ADDENDUM #4

TO CONTRACT DOCUMENTS FOR

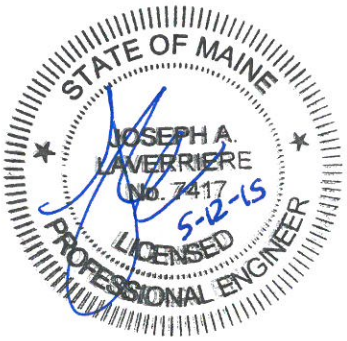
MSAD #72
PRE-K-8 SCHOOL AT MOLLY OCKETT
FRYEBURG, MAINE

MAY 12, 2015

This addendum modifies and supplements designated parts of the Site Development Construction Documents Project Manual / Bid Set for MSAD #72 Pre-K-8 School at Molly Ockett, Fryeburg, Maine and is hereby made an integral part thereof by reference and shall be as binding as though inserted in its entirety in the locations specified herein. It shall be the responsibility of the Contractor to notify all Subcontractors and suppliers he proposes to use for the various parts of the work of any changes or modifications contained in this addendum. The Contractor shall acknowledge receipt of this addendum in the appropriate section of the Bid.

PREPARED BY FAY, SPOFFORD & THORNDIKE

CIVIL ENGINEER
JOSEPH A. LAVERRIERE, P.E.
Fay Spofford & Thorndike
778 Main Street, Suite 8
South Portland, Maine 04106
(207) 775-1121 Phone
(207) 879-0896



MODIFICATION/AMENDMENT/CLARIFICATION TO INSTRUCTIONS TO BIDDERS

1. The following questions were raised by potential bidders and clarifications have been provided as follows:

   A. *Question: Molly Ockett project calls for us to supply and install a 200 amp 3 phase temporary service for the septic equipment. Plans show wiring for single phase. 1 hot, 1 neutral and 1 ground. Please clarify.*

      Response: The power riser diagram has been revised as shown on SKE-1 attached to this addendum.

MODIFICATION/AMENDMENT/CLARIFICATION TO NOTICE TO CONTRACTORS

1. The date for receiving bids shall be revised **from May 19, 2015 to May 26, 2015**. The location and time of day for receiving bids shall remain as stipulated in the Notice to Contractors.

MODIFICATION/AMENDMENT/CLARIFICATION TO TECHNICAL SPECIFICATIONS

1. Section 02 32 00 – Geotechnical Investigations

   A. Paragraph 1.2.A shall be revised to include the following:

      "Supplemental geotechnical investigation was performed recently by Sanborn, Head & Associates to assess the needs for vibro-compaction beneath the proposed building pad area. The results of their work have concluded that vibro-compaction is not necessary for this site. A copy of their findings is appended."

   B. Attached materials shall be revised to include the report from Sanborn, Head & Associates. A copy is appended to this addendum.

MODIFICATION/AMENDMENT/CLARIFICATION TO CONTRACT DRAWINGS

1. Offsite State Route 302 Roadway Improvements

   Sheets 1 through 18 have been revised to reflect comments by MaineDOT and the Fryeburg Water Company. The plan sheets have been revised to more accurately represent the location of the water main, modify the typical sections, and revise the storm drainage network. The typical sections have been modified to eliminate the under drain pipe. The plan sheets and cross sections have been revised to eliminate the drywell infiltration structures and add storm drainage piping that will outlet at an infiltration basin at approximately STA 131+00 to 131+50. These changes affect work included with Bid Alternate 1 only. Revised plans are enclosed with this addendum

ATTACHMENTS

Attachment A – SKE-1 Figure

Attachment B – Section 02 32 00 Attachment:

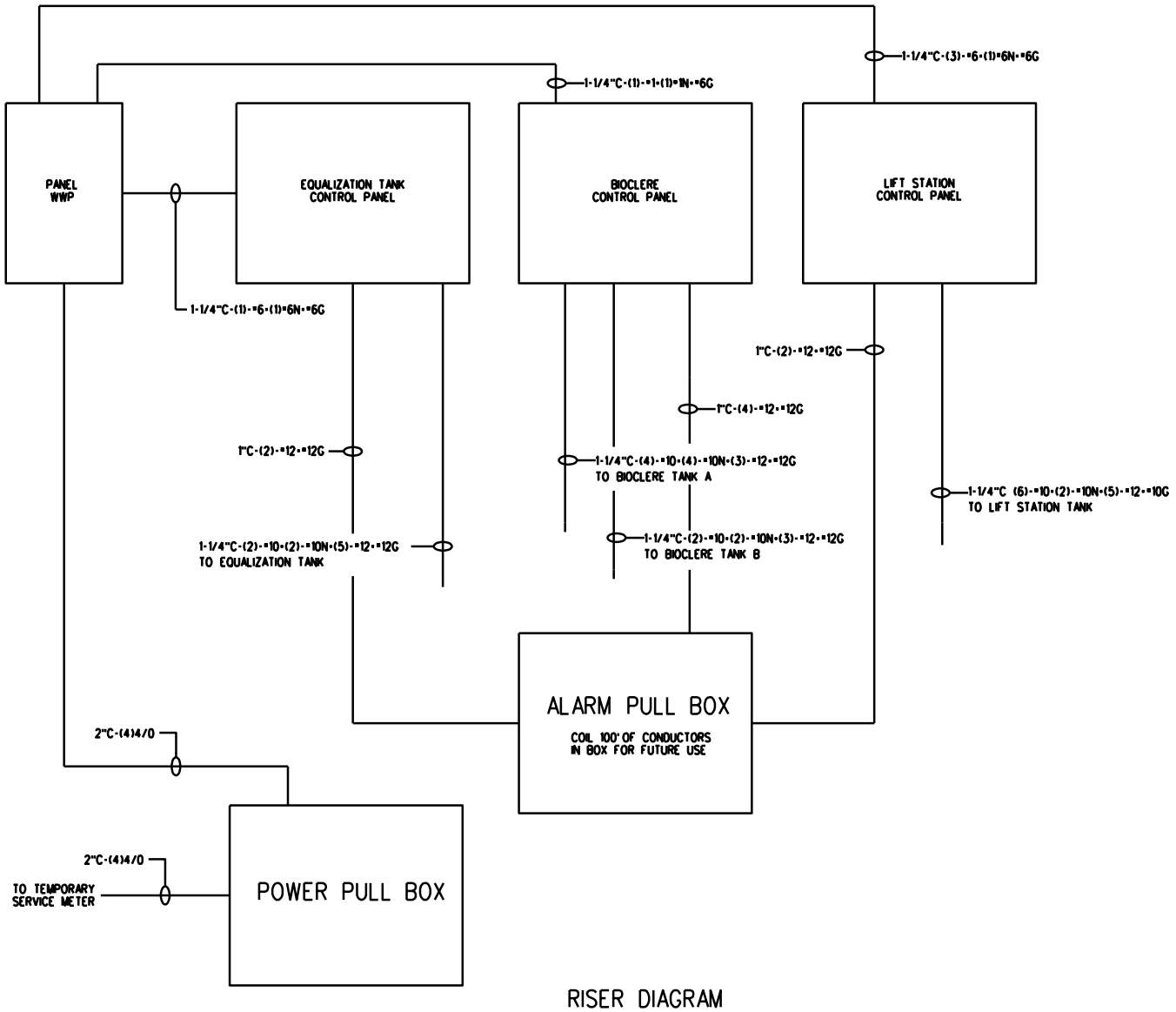
Supplemental Geotechnical Work performed by Sanborn, Head & Associates

State Route 302 Roadway Improvements Drawings

END OF ADDENDUM #4

ATTACHMENT A

SKE-1 Figure



RISER DIAGRAM

ALL WIRING SHOWN BY SITE CONTRACTOR
UNLESS NOTED OTHERWISE

BENNETT
ENGINEERING
MECHANICAL ▪ ELECTRICAL
(207) 865-9475

FRYEBURGE ELEMENTRY SCHOOL

DRAWING TITLE -	RISER DIAG MODIFICATIONS
DESIGNED/CHECKED BY -	twg / SAJ
DATE -	05/01/15
SCALE -	NONE

SKE-1

ATTACHMENT B

Section 02 32 00 Attachment
Supplemental Geotechnical Work Performed by Sanborn, Head & Associates

SANBORN HEAD
Building Trust. Engineering Success.

