

# **Weber Engineering Associates, LLC**

December 19, 2002

Mr. Robert Peirce  
Flansburgh Associates  
77 North Washington St.  
Boston, MA 02114

Re: Preliminary Geotechnical Explorations  
Reading Memorial High School  
Reading, Massachusetts

Dear Mr. Peirce:

The purpose of this letter is to summarize the findings of the preliminary explorations conducted at the referenced site. This work was authorized and conducted in accordance with the scope of services and terms stated in our proposal to you dated December 3, 2002.

## **Background**

We understand that the Town of Reading is considering constructing an addition between the field house and the school administrative offices as well as an addition in an open courtyard area. Concern was raised regarding the potential presence of peat lying within the area located between the field house and the administrative offices where there are many underground utilities.

Although the original preliminary exploration program outlined by FAI consisted of 1 boring in the courtyard and 4 borings within the lower parking area, only 2 borings were completed because of the numerous and uncertain location of underground utilities. As a result 1 boring was taken in the courtyard and 1 boring was taken within the lower parking area.

The location of the explorations is shown on the attached Exploration Location Plan. Soil test boring logs were prepared by Weber Engineering Associates, LLC and are also attached to this letter for reference. The findings are discussed herein.

## **Courtyard Area**

Boring B-1 was conducted within the courtyard area at the approximate location shown on the Exploration Location Plan. Three attempts were made with the hollow flight augers to drill beyond a depth of 4.5-ft. The first attempt was terminated at a depth of 4.5-ft below ground surface when the auger encountered refusal. In this case, refusal is the inability to advance the borehole further without using rock coring methods.

During the second and third attempt, the borehole was first moved a distance of 5-ft and then 10-ft. In each subsequent attempt, auger refusal was encountered at a depth of approximately 4-ft and 3-ft below ground surface. In most cases, if a boulder caused refusal, when the location was moved, the borehole could be advanced further. However, since each of these three attempts encountered refusal at relatively the same depth, it is our opinion that the nature of the refusal material is probably bedrock rather than boulders. Coring was not attempted to verify the nature of the material.

Based on the limited explorations undertaken, it appears that construction within the courtyard area might encounter bedrock at a relatively shallow depth. You should be aware however that the bedrock surface is probably uneven and the depth to bedrock will vary.

### **Lower Parking Area**

Because of the numerous underground utilities and their uncertain location within this area, one boring rather than 4 borings was undertaken. Dig Safe and Town representatives declared the location of boring B-2 free of utilities.

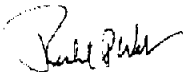
Similar to the courtyard area, the first borehole attempt encountered auger refusal at a depth of 5-ft below ground surface. The material at this location consists of approximately 2-ft of fill underlain by glacial till to the depth explored (5-ft). The borehole was moved approximately 5-ft and continued to a depth of 16.5-ft below ground surface. The nature of the refusal material within this area is probably a boulder. The material lying below the surface fill consists of very dense glacial till and we found no visual evidence of peat at this location. Groundwater was encountered at a depth of 5-ft below ground surface.

As explained previously these explorations were not widespread within this area because of the utilities. The fact that we did not encounter peat at boring B-2 does not preclude the possibility that peat could be present closer to the field house. If peat was encountered and it was to be removed from within the building footprint, the presence of a high groundwater level will require a dewatering effort. Dewatering might also be required during construction even if peat is not present depending upon the building grades.

We are pleased to have this opportunity to assist. If you have any questions regarding this letter or need additional information, please do not hesitate to call.

Very truly yours,

**WEBER ENGINEERING ASSOCIATES, LLC**

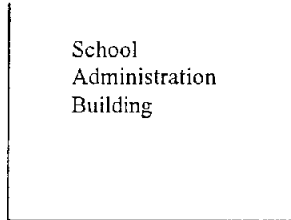
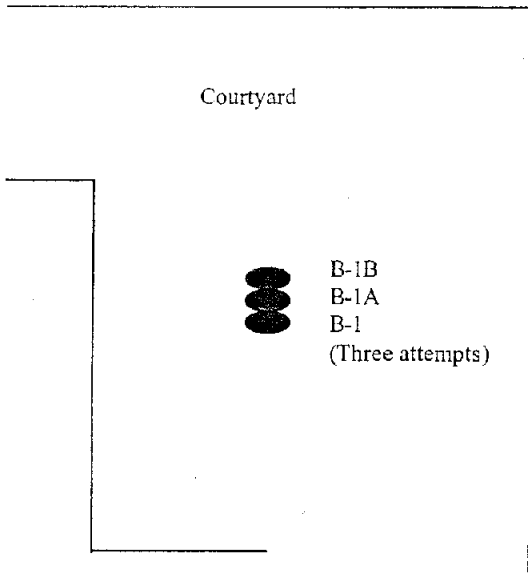


Richard P. Weber, P.E., Manager

Attachments:

Exploration Location Plan  
Test Boring Logs

Phone (508) 429-4573 Fax (888) 808-7384 92 Briarcliff Lane, Holliston MA 01746



B-2, B-2A (Two attempts)



Notes:

1. Drilling conducted by Soil Exploration Corp. on December 19, 2002.
2. Locations of explorations based on tape measurement and are approximate.

