

**Special Meeting Minutes**  
**May 23, 2016 – 7:00 PM**  
**Oxford Town Hall**

**Members Present:** Chair George Mitchell, Robert Farnum, Jim Nicolari, Jim Westgate, Alcyne Lyon

**Members Absent:** Barry Schiff

**Alternates Present:** none

**Alternates Absent:** David McKane, Dawn Zdru

**Board Liaisons Present:** Dawn Higginson

**Consultants Present:** Bryan Nesteriak, Town Engineer; Michael Tribe and Patricia Monteres, Peter Gisolfi Associates

**Selectman Present:** Kathy Johnson

**Recording Secretary:** George Mitchell

**Meeting Called to Order** at 7:00 PM at Oxford Town Hall by G. Mitchell, followed by roll call.

**Audience of Citizens I:** none

**Acceptance of Minutes: Motion** to approve minutes April 7, 2016 monthly meeting made by R. Farnum; seconded by J. Nicolari. All aye; motion approved.

**Motion** to approve minutes April 25, 2016 special meeting made by R. Farnum; seconded by J. Nicolari. All aye; motion approved.

**Correspondence:** (3 invoices); Gisolfi Architects (2) and B&B Engineering (1)

**Library Director Report:** none

**Engineering Update:** Bryan Nesteriak reported that the Civil Engineering team has completed the formal Geotechnical report on our building site. The report will be published this week and is attached to these minutes for reference. Overall, the site is cleared for construction. Some rock has been discovered in one small area where the building will be. Blasting will most likely not be required, and hammer drilling may work to clear the rock from the area. Additionally, the storm water quality draining system has been redesigned to reduce the size, allowing the parking area to be made smaller and saving cost.

Bryan also described the first steps of the construction project time line:

- 1) Limited Tree Removal – 1 week
- 2) Grubbing and Stump removal – 1 week

3) Site Excavation –

3 weeks

**Architectural Update:** Michael Tribe provided the results from the construction estimator on three construction methods.

- 1) Conventional Construction was the highest cost approach.
- 2) Wood Laminated Beams – Was the second highest cost due to the water and moisture barriers needed. The Wood Beam approach estimate is \$4.5m.
- 3) Steel Pre-Fabricated structure and roof was quoted at \$3.5m. This approach uses a steel structure with a panelized metal roof system. The walls and floors would be made using conventional methods.

Several add/deletes options were discussed at a very high level: Interior Door material \$26K, Lighting downgrade \$59.7k, Entryway separate HVAC unit \$89K, Some reductions in landscaping \$50k, Signage changes and elimination of the sound system \$18k. After a lengthy discussion the committee agreed to focus Gisolfi on the steel pre-fabricated option, and to prepare to have a detailed cost review on this option at our next meeting.

**Motion:** was made to have Gisolfi's focus their design and analysis on the Nucor steel frame/roof solution for discussion and value engineering review at our June 6<sup>th</sup> meeting by R. Farnum and seconded by J. Nicolari. All aye; motion passed.

**Budget:**

Invoices:

- 1) Gisolfi for services performed in March 2016 = \$13,096.00

Motion to approve made by: A. Lyon, seconded by Jim Nicolari, All aye; motion passed

- 2) Gisolfi for services performed in April 2016 = 30,926.13

Motion to approve made by: A. Lyon, seconded by Jim Nicolari, All aye; motion passed

3) B&B Engineering for the Geotechnical report = \$5,485

Motion to approve made by: A. Lyon, seconded by Jim Nicolari, All aye; motion passed

**Budget Review:** none

**Old Business:** none

**New Business:** none

**Audience of Citizens II:** none

A. Lyon motioned to adjourn at 8:00pm; R. Farnum seconded. All Aye.

Respectfully submitted,

George Mitchell, Acting Recording Secretary  
Minutes Subject to Approval

16 MAY 27 AM 11:07  
TOWN OF OXFORD, CT  
*Margaret A. West*  
TOWN CLERK



May 24, 2016

Town of Oxford  
486 Oxford Road  
Oxford, Connecticut 06478

Attn: George Mitchell  
Chairman  
Oxford Public Library Building Committee

Re: Oxford Public Library  
Great Oak Road  
Oxford, Connecticut

Dear Mr. Mitchell:

In accordance with our proposal dated February 2, 2016 we have completed our geotechnical evaluation for the proposed Oxford Public Library in Oxford, Connecticut. The attached report, "Geotechnical Engineering Report, Oxford Public Library, Oxford, Connecticut", summarizes our findings.