1 Technology Park Drive
Westford, MA 01886

Mr. Joe Laverriere, P.E.
Fay, Spofford & Thorndike, Inc.
775 Main Street, Suite 8
South Portland, ME 04106

May 5, 2015
File No. 3884.00

Re: Geotechnical Peer Review Services
Molly Ockett Middle School
Fryeburg, ME

Dear Joe:

In accordance with our agreement dated April 9, 2015, Sanborn Head has completed an independent site-specific seismic evaluation as part of a geotechnical peer review for the proposed Molly Ockett Middle School in Fryeburg, Maine.

BACKGROUND

Fairbanks Engineering Corporation (FEC) issued a geotechnical engineering report for the project dated July 31, 2014 that recommended that vibro-compaction be performed to densify sand to a depth of 30 feet in the proposed school building addition area in order to comply with seismic requirements of the building code. This recommendation was based on test borings completed by FEC with low SPT N-values (blow counts) suggesting the soils below the water table are loose and susceptible to liquefaction during a seismic event.

Fay, Spofford & Thorndike, Inc. (FST) retained Sanborn Head to peer review the FEC recommendation that vibro-compaction would be required for the proposed school addition. Sanborn Head reviewed the logs of the previous test borings by FEC and we believed that the low blow counts may be attributable to the drilling methods that were used leading to disturbance of the sands below the water table, and not necessarily representative of the in-situ density of the natural sand. Sanborn Head performed three additional test borings using different drilling methods (cased borings with drilling mud) and completed a seismic evaluation using updated liquefaction evaluation procedures. A summary of the previous data, recent explorations by Sanborn Head, and the results of our site-specific seismic evaluation are provided herein.

SUBSURFACE EXPLORATIONS

Previous Subsurface Explorations by FEC

Subsurface explorations previously performed at the Site by FEC in July 2013 and July 2014 in the vicinity of the proposed addition are summarized below.

2013 Explorations

FEC advanced four borings (B13-1 through B13-4) in the vicinity of the proposed school addition footprint. These borings were advanced using hollow-stem auger drilling techniques that do not maintain hydrostatic pressure prior to sampling. FEC noted auger blow-in due to running sands, which can result in artificially low blow counts. The driller attempted to stabilize the borehole by adding water; however the borings were terminated as the efforts were deemed unsuccessful by FEC.

2014 Explorations

FEC advanced an additional five borings (B14-1 through B14-5) using casing with drive and wash techniques. No "blow-in" or "running sands" were reported by FEC.

Recent Subsurface Explorations by Sanborn Head

On April 23, 2015, Sanborn Head personnel observed the advancement of three (3) test borings (designated as SH-1, SH-2, and SH-3) in the vicinity of the proposed school addition. The borings were drilled by New England Boring Contractors (NEBC) of Hermon, Maine. The test borings were initially advanced using 3½-inch solid stem augers to a depth of 5 feet, prior to utilizing rotary drive and wash techniques with a bentonite drilling fluid additive to stabilize the borehole and reduce the potential for blow-in. Borings were advanced to depths ranging between approximately 29 feet and 32 feet below ground surface (bgs); no blow-in was observed. Test borings were terminated in the sand deposits and refusal was not encountered at the termination depths. No groundwater monitoring wells were installed as part of the recent program.

The approximate locations of the explorations are shown on Figure 1 and were located in the field by Sanborn Head personnel using tape measurements from prominent site features. The exploration logs are provided in Attachment A, and include ground surface elevations interpolated from the existing conditions plan prepared by FST and dated September 2014. As such, the locations and elevations are accurate only to the degree implied by the method used to locate them.

The explorations were observed and logged in the field by Sanborn Head personnel on a full-time basis. Soil samples were field classified based on visual estimates of grain size distribution and plasticity. Additional soil characteristics such as color and moisture were noted on the logs. Soil samples were field classified using the Modified Burmister System and a legend is provided in Attachment A that describes the classification system.