Weber Engineering Associates, LLC  
Geotechnical Engineers  
Holliston, Massachusetts

No Scale  
December 2002

Exploration Location Plan  
Reading Memorial High School  
Reading, Massachusetts

**TEST BORING LOG**

Sheet 1

Weber Engineering Associates, LLC  
Geotechnical Engineers  
Holliston, Massachusetts

Reading High School  
Reading, Massachusetts

**BORING NO. B-1**

**DATE: 12/19/02**

Ground Elevation:  
Date Started: 12/19/02  
Date Finished: 12/19/02  
Driller: Soil Exploration Corp

**Groundwater Observations**

Date	Depth (ft)	Casing	Stabilization Time
12/19	Dry		At completion

Depth (ft)	Sample				Type	Strata	Visual Description	Note
	No.	Pen / Rec.	Depth	Blows / 6"				
0								
1	1	24/18	0-2	11-7-12-18	Ss	Fill	6" topsoil to brown fine to medium SAND little Silt little Gravel	
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
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**Notes:**

**Sample Type / Field Test**  
ss = split spoon  
A = Auger  
U = Undisturbed  
Tv = Pocket Torvane  
Pp = Pocket Penetrometer

**Proportioned Used**  
Trace 0 - 10%  
Little 10 - 20 %  
Some 20 - 35%  
And 35-50%

	Casing	Sampler	Core
<b>Type</b>	HSA	ss	
<b>ID</b>	4	1-3/8"	
<b>Hammer</b>		140 lbs.	

**TEST BORING LOG**

Sheet 1

Weber Engineering Associates, LLC  
Geotechnical Engineers  
Holliston, Massachusetts

Reading High School  
Reading, Massachusetts

**BORING NO. B-2**

**DATE: 12/19/02**

Ground Elevation:  
Date Started: 12/19/02  
Date Finished: 12/19/02  
Driller: Soil Exploration Corp

**Groundwater Observations**

Date	Depth (ft)	Casing	Stabilization Time
12/19	5	5'	During sampling

Depth (ft)	Sample				Type	Strata	Visual Description	Note
	No.	Pen / Rec.	Depth	Blows / 6"				
0								
1	1	24/18	0-2	7-16-21-26	Ss	Fill __2'__	4" topsoil to tan fine to medium SAND some Silt, 2" topsoil	
2								
3								
4						Glacial Till		
5	2	4/2	5-5.3	100/4"	SS	__5'__	Wet brown / gray fine SAND and SILT trace Gravel	
6								
7							Auger refusal at 5'. Possible boulder	
8								
9								
10							Moved boring 5' and continued	
11								
12								
13								
14								
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**Proportioned Used**  
Trace 0 – 10%  
Little 10 – 20 %  
Some 20 – 35%  
And 35-50%

	Casing	Sampler	Core
<b>Type</b>	HSA	ss	
<b>ID</b>	4	1-3/8"	
<b>Hammer</b>		140 lbs.	

**TEST BORING LOG**

Sheet 1

Weber Engineering Associates, LLC Geotechnical Engineers Holliston, Massachusetts	Reading High School Reading, Massachusetts	<b>BORING NO. B-2A</b>  <b>DATE: 12/19/02</b>
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Ground Elevation: Date Started: 12/19/02 Date Finished: 12/19/02 Driller: Soil Exploration Corp	<b>Groundwater Observations</b>								
	<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th style="width:15%;">Date</th> <th style="width:15%;">Depth (ft)</th> <th style="width:15%;">Casing</th> <th style="width:55%;">Stabilization Time</th> </tr> <tr> <td align="center">12/19</td> <td align="center">5</td> <td align="center">In</td> <td align="center">During sampling</td> </tr> </table>	Date	Depth (ft)	Casing	Stabilization Time	12/19	5	In	During sampling
Date	Depth (ft)	Casing	Stabilization Time						
12/19	5	In	During sampling						

Depth (ft)	Sample				Type	Strata	Visual Description	Note
	No.	Pcn / Rec.	Depth	Blows / 6"				
0							Auger to 5'	
1								
2								
3								
4								
5								
6	1	18/6	5-6.5	24-48-43	Ss		Wet brown fine SAND little Silt some angular Gravel	
7								
8								
9						Glacial Till		
10								
11	2	18/0	10-11.5	20-30-38	Ss		No recovery	
12								
13								
14								
15								
16	3	18/18	15-16.5	39-39-30	Ss	_16.5'_	Brown fine SAND some Silt little angular Gravel	
17								
18							Bottom of boring	
19								
20								
21								
22								
23								
24								
25								
26								
27								
28								
29								
30								
31								
32								
33								
34								
35								

**Notes:**

<b>Sample Type / Field Test</b> ss = split spoon A = Auger U = Undisturbed Tv = Pocket Torvane Pp = Pocket Penetrometer	<b>Proportioned Used</b> Trace 0 – 10% Little 10 – 20 % Some 20 – 35% And 35-50%		<b>Casing</b>	<b>Sampler</b>	<b>Core</b>
		<b>Type</b>	HSA	ss	
		<b>ID</b>	4	1-3/8"	
		<b>Hammer</b>		140 lbs.	