Should you have any question, please do not hesitate to contact us.

Sincerely,

Thomas J. Slekis, P.E.  
Senior Project Engineer

Bryan Nesteriak, P.E., L.S.  
Principal

cc: Michael Tribe, PGA

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# GEOTECHNICAL ENGINEERING REPORT

for

Oxford Public Library  
Great Oak Road  
Oxford, Connecticut

May 24, 2016

Prepared for:  
Town of Oxford  
Oxford, Connecticut

Prepared by:



**E N G I N E E R I N G**

39 New Haven Road  
Seymour, Connecticut 06483  
Phone: (203) 881-8145  
Fax: (203) 888-0436  
[www.bbengrs.com](http://www.bbengrs.com)

## **1.0 Introduction**

### **1.1 General**

This report presents the results of a geotechnical evaluation conducted for the proposed Oxford Public Library in Oxford, Connecticut. The site is located on the east side of Great Oak Road, north of Lily Park and east across Great Oak Road from Great Oak School.

### **1.2 Proposed Development**

The proposed construction consists of a one-story library building with a partial basement that will be located on the south end of the building. The first floor elevation is proposed to be +518.0 feet with the basement elevation at +508.0 feet. A proposed parking area is proposed on the west side of the library and will have an approximate elevation of +517.0 feet. These elevations are based on the NAVD 1988 datum.

### **1.3 Scope of Study**

This study analyzes subsurface information to determine the physical properties and characteristics of subsurface materials and evaluates this information for the purpose of establishing geotechnical design criteria. Specifically, conclusions and recommendations are presented regarding the following:

1. Foundation type.
2. Slabs-on-grade.
3. Lateral earth pressure for design of walls below grade, including backfill, compaction and subsurface drainage.
4. Earthwork.
5. Seismic coefficient and potential for soil liquefaction.
6. Other subsurface conditions which may affect design or construction of the proposed structures.

This report has been prepared for the exclusive use of the Town of Oxford, for specific application to the proposed development of the Oxford Public Library property on Great Oak Road in Oxford, Connecticut, in accordance with generally accepted geotechnical engineering practices in this area. In the event that the nature, design or location of the proposed construction changes, the conclusions and recommendations in this report may no longer be valid.



## **2.0 Geotechnical Investigation**

### **2.1 Test Borings**

Nine test borings, which includes one offset, were taken for this study. Test borings B-1 through B-8 were taken by Hardiman Company & Associates on April 28, 2016. These borings were monitored by B & B Engineering personnel. The locations of the explorations are shown on the attached Drawing 1. Logs are provided in Appendix A.

The test borings were advanced using a 2-1/4 inch I.D. hollow stem auger. Samples were taken with a 1-3/8 inch I.D. split spoon sampler driven (normally) 24 inches into the ground with a 140 lb. automatic drop hammer falling 30 inches. Blows per 6 inches on the sampler were recorded. The foregoing constitutes a standard penetration test from which relative density and other soil characteristics can be estimated.

During test borings B-1 through B-6, split spoon samples were taken. During borings B-7, B-7A and B-8, only an auger was used to probe for the top of bedrock elevation.

Surface elevations and locations of the borings were obtained by a surveyor. Surface elevations of the borings are listed on the logs.

### **2.2 Water Level Readings**

No water was observed in any of the borings performed for this report. It should be noted that future water level readings may vary due to seasonal fluctuations, and changes due to construction.

### **2.3 Laboratory Testing**

If it is determined that excavated material is to be reused for on-site controlled fill purposes, the material will need to be stockpiled and laboratory testing will need to be performed to determine the suitability of reuse.

## **3.0 Site and Subsurface Conditions**

### **3.1 Site**

The center of the site is the high point, and is at an existing approximate elevation of +525.5 ft. The site slopes outwards from there, with a steep grade to the east and south. The low point is at approximate elevation +490.0 ft. in the southeast corner.

The site itself has not been developed and is currently wooded. Great Oak Road is a minor local road that connects Governors Hill Road to Hogs Back Road and is access to two of the local public schools, as well as the Oxford Town Garage.



### **3.2 Subsurface Conditions**

The test borings provide a generalized subsurface profile that consists, in descending order, of: topsoil; loam; naturally deposited sand; glacial till and decomposed or fractured rock.

The naturally deposited soils beneath the topsoil and loam consist of medium dense to very dense sand with varying amounts of gravel and silt.

Bedrock in this area consists of schist and gneiss. The borings indicate that the top several feet of bedrock may have weathered to a decomposed state.

