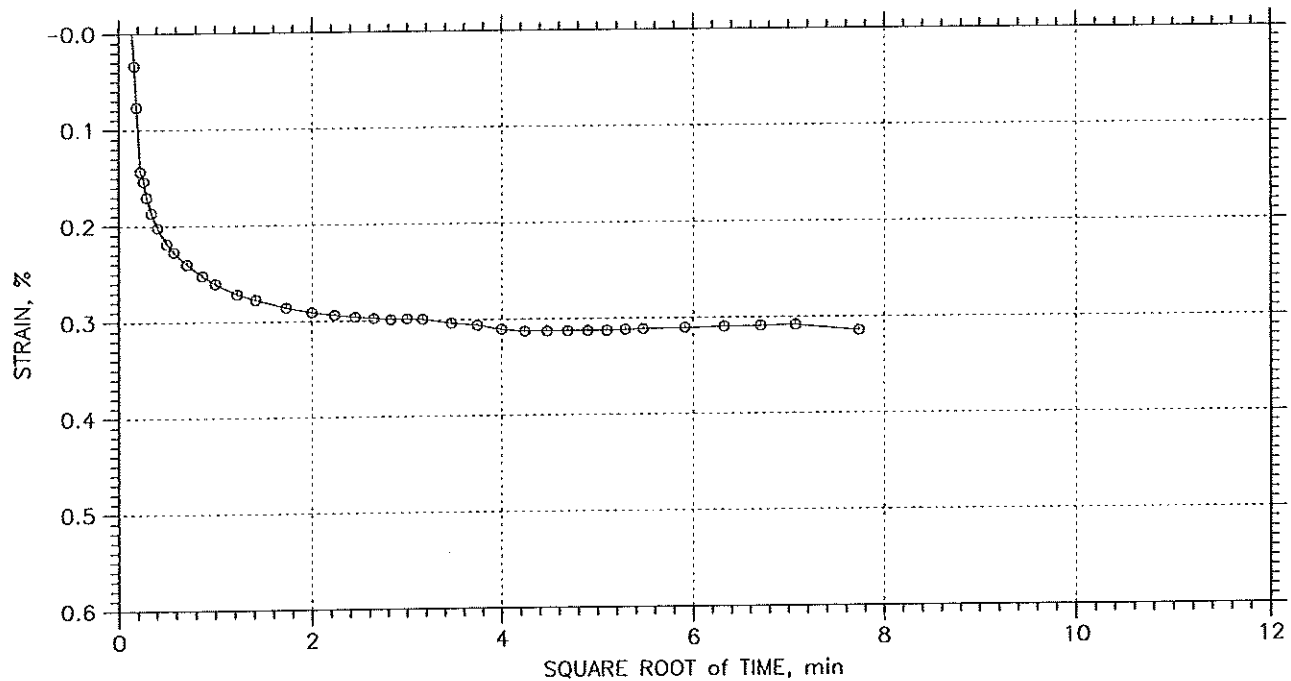
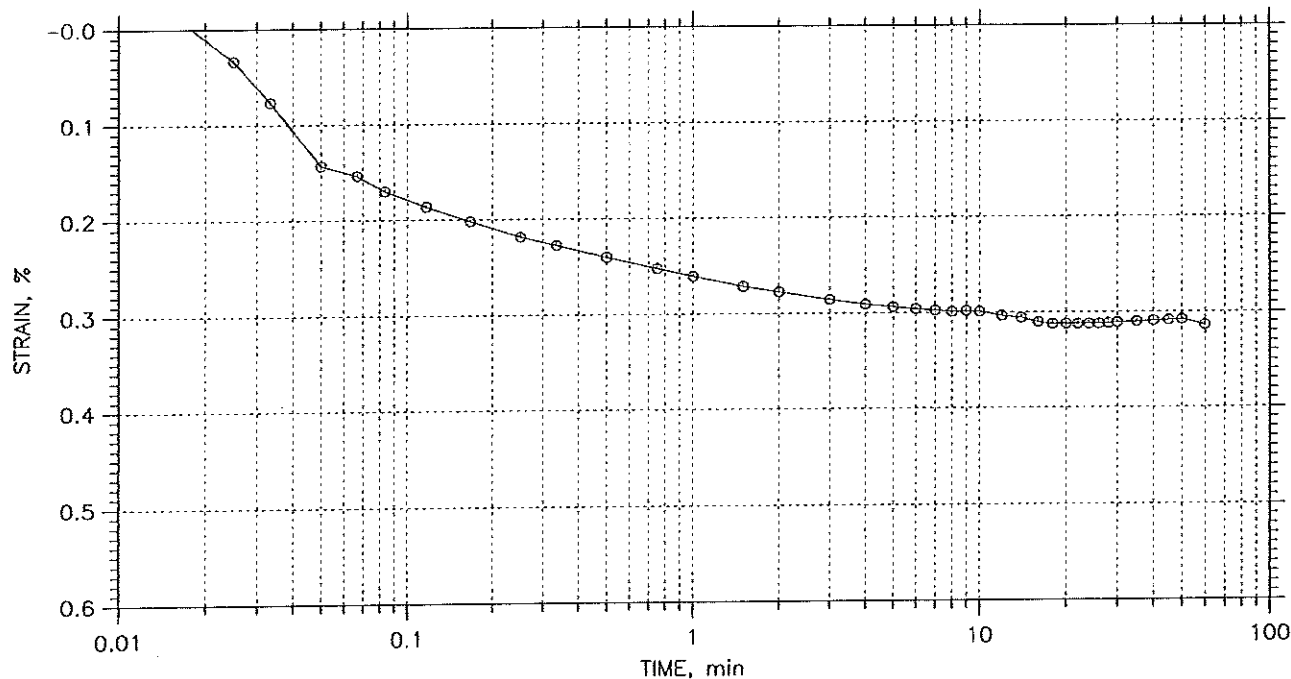
	Applied Stress tsf	Final Displacement in	Void Ratio	Strain at End %	T50 Fitting		Coefficient of Consolidation		
					Sq.Rt. min	Log min	Sq.Rt. in ² /sec	Log in ² /sec	Ave. in ² /sec
1	0.125	0.003141	0.629	0.31	0.0	0.0	1.84e-002	0.00e+000	1.84e-002
2	0.25	0.005912	0.624	0.59	0.2	0.0	4.23e-003	2.47e-002	7.22e-003
3	0.5	0.01163	0.615	1.16	0.4	0.0	2.09e-003	2.10e-002	3.80e-003
4	1	0.02099	0.599	2.10	0.2	0.0	4.00e-003	2.41e-002	6.86e-003
5	2	0.03278	0.580	3.28	0.1	0.0	5.28e-003	3.40e-002	9.14e-003
6	4	0.04701	0.557	4.70	0.2	0.0	4.99e-003	5.00e-002	9.08e-003
7	8	0.06701	0.524	6.70	0.2	0.0	4.82e-003	5.63e-002	8.88e-003
8	16	0.09716	0.475	9.72	0.2	0.0	3.17e-003	0.00e+000	3.17e-003
9	32	0.1292	0.423	12.92	0.4	0.0	1.84e-003	0.00e+000	1.84e-003
10	8	0.1178	0.441	11.78	0.0	0.0	6.52e-002	0.00e+000	6.52e-002
11	2	0.1056	0.461	10.56	0.7	0.0	9.32e-004	0.00e+000	9.32e-004
12	0.5	0.09276	0.482	9.28	4.0	0.0	1.65e-004	0.00e+000	1.65e-004

CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 1 of 12

Stress: 0.125 tsf



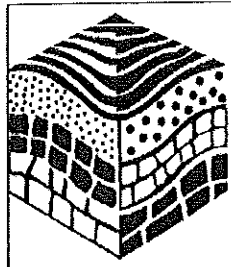
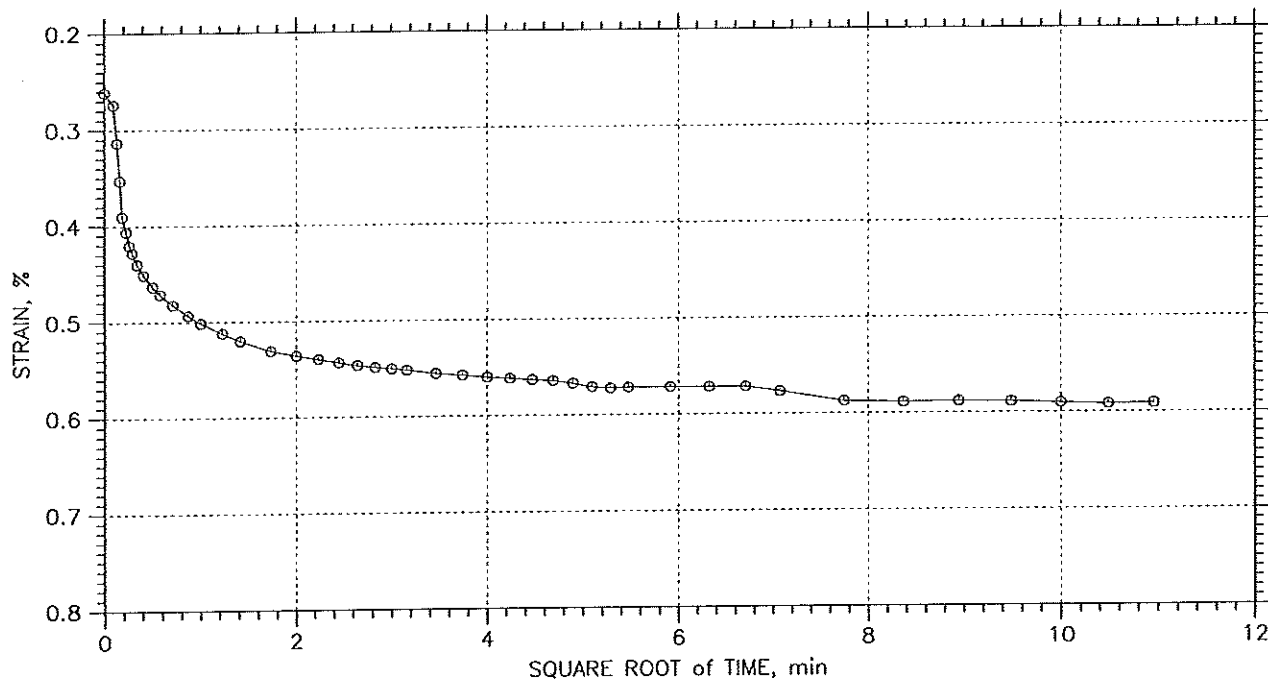
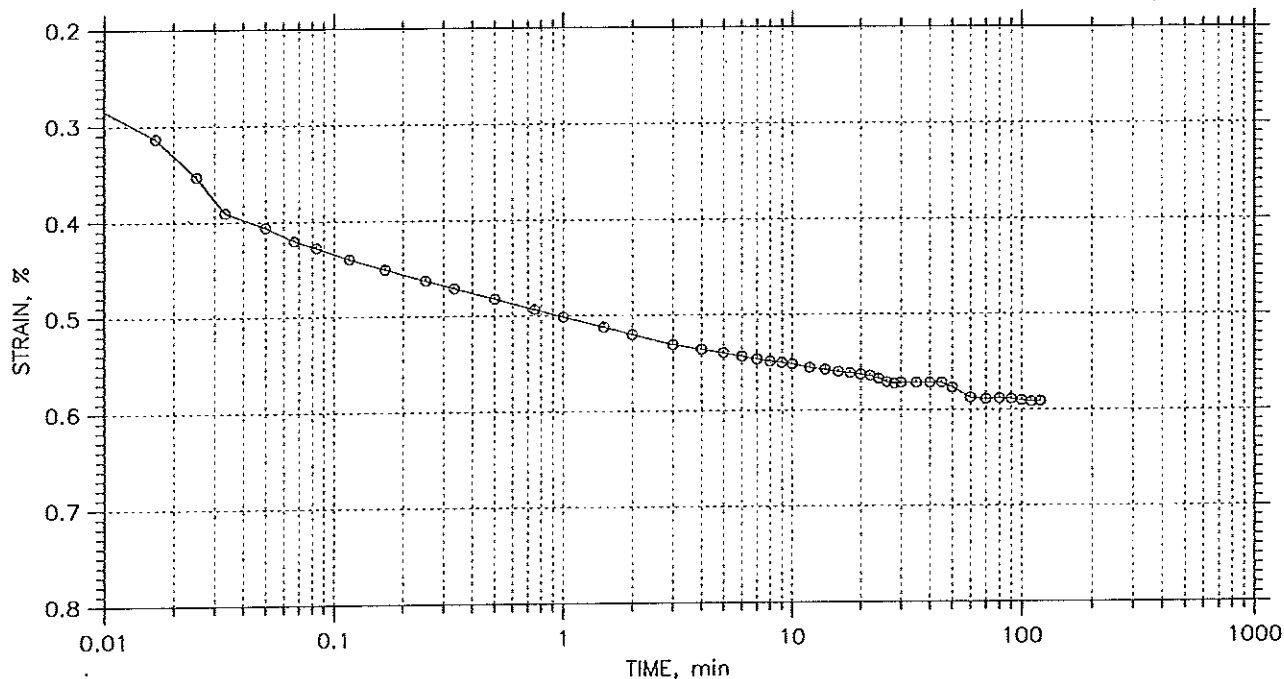
Project: Middletown H.S	Location: Middletown, CT	Project No.: GTX-4739
Boring No.: ---	Tested By: fy	Checked By: jdt
Sample No.: B-21A	Test Date: 06/17/2004	Depth: 5-7 ft
Test No.: C5	Sample Type: Tube	Elevation: ---
Description: Moist, brown clay and silt with gravel		
Remarks: ---		

CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 2 of 12

Stress: 0.25 tsf



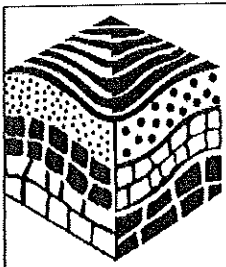
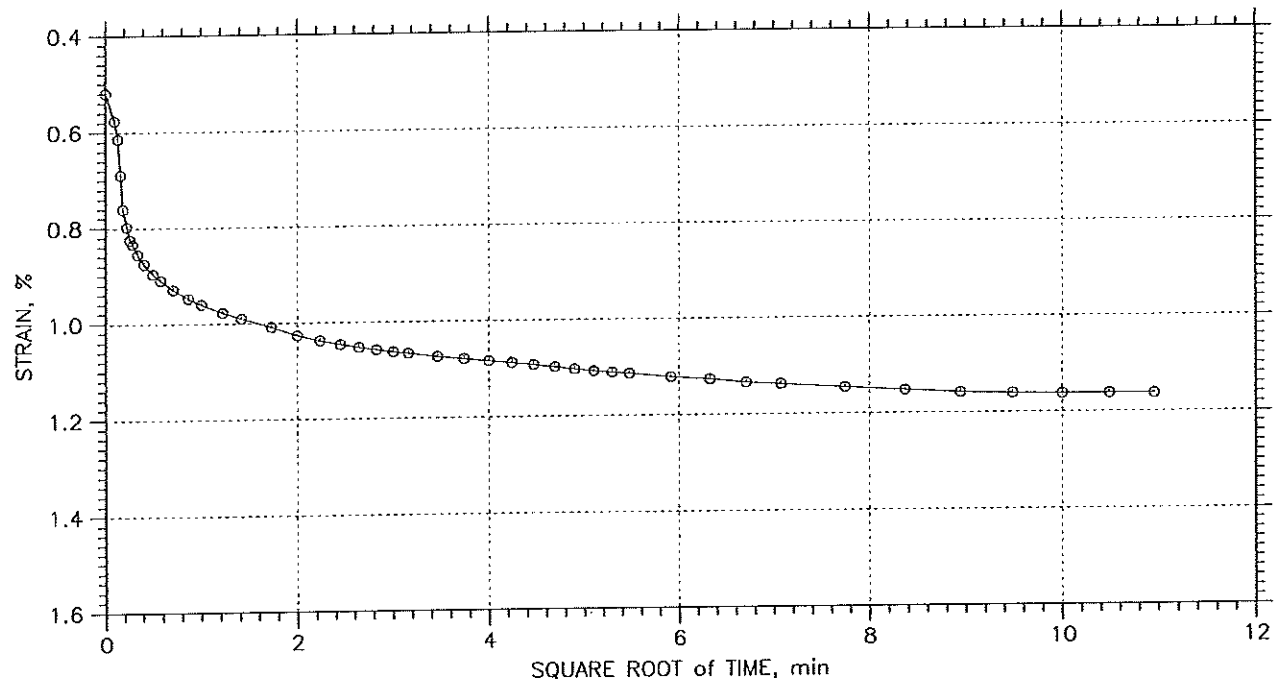
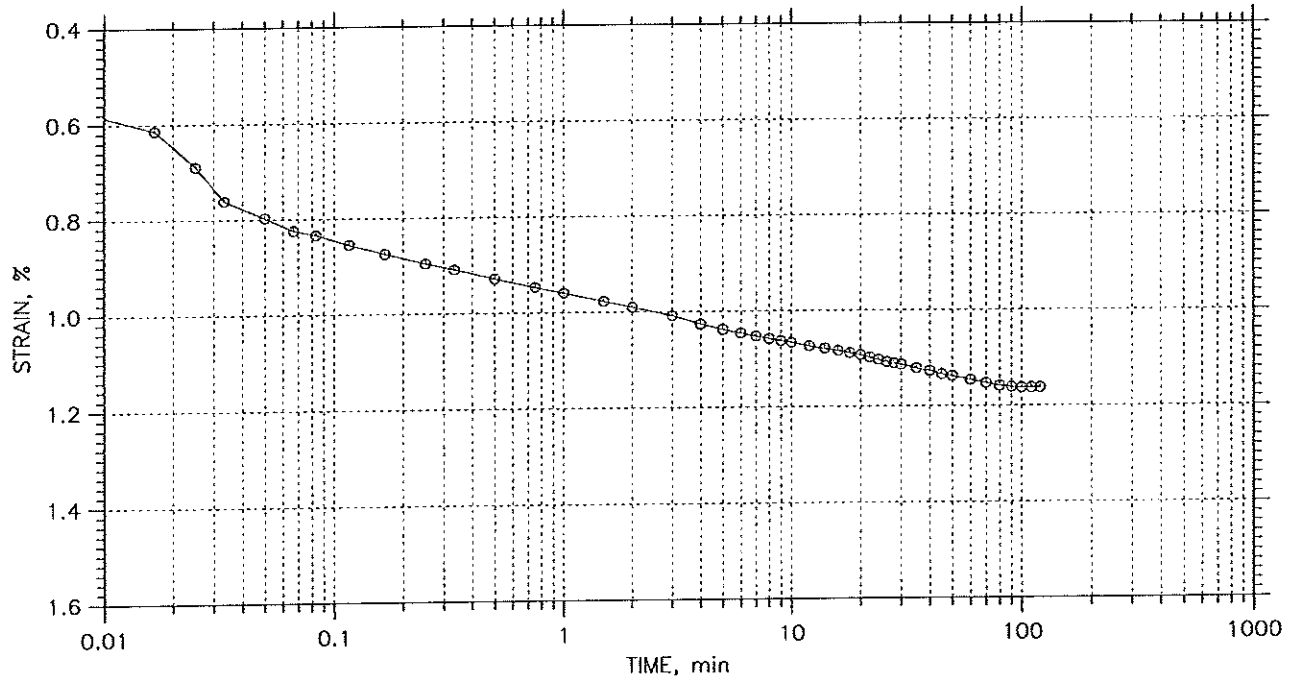
Project: Middletown H.S	Location: Middletown, CT	Project No.: GTX-4739
Boring No.: ---	Tested By: fy	Checked By: jdt
Sample No.: B-21A	Test Date: 06/17/2004	Depth: 5-7 ft
Test No.: C5	Sample Type: Tube	Elevation: ---
Description: Moist, brown clay and silt with gravel		
Remarks: ---		

CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 3 of 12

Stress: 0.5 tsf



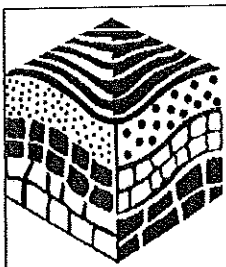
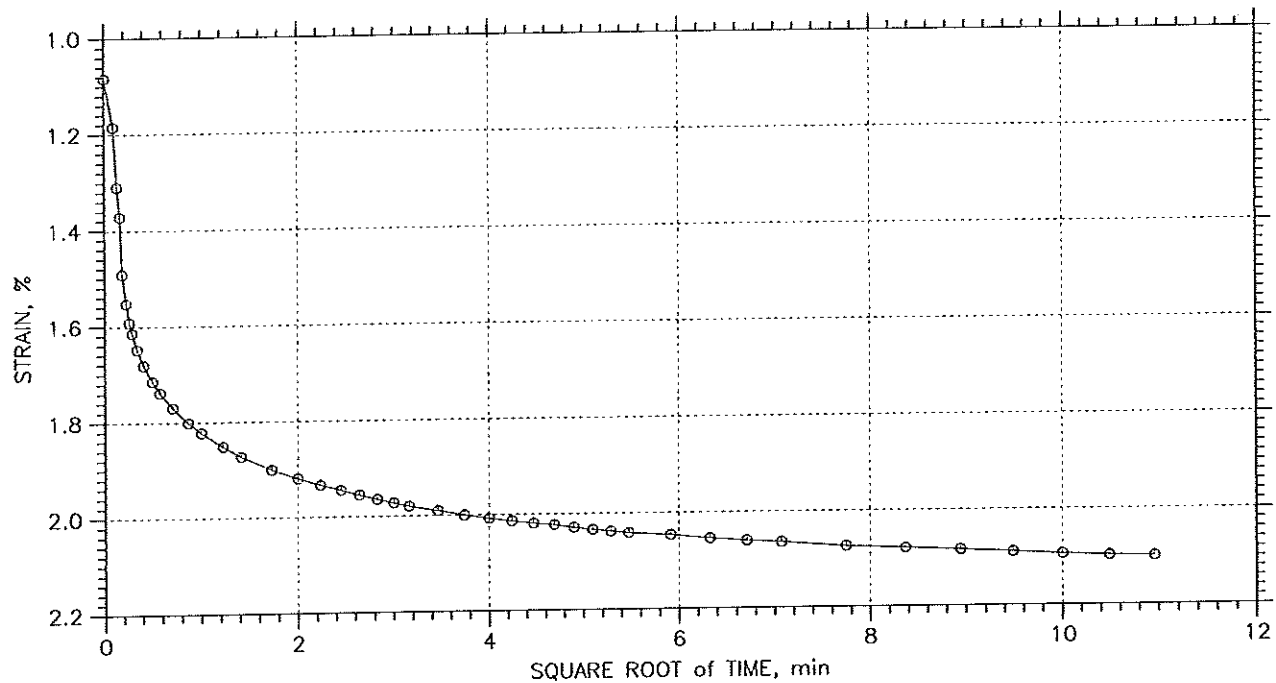
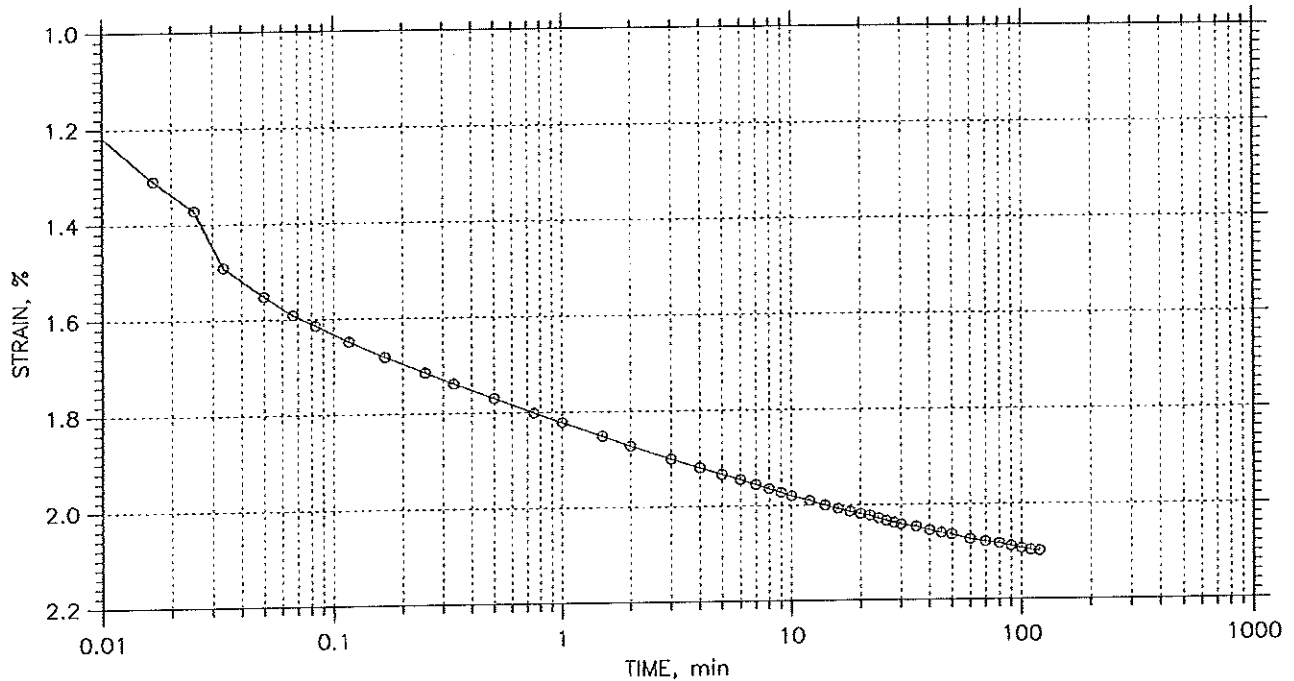
Project: Middletown H.S	Location: Middletown, CT	Project No.: GTX-4739
Boring No.: ---	Tested By: fy	Checked By: jdt
Sample No.: B-21A	Test Date: 06/17/2004	Depth: 5-7 ft
Test No.: C5	Sample Type: Tube	Elevation: ---
Description: Moist, brown clay and silt with gravel		
Remarks: ---		

CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 4 of 12

Stress: 1. tsf



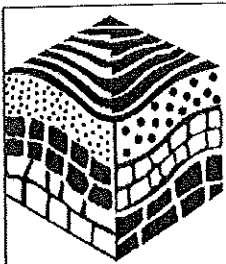
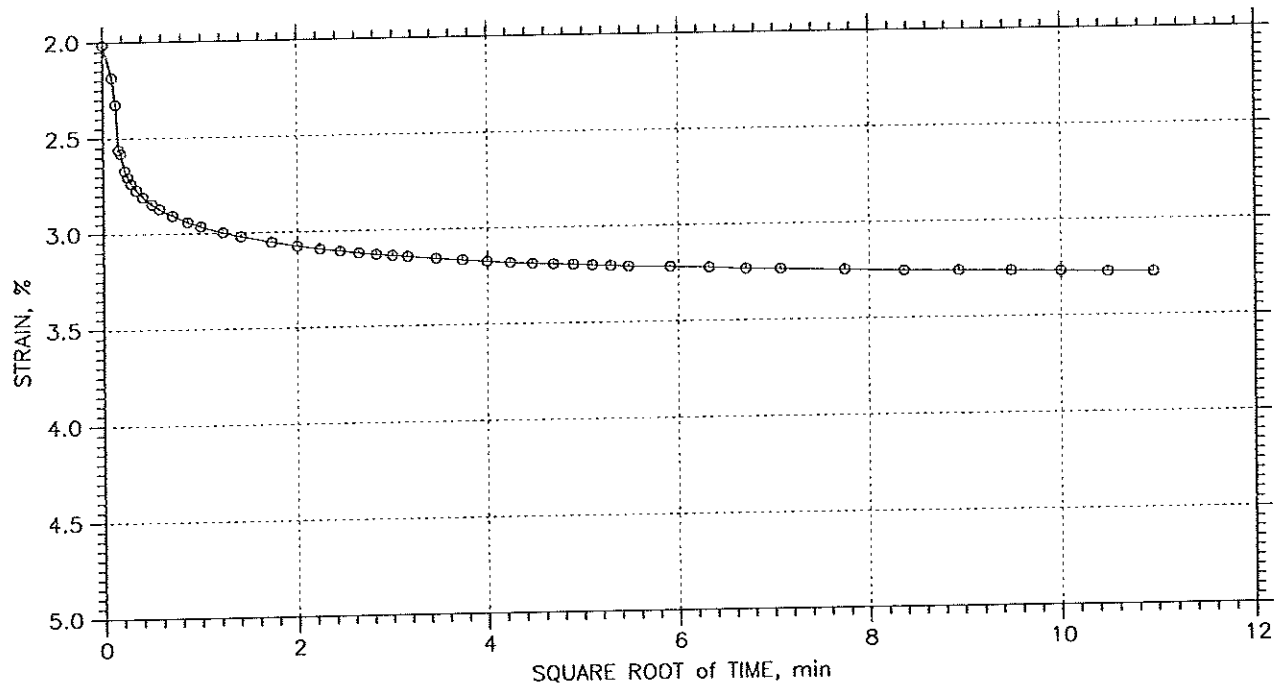
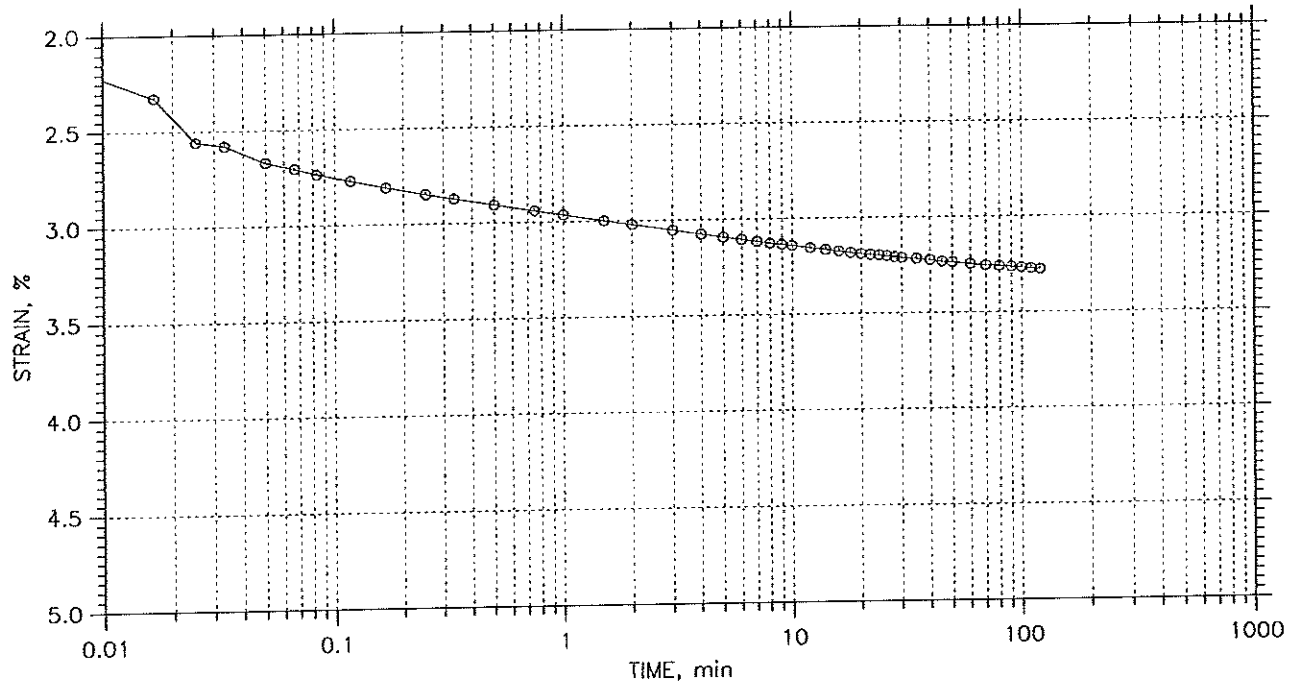
Project: Middletown H.S	Location: Middletown, CT	Project No.: GTX-4739
Boring No.: ---	Tested By: fy	Checked By: jdt
Sample No.: B-21A	Test Date: 06/17/2004	Depth: 5-7 ft
Test No.: C5	Sample Type: Tube	Elevation: ---
Description: Moist, brown clay and silt with gravel		
Remarks: ---		

CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 5 of 12

Stress: 2. tsf



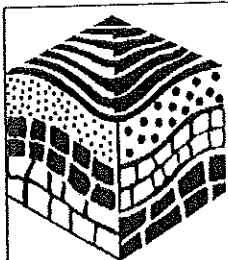
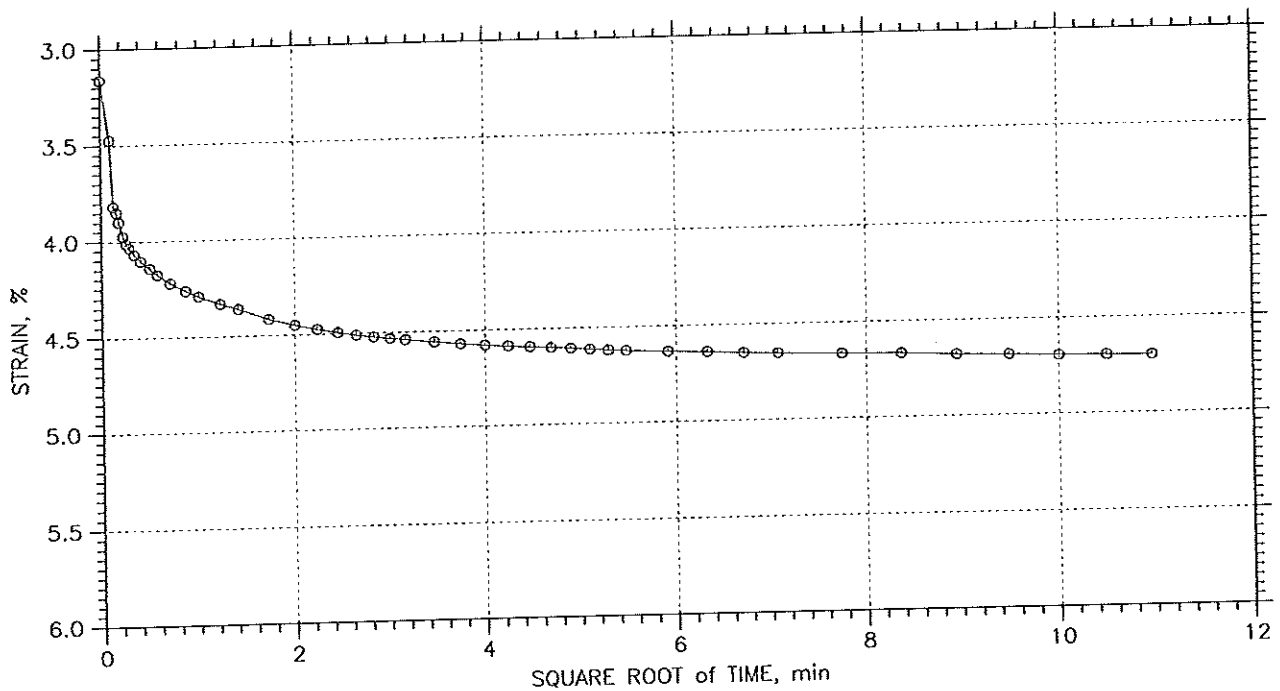
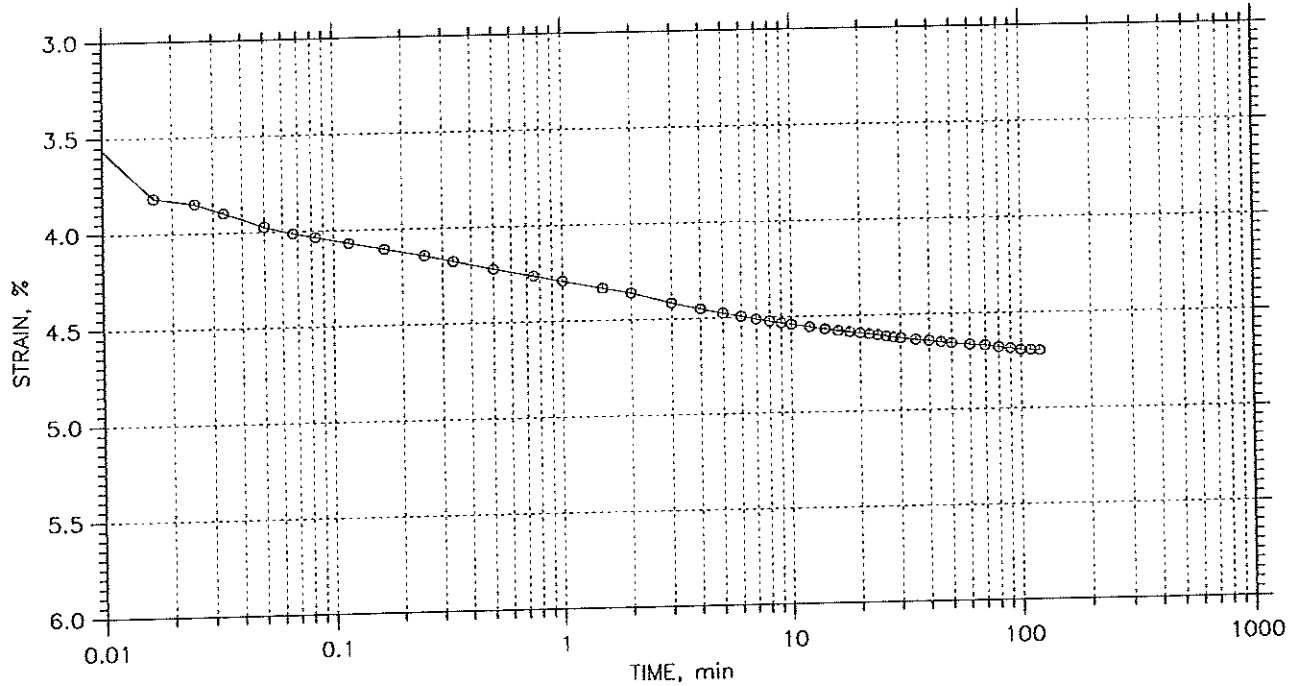
Project: Middletown H.S	Location: Middletown, CT	Project No.: GTX-4739
Boring No.: ---	Tested By: fy	Checked By: jdt
Sample No.: B-21A	Test Date: 06/17/2004	Depth: 5-7 ft
Test No.: C5	Sample Type: Tube	Elevation: ---
Description: Moist, brown clay and silt with gravel		
Remarks: ---		

CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 6 of 12

Stress: 4. tsf



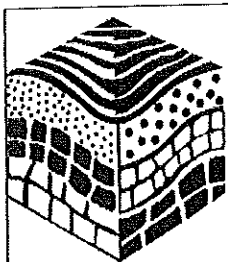
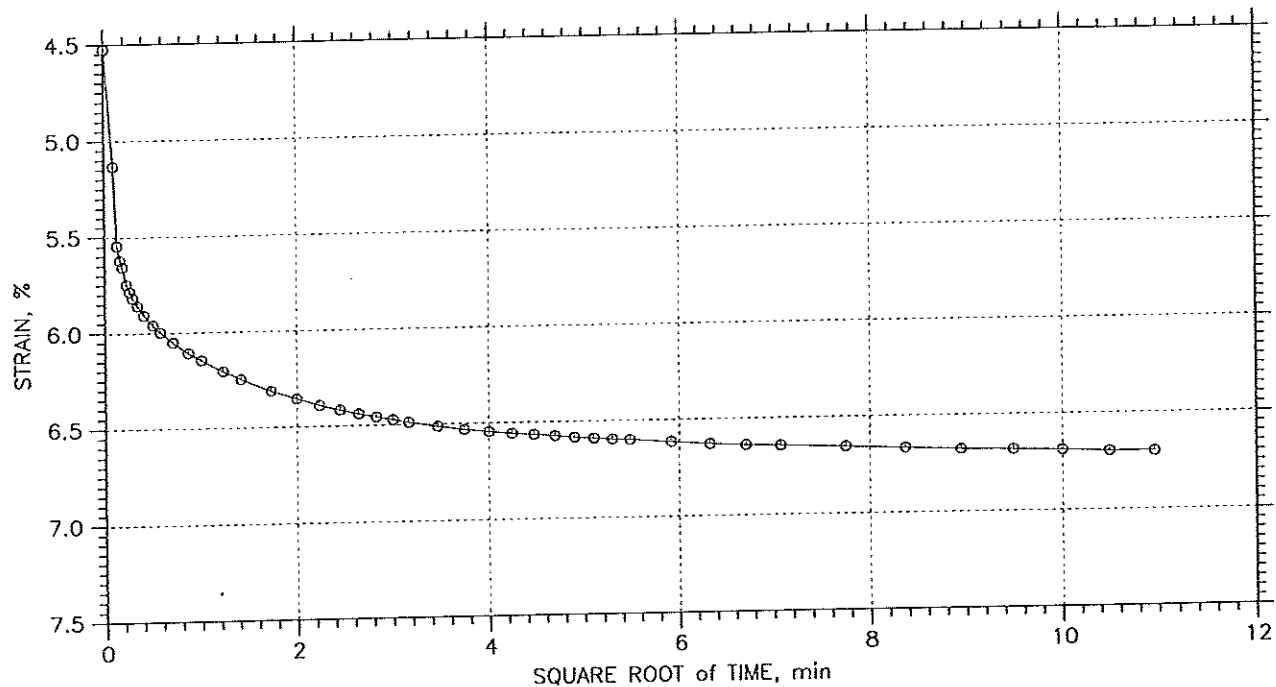
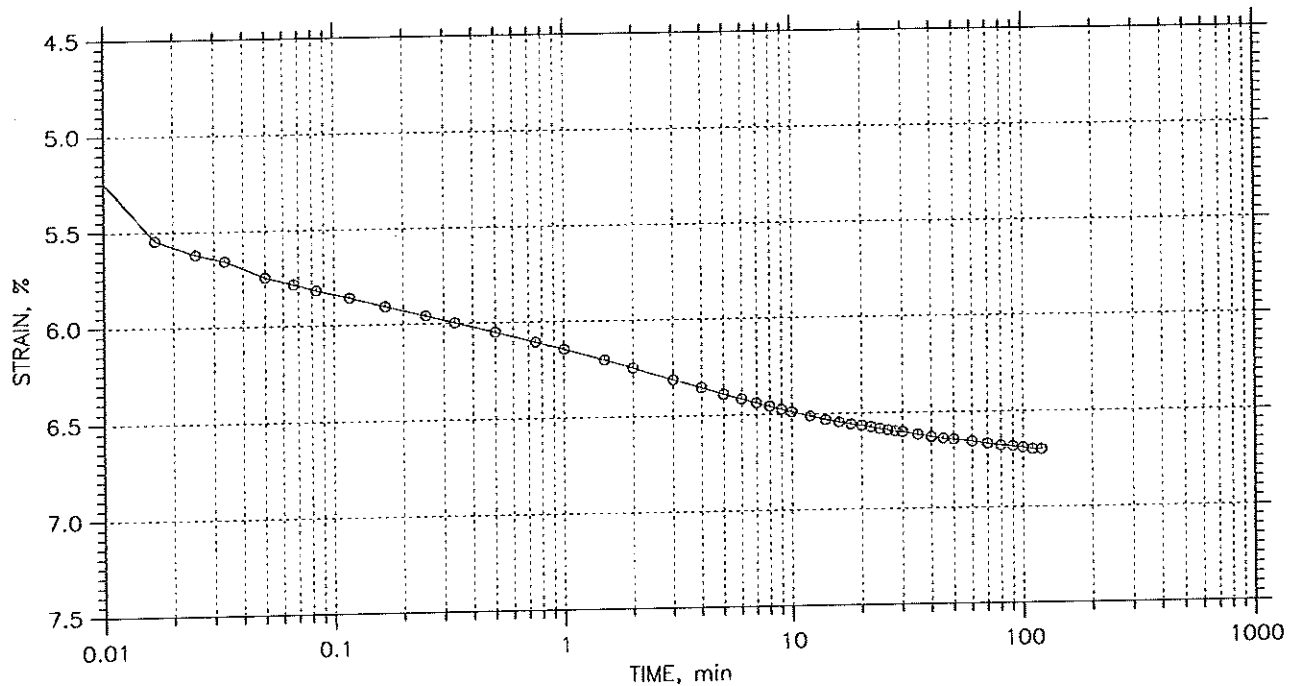
Project: Middletown H.S	Location: Middletown, CT	Project No.: GTX-4739
Boring No.: ---	Tested By: fy	Checked By: jdt
Sample No.: B-21A	Test Date: 06/17/2004	Depth: 5-7 ft
Test No.: C5	Sample Type: Tube	Elevation: ---
Description: Moist, brown clay and silt with gravel		
Remarks: ---		

CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 7 of 12

Stress: 8. tsf



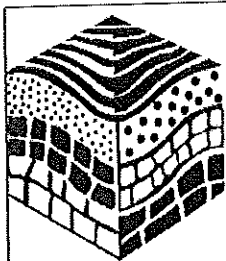
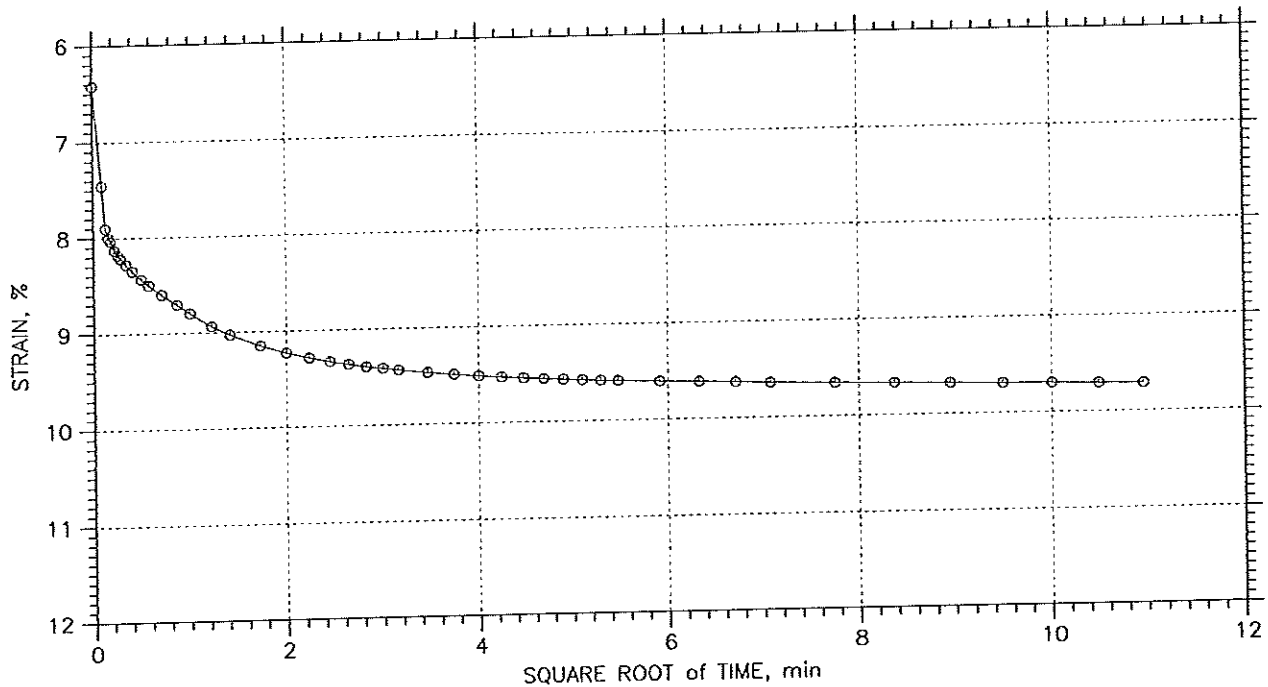
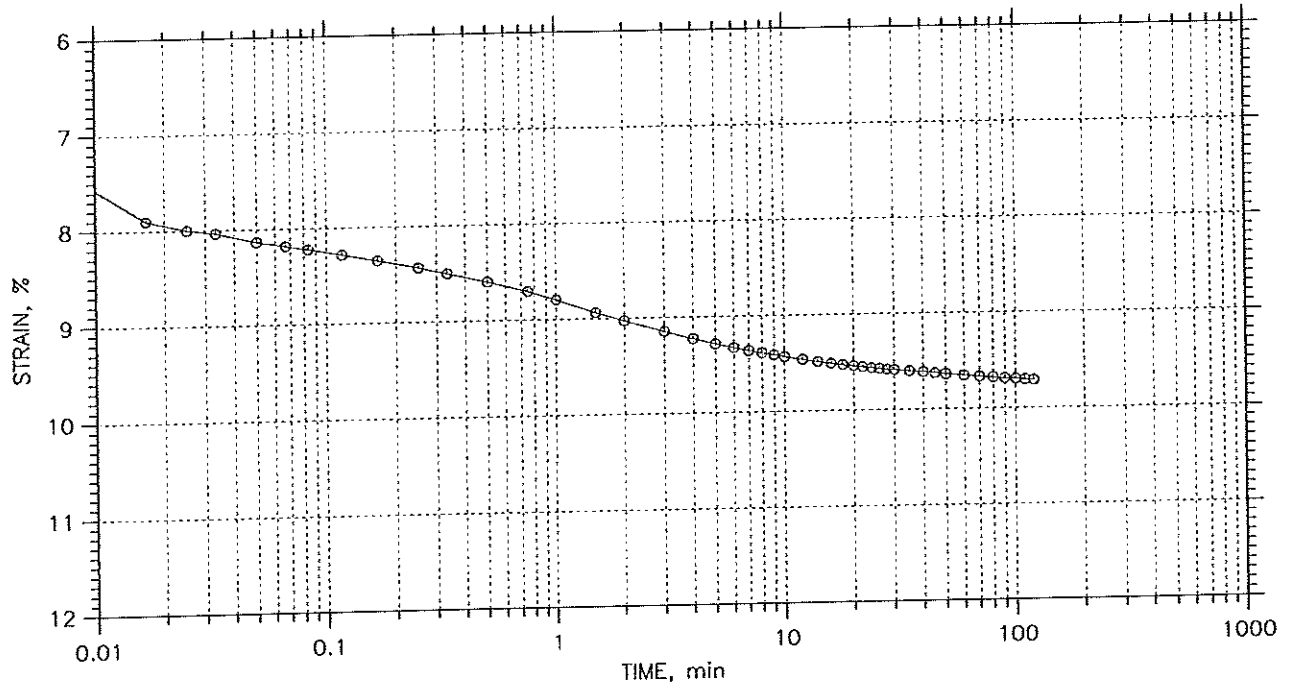
Project: Middletown H.S	Location: Middletown, CT	Project No.: GTX-4739
Boring No.: ---	Tested By: fy	Checked By: jdt
Sample No.: B-21A	Test Date: 06/17/2004	Depth: 5-7 ft
Test No.: C5	Sample Type: Tube	Elevation: ---
Description: Moist, brown clay and silt with gravel		
Remarks: ---		

CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 8 of 12

Stress: 16. tsf



Project: Middletown H.S

Location: Middletown, CT

Project No.: GTX-4739

Boring No.: ---

Tested By: fy

Checked By: jdt

Sample No.: B-21A

Test Date: 06/17/2004

Depth: 5-7 ft

Test No.: C5

Sample Type: Tube

Elevation: ---

Description: Moist, brown clay and silt with gravel

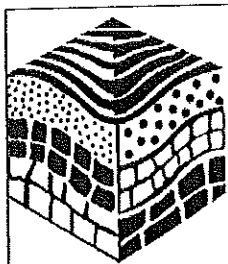
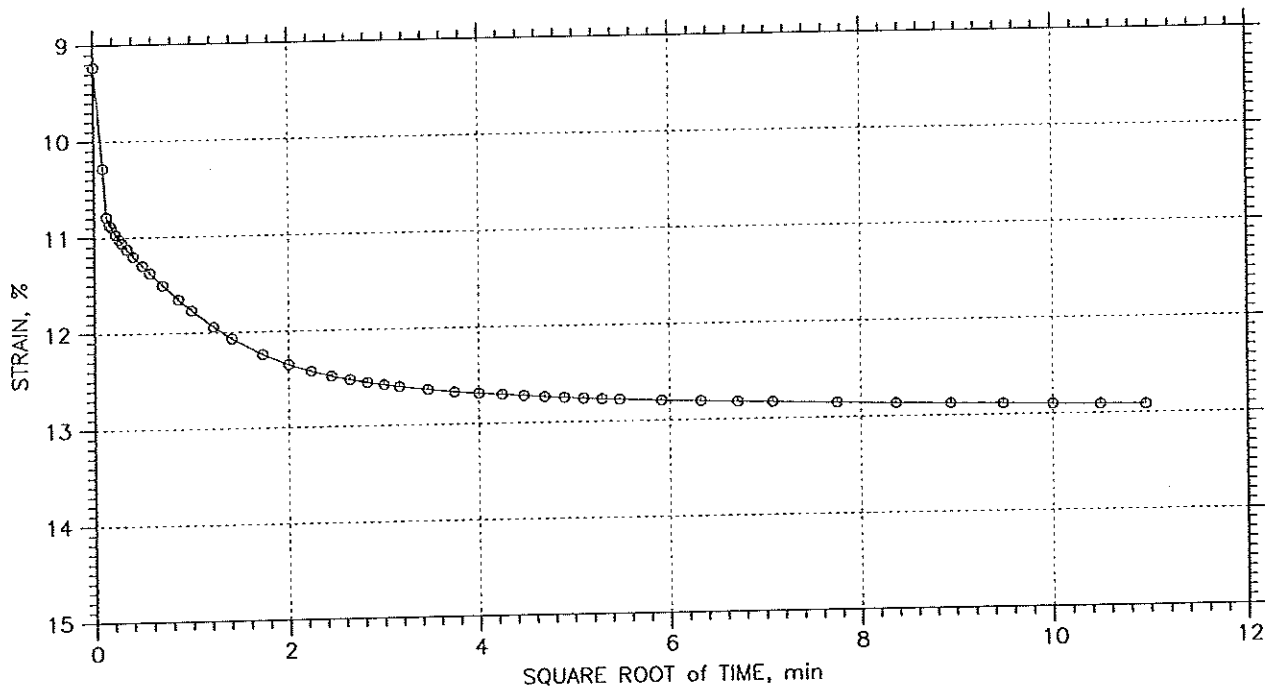
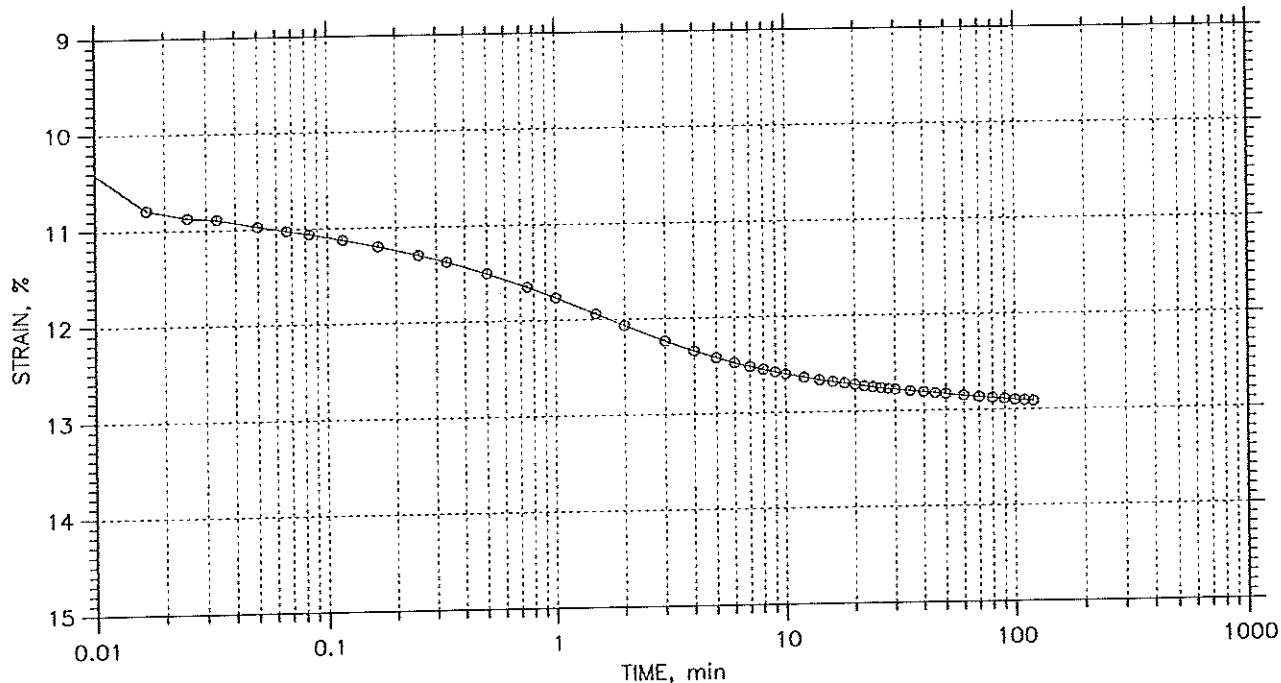
Remarks: ---

CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 9 of 12

Stress: 32. tsf



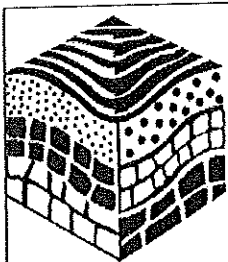
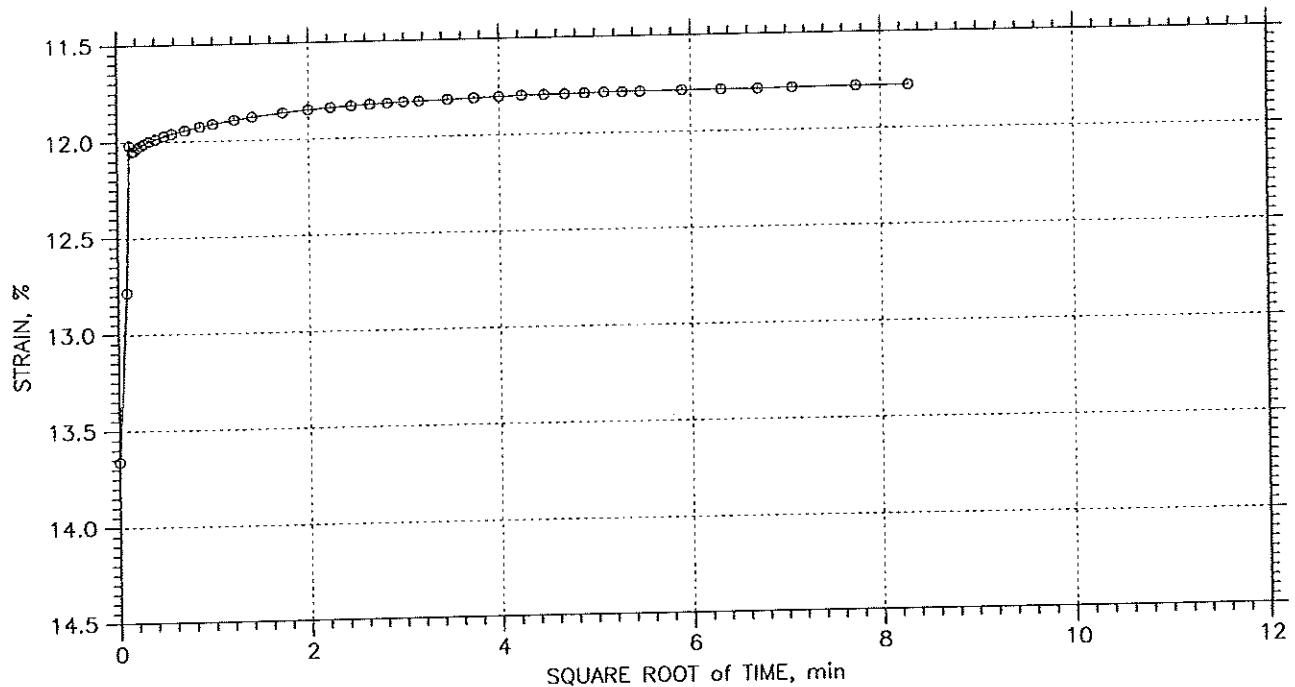
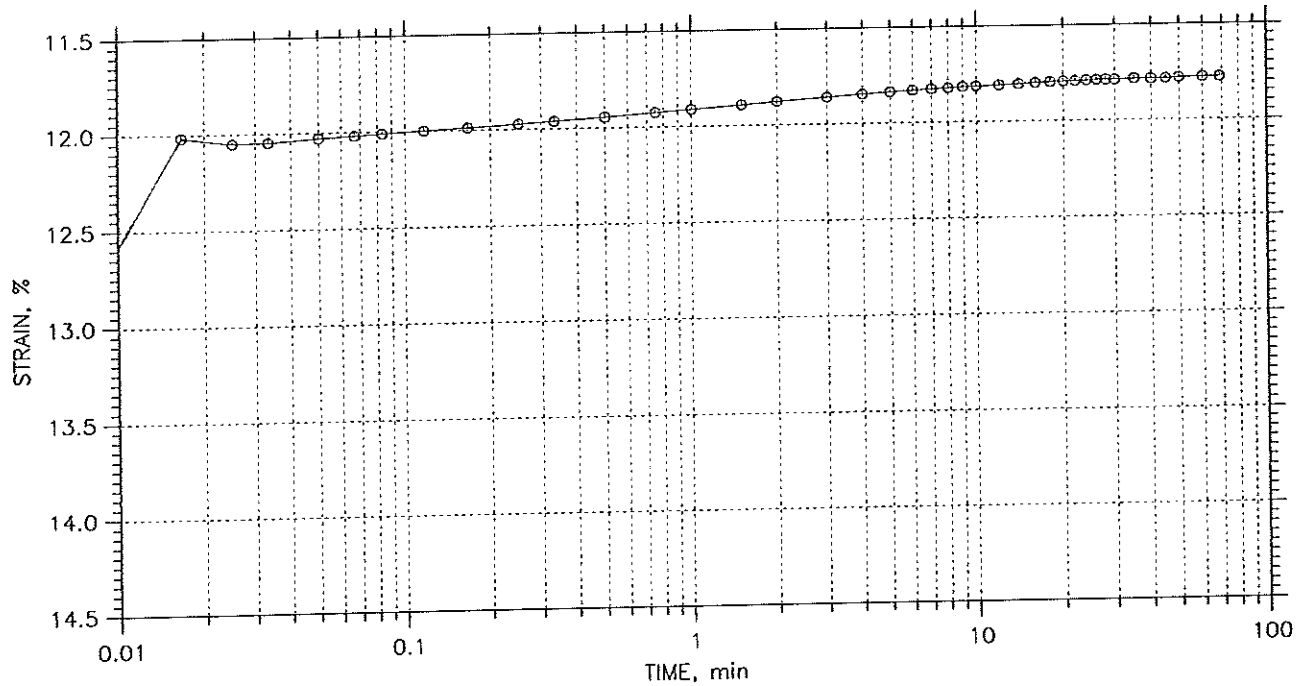
Project: Middletown H.S	Location: Middletown, CT	Project No.: GTX-4739
Boring No.: ---	Tested By: fy	Checked By: jdt
Sample No.: B-21A	Test Date: 06/17/2004	Depth: 5-7 ft
Test No.: C5	Sample Type: Tube	Elevation: ---
Description: Moist, brown clay and silt with gravel		
Remarks: ---		

CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 10 of 12

Stress: 8. tsf



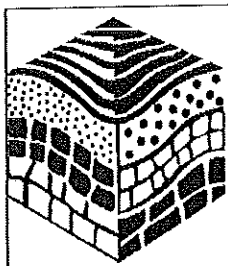
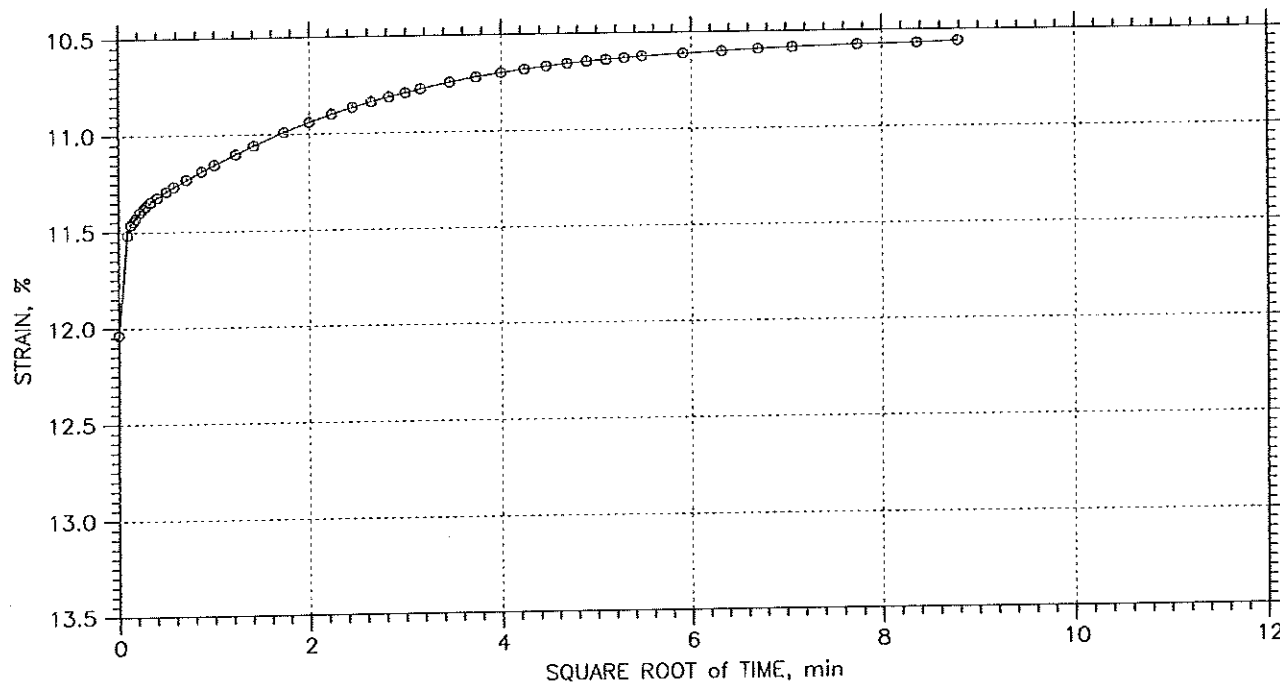
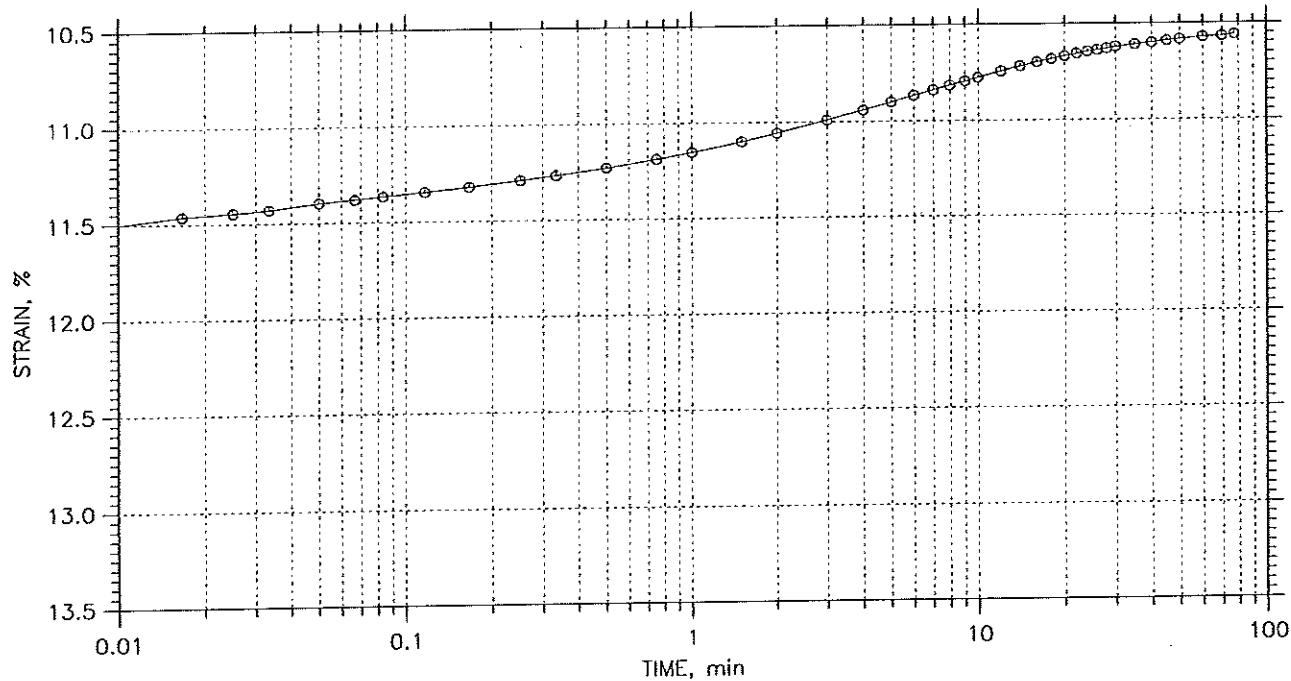
Project: Middletown H.S	Location: Middletown, CT	Project No.: GTX-4739
Boring No.: ---	Tested By: fy	Checked By: jdt
Sample No.: B-21A	Test Date: 06/17/2004	Depth: 5-7 ft
Test No.: C5	Sample Type: Tube	Elevation: ---
Description: Moist, brown clay and silt with gravel		
Remarks: ---		

CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 11 of 12

Stress: 2. tsf



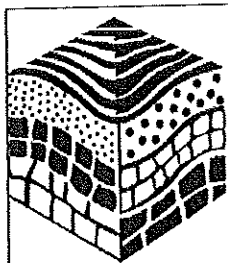
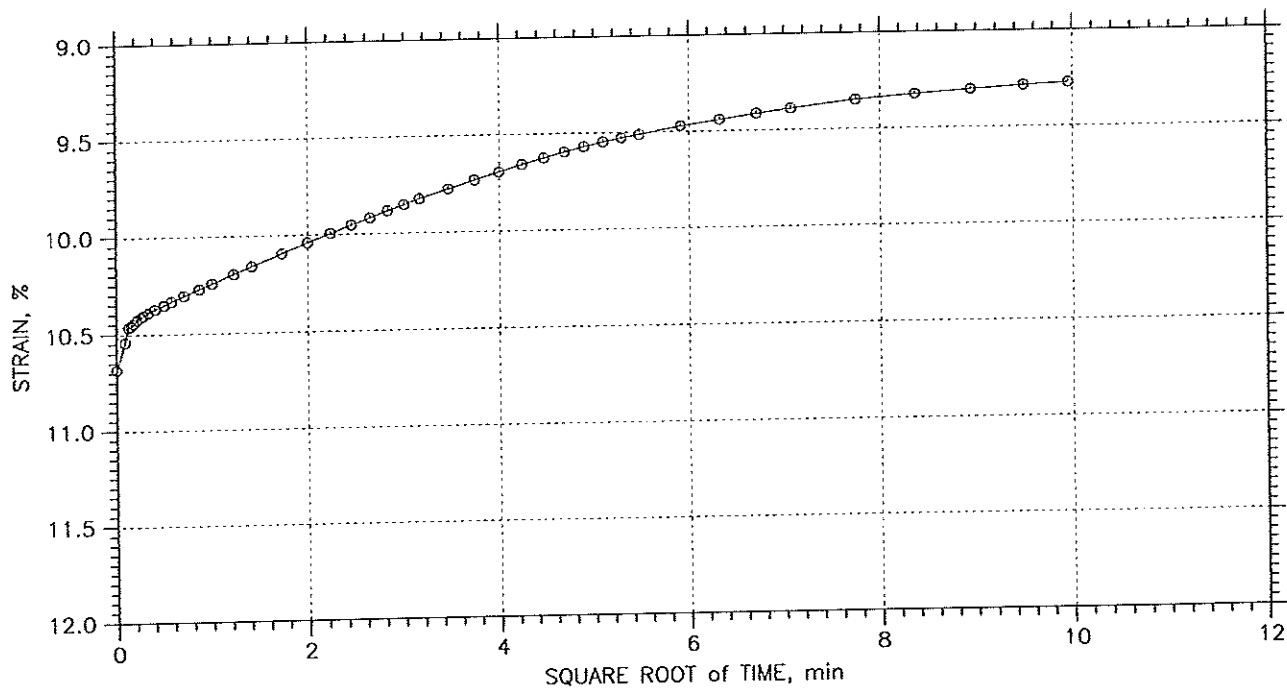
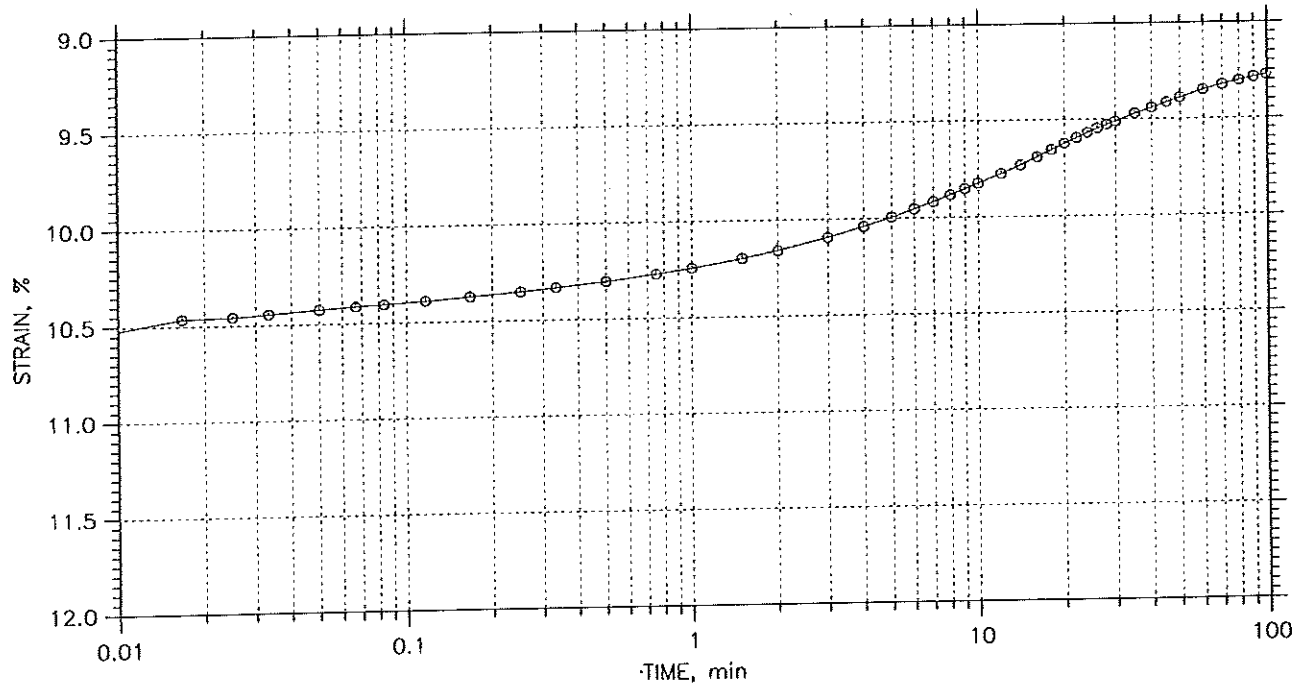
Project: Middletown H.S	Location: Middletown, CT	Project No.: GTX-4739
Boring No.: ---	Tested By: fy	Checked By: jdt
Sample No.: B-21A	Test Date: 06/17/2004	Depth: 5-7 ft
Test No.: C5	Sample Type: Tube	Elevation: ---
Description: Moist, brown clay and silt with gravel		
Remarks: ---		

CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 12 of 12

Stress: 0.5 tsf



Project: Middletown H.S	Location: Middletown, CT	Project No.: GTX-4739
Boring No.: ---	Tested By: fy	Checked By: jdt
Sample No.: B-21A	Test Date: 06/17/2004	Depth: 5-7 ft
Test No.: C5	Sample Type: Tube	Elevation: ---
Description: Moist, brown clay and silt with gravel		
Remarks: ---		

ATTACHMENTS