Standard Penetration Tests (SPT) were performed in the borings and split-spoon soil samples were obtained in general accordance with American Society of Testing and Materials (ASTM) Standard D1586. The SPT consists of driving a 2-inch outside diameter split-spoon sampler a minimum of 18 inches using a 140-pound hammer dropped from a height of 30 inches. The number of blows required to drive the sampler from 6 to 18

inches is the SPT index value (N-value, or blow count) in blows per foot, which provides an indication of the in-place density, or consistency, of the soil.

SUBSURFACE CONDITIONS

At exploration locations, surface materials generally consisted of approximately 3 to 6 inches of topsoil. The topsoil was typically underlain by a natural sand deposit. SPT N-values in the sand generally ranged from 5 to 30 blows per foot (bpf) indicating the sand is loose to medium dense. Groundwater was typically observed during drilling at depths ranging between approximately 13 and 19 feet bgs, or between approximately El. 407 and 411 feet (NGVD29 datum). It should be noted that groundwater levels will vary depending on seasonal variations in temperature, precipitation, and other factors that differ from conditions at the time the measurements were made.

When evaluating the potential for liquefaction and settlement during a seismic event, the key soil parameters are the density of the soils below the water table, and the particle size distribution (gradation) of the soils below the water table. The soil samples collected from below the water table by Sanborn Head were generally consistent with the laboratory gradation test results reported by FEC, and as such, Sanborn Head did not perform additional laboratory testing. The table below provides a statistical summary of the blow count data obtained during soil sampling below the water table during the FEC test borings in 2013 and 2014, and the Sanborn Head test borings in 2015 (i.e, approximate depths between 15 and 30 feet).

Summary of SPT Blow Count Data Below the Groundwater Table

Statistical Parameter	SPT N-Values (Blow Counts per Foot)		
	2013 FEC Auger Borings	2014 FEC Cased Drive and Wash Borings	2015 Sanborn Head Cased Borings with Drilling Mud
Minimum	3	6	5
Maximum	25	27	20
Average ± 1 Std Deviation	11 ± 8	13 ± 5	12 ± 5
Range ± 1 Std Deviation	3 to 19	8 to 18	7 to 17

Based on our review of the test boring data, it is our opinion that the 2013 FEC auger test borings provided blow count data that was not representative of the in-situ density of the soils below the water table. The 2014 FEC borings and 2015 Sanborn Head borings provided similar data regarding the in-situ density of the soils below the water table. The range of blow counts based on the average, plus or minus one standard deviation, are 8 to 18 blows per foot for the 2014 FEC borings, and 7 to 17 blows per foot for the 2015 Sanborn Head test borings.

SEISMIC EVALUATION

Sanborn Head used the data from the recent subsurface exploration program, and performed a site-specific seismic evaluation using procedures outlined in Monograph No. 12 of the Earthquake Engineering Research Institute (EERI)[1]. Based upon this analysis, we estimate that the structure will undergo approximately ½-inch of seismically-induced settlement (total and differential) during the design seismic event required by building code. It is our opinion that the proposed building addition area is not susceptible to liquefaction during the design seismic event required by building code.

SUMMARY AND CONCLUSIONS

It is our opinion that vibro-compaction is not necessary to densify the soils below the school building addition footprint to control liquefaction and/or seismically-induced settlement. This is based on our review of previous geotechnical data by others, the results of our recent subsurface exploration program, and our site-specific seismic evaluation. This assumes the school building can be designed to withstand seismically-induced settlement (both total and differential) of approximately ½-inch.

If you have any questions regarding the report, please contact the undersigned.

Sincerely,
SANBORN, HEAD & ASSOCIATES, INC.

Robert D. House, P.E.
Senior Project Engineer

Vernon R. Kokosa, P.E.
Principal/Senior Vice President

RDH/VRK/KPS: rdh

encl. Figure 1 – Exploration Location Plan
Attachment A – Exploration Logs

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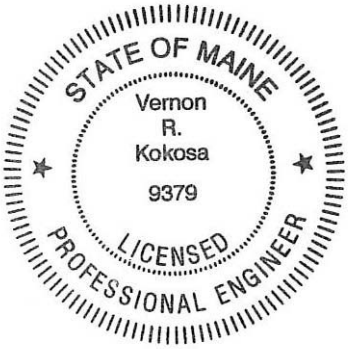