## **4.0 Evaluation**

### **4.1 Foundations**

The existing topsoil and loam are unsuitable for support of the proposed building and slabs-on-grade. These materials should be removed and replaced with controlled fill. Controlled fill is defined herein as a well graded sand and gravel mixture which is placed and compacted in thin lifts, with each lift tested to verify that densities of at least 95% of the maximum density obtained by test, ASTM D 1557, are attained.

Spread footings bearing on medium dense, naturally deposited soil, controlled fill or bedrock may be proportioned on the basis of an allowable bearing pressure of 6000 psf. All footings bearing on soil must be embedded at least 3.5 feet below grade for frost considerations. All footing subgrades should be viewed by a geotechnical engineer prior to casting.

### **4.2 Bedrock Removal**

Some bedrock may need to be removed in the central area of the building where the basement is to be located. If bedrock is encountered it is likely that it can be removed by hoe-ramming, as an alternative to blasting. If blasting is chosen, it must be conducted in a controlled manner in regards to pre- and post-blast surveys, notification of neighbors, seismic monitoring, permissible peak particle velocities and reporting of complaints.

### **4.3 Floor Slabs and Permanent Ground Water Control**

Suitable subgrades for slabs-on-grade include naturally deposited granular soil and controlled fill. A vapor barrier and a minimum of 6 inches of base course should be placed beneath all interior slabs-on-grade.

### **4.4 Lateral Earth Pressures on Foundation Walls**

All backfill placed behind foundation walls must consist of free-draining granular materials. The on-site granular soils which will be excavated during construction contain silt and are generally unsuitable for this use. If free-draining granular materials are excavated they should be stockpiled separately.





Restrained foundation walls should be designed on the basis of lateral pressures equivalent to a fluid pressure of 55 psf per foot of depth plus a uniform pressure equal to one half of any surcharge. Walls which are free to rotate after placement of backfill may be designed on the basis of an equivalent fluid pressure of 35 psf per foot of depth plus a uniform pressure equal to one third of any surcharge. These values of lateral earth pressure are based on a free draining backfill being used and footing drains installed.

#### **4.5 Seismic Considerations**

The underlying granular soils and bedrock are sufficiently dense to remain stable during the Connecticut Building Code design earthquake. The naturally deposited granular soils are sufficiently stable to characterize with seismic Site Class B.

#### **5.0 Summary**

Based upon our review of available subsurface information and our understanding of the proposed construction, we offer the following conclusions and recommendations:

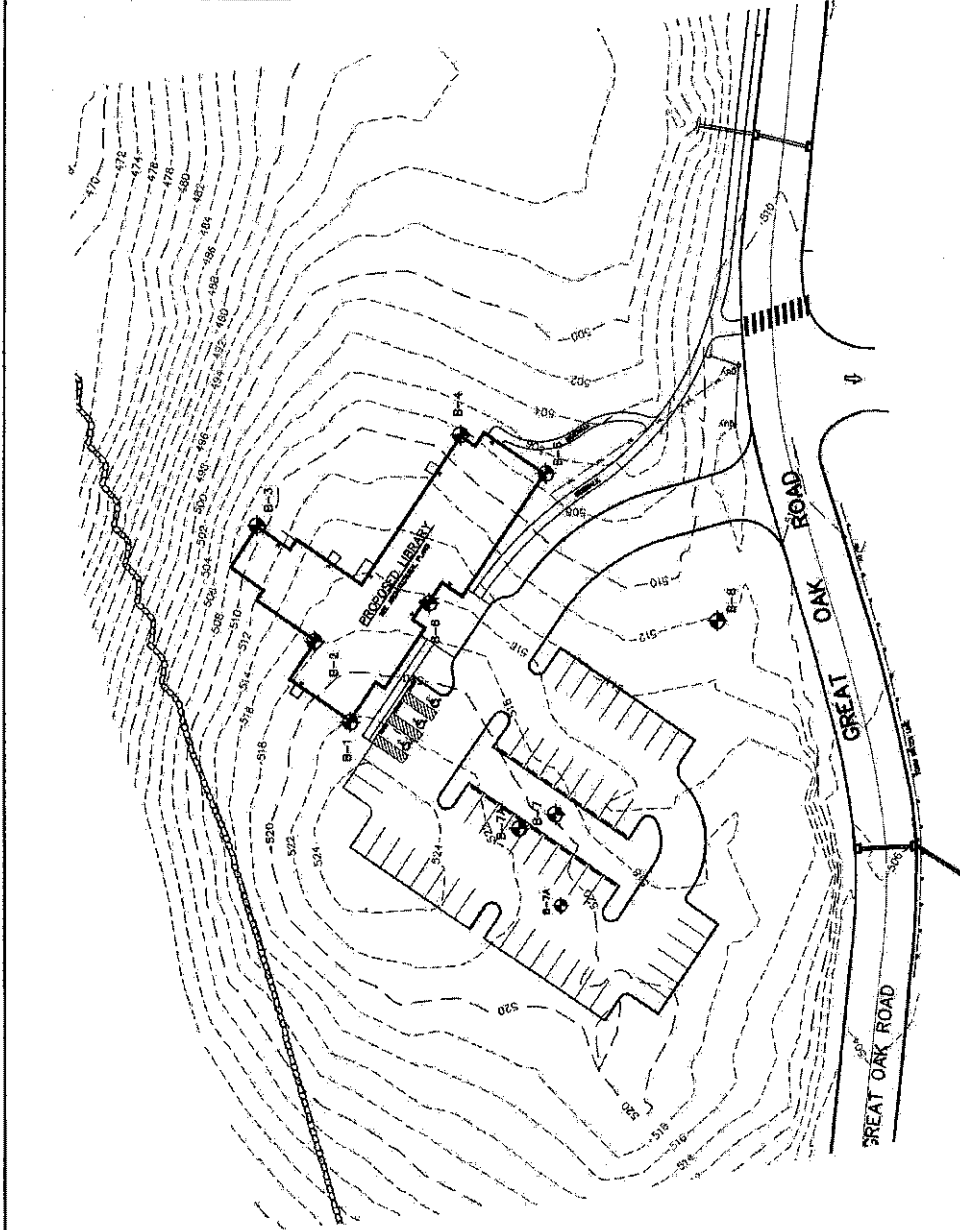
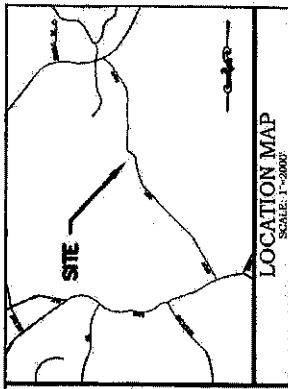
1. The existing topsoil and loam are unsuitable for support of the proposed buildings and slabs-on-grade. The unsuitable materials can be removed and replaced with controlled fill. Excavated materials should be monitored with the cleaner materials stockpiled separately if it is determined that they will be used for controlled fill purposes.
2. Support the structure on spread footings bearing on naturally deposited granular soil or controlled fill. Proportion footings on the basis of an allowable bearing pressure of 6000 psf. All footing subgrades should be viewed by a geotechnical engineer prior to casting. All footings exposed to frost must be embedded a minimum of 3.5 feet.
3. Acceptable subgrades for slabs-on-grade will consist of naturally deposited granular soil or controlled fill. Place a vapor barrier and 6 inch base course beneath all interior slabs-on-grade.
4. Design braced foundation walls on the basis of lateral soil pressures equivalent to a fluid pressure of 55 psf per foot of depth plus a uniform pressure equal to one half of any surcharge. Retaining walls which are free to rotate after placement of backfill may be designed on the basis of an equivalent fluid pressure of 35 psf per foot of depth plus a uniform pressure equal to one third of any surcharge. These values of lateral earth pressure are based on a free draining backfill being used and footing drains installed.
5. IBC Site Class B should be used to determine the minimum earthquake force for design.
6. The on-site soils were found to be not susceptible to liquefaction during the Building Code earthquake.
7. Provide B & B Engineering with an opportunity to review final plans and specifications prior to bidding to determine that our geotechnical recommendations have been properly



interpreted and implemented.

8. Engage a geotechnical engineer to provide field monitoring services for the foundation and earthwork phases of construction and to make on site design modifications in the event unexpected conditions are encountered.





Date 5/24/2016  
 Scale 1"=60'  
 Job No. 654  
**FIGURE 1**

**TEST BORING LOCATION PLAN**  
 OF  
**OXFORD PUBLIC LIBRARY**  
 OXFORD, CONNECTICUT  
 PREPARED FOR  
 TOWN OF OXFORD  
 486 OXFORD ROAD  
 OXFORD, CONNECTICUT 06478

39 New Haven Road  
 Seymour, CT 06483  
 P: (203) 861-8145  
 F: (203) 868-0438  
 www.bengs.com  
**BENG**  
**ENGINEERING**  
 Land Surveying, Professional Engineering & Land Use Consultants

**LEGEND**  
 B-1 - Test Boring Number  
 - Test Boring Location

# APPENDIX A

## Test Boring Logs

[illegible]

[illegible]

[illegible]

[illegible]



B&B ENGINEERING 39 NEW HAVEN ROAD SEYMOUR, CONNECTICUT 06483						TEST BORING REPORT			BORING NO. B-5						
PROJECT <u>Oxford Library</u>					GROUNDWATER READINGS					FILE NO. <u>654</u>					
LOCATION <u>Oxford, Connecticut</u>					DATE <u>4/28/2016</u>		TIME <u>1130</u>		DEPTH <u>None Observed</u>		SHEET NO. <u>1</u> OF <u>1</u>				
CLIENT <u>Town of Oxford</u>										LOCATION <u>SEE PLAN</u>					
CONTRACTOR <u>Hardiman Company &amp; Associates Inc.</u>										ELEVATION <u>507.0'</u>					
ITEM		CASING	DRIVE SAMPLER	CORE BARREL	DRILLING EQUIPMENT & PROCEDURES					DATUM <u>NAVD88</u>					
TYPE		HSA	SS		RIG TYPE <u>Geoprobe 7822DT</u>					DATE <u>4/28/16</u> TO <u>4/28/16</u>					
INSIDE DIAMETER (IN)		2-1/4	1-3/8		BIT TYPE					START <u>1045</u> FINISH <u>1130</u>					
HAMMER WEIGHT (LB)		--	140		DRILL HEAD					DRILLER <u>Anthony Scalfe</u>					
HAMMER FALL (IN)		--	30		HAMMER TYPE <u>Automatic DH103</u>					B&B REP <u>Thomas Slekis, P.E.</u>					
D E P T H	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE TYPE NO. & REC.	SAMPLE DEPTH (FT)	VISUAL DESCRIPTION AND REMARKS					ELEV./DEPTH (FT)	STRATUM DESCRIPTION				
0		1	SS1	0'-2'	Top 6" - Dark brown, fine to medium SAND, some Silt, trace fine Gravel, trace Root, trace Vegetation. (Topsoil) Bottom 4" - Brown, orange, fine to medium SAND, some Silt, little fine Gravel. (Loam) Top 4" - Brown, orange, fine to medium SAND, some Silt, little fine Gravel. (Loam) Bottom 6" - Gray, brown, fine to coarse SAND, little fine Gravel, little Silt. (Till)					0.5'	TOPSOIL				
		1	10"												
		1													
		2													
		3	SS2	2'-3.5'	Very dense, gray, brown, fine to coarse SAND, and fine to coarse Gravel, trace Silt. (Till)					3.0'	LOAM				
		3	10"												
		100/6"													
5		26	SS3	5'-7'							TILL				
		22	18"												
		23													
		25													
10		100/5"	SS4	10'-10.4'	Very dense, gray, fine to coarse SAND, and fine to coarse Gravel, trace Silt. (Residual Soil)					10.0'	DECOMPOSED ROCK				
			3"												
15										11.0'	End Of Boring Auger Refusal				
20															
25															

[illegible]

<b>B&amp;B ENGINEERING</b> <b>39 NEW HAVEN ROAD</b> <b>SEYMOUR, CONNECTICUT 06483</b>				<b>TEST BORING REPORT</b>			BORING NO. B-7							
PROJECT <u>Oxford Library</u> LOCATION <u>Oxford, Connecticut</u> CLIENT <u>Town of Oxford</u> CONTRACTOR <u>Hardiman Company &amp; Associates Inc.</u>				GROUNDWATER READINGS <table border="1"> <tr> <th>DATE</th> <th>TIME</th> <th>DEPTH</th> </tr> <tr> <td>4/28/2016</td> <td>1335</td> <td>None Observed</td> </tr> </table>			DATE	TIME	DEPTH	4/28/2016	1335	None Observed	FILE NO. <u>654</u> SHEET NO. <u>1</u> OF <u>1</u> LOCATION <u>SEE PLAN</u> ELEVATION <u>519.5'</u> DATUM <u>NAVD88</u> DATE <u>4/28/16</u> TO <u>4/28/16</u> START <u>1330</u> FINISH <u>1335</u> DRILLER <u>Anthony Scaife</u> B&B REP <u>Thomas Slekis, P.E.</u>	
DATE	TIME	DEPTH												
4/28/2016	1335	None Observed												
ITEM		CASING	DRIVE SAMPLER	CORE BARREL	DRILLING EQUIPMENT & PROCEDURES									
TYPE		HSA	SS		RIG TYPE Geoprobe 7822DT									
INSIDE DIAMETER (IN)		2-1/4	1-3/8		BIT TYPE									
HAMMER WEIGHT (LB)		--	140		DRILL HEAD									
HAMMER FALL (IN)		--	30		HAMMER TYPE Automatic DH103									
DEPTH	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE TYPE NO. & REC.	SAMPLE DEPTH (FT)	VISUAL DESCRIPTION AND REMARKS			ELEV./DEPTH (FT)						
0					Augering to probe for bedrock. Auger refusal at 3.0' on assumed bedrock.									
5														
10														
15														
20														
25														
								3.0'						
								End Of Boring Auger Refusal						

B&B ENGINEERING 39 NEW HAVEN ROAD SEYMOUR, CONNECTICUT 06483				TEST BORING REPORT			BORING NO. B-7A	
PROJECT <u>Oxford Library</u>				GROUNDWATER READINGS			FILE NO. <u>654</u>	
LOCATION <u>Oxford, Connecticut</u>				DATE	TIME	DEPTH	SHEET NO. <u>1</u> OF <u>1</u>	
CLIENT <u>Town of Oxford</u>				4/28/2016	1340	None Observed	LOCATION <u>SEE PLAN</u>	
CONTRACTOR <u>Hardiman Company &amp; Associates Inc.</u>							ELEVATION <u>521.0'</u>	
ITEM		CASING	DRIVE SAMPLER	CORE BARREL	DRILLING EQUIPMENT & PROCEDURES		DATUM <u>NAVD88</u>	
TYPE		HSA	SS		RIG TYPE <u>Geoprobe 7822DT</u>		DATE <u>4/28/16</u> TO <u>4/28/16</u>	
INSIDE DIAMETER (IN)		2-1/4	1-3/8		BIT TYPE		START <u>1335</u> FINISH <u>1340</u>	
HAMMER WEIGHT (LB)		--	140		DRILL HEAD		DRILLER <u>Anthony Scalfe</u>	
HAMMER FALL (IN)		--	30		HAMMER TYPE <u>Automatic DH103</u>		B&B REP <u>Thomas Slekis, P.E.</u>	
D E P T H	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE TYPE NO. & REC.	SAMPLE DEPTH (FT)	VISUAL DESCRIPTION AND REMARKS		ELEV./ DEPTH (FT)	STRATUM DESCRIPTION
0					Augering to probe for bedrock. Auger refusal at 5.0' on assumed bedrock.			
5							5.0'	End Of Boring Auger Refusal
10								
15								
20								
25								

B&B ENGINEERING 39 NEW HAVEN ROAD SEYMOUR, CONNECTICUT 06483				TEST BORING REPORT			BORING NO. B-8	
PROJECT <u>Oxford Library</u> LOCATION <u>Oxford, Connecticut</u> CLIENT <u>Town of Oxford</u> CONTRACTOR <u>Hardiman Company &amp; Associates Inc.</u>				GROUNDWATER READINGS DATE <u>4/28/2016</u> TIME <u>1400</u> DEPTH <u>None Observed</u>			FILE NO. <u>654</u> SHEET NO. <u>1</u> OF <u>1</u> LOCATION <u>SEE PLAN</u> ELEVATION <u>513.0'</u> DATUM <u>NAVD88</u> DATE <u>4/28/16</u> TO <u>4/28/16</u> START <u>1350</u> FINISH <u>1400</u> DRILLER <u>Anthony Scaife</u> B&B REP <u>Thomas Slekis, P.E.</u>	
ITEM		CASING	DRIVE SAMPLER	CORE BARREL	DRILLING EQUIPMENT & PROCEDURES			
TYPE		HSA	SS		RIG TYPE <u>Geoprobe 7822DT</u>			
INSIDE DIAMETER (IN)		2-1/4	1-3/8		BIT TYPE			
HAMMER WEIGHT (LB)		--	140		DRILL HEAD			
HAMMER FALL (IN)		--	30		HAMMER TYPE <u>Automatic DH103</u>			
DEPTH	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE TYPE NO. & REC.	SAMPLE DEPTH (FT)	VISUAL DESCRIPTION AND REMARKS			ELEV./DEPTH (FT)
0					Augering to probe for bedrock. Auger refusal at 3.5' on assumed bedrock.			
5								3.5'
10								End Of Boring Auger Refusal
15								
20								
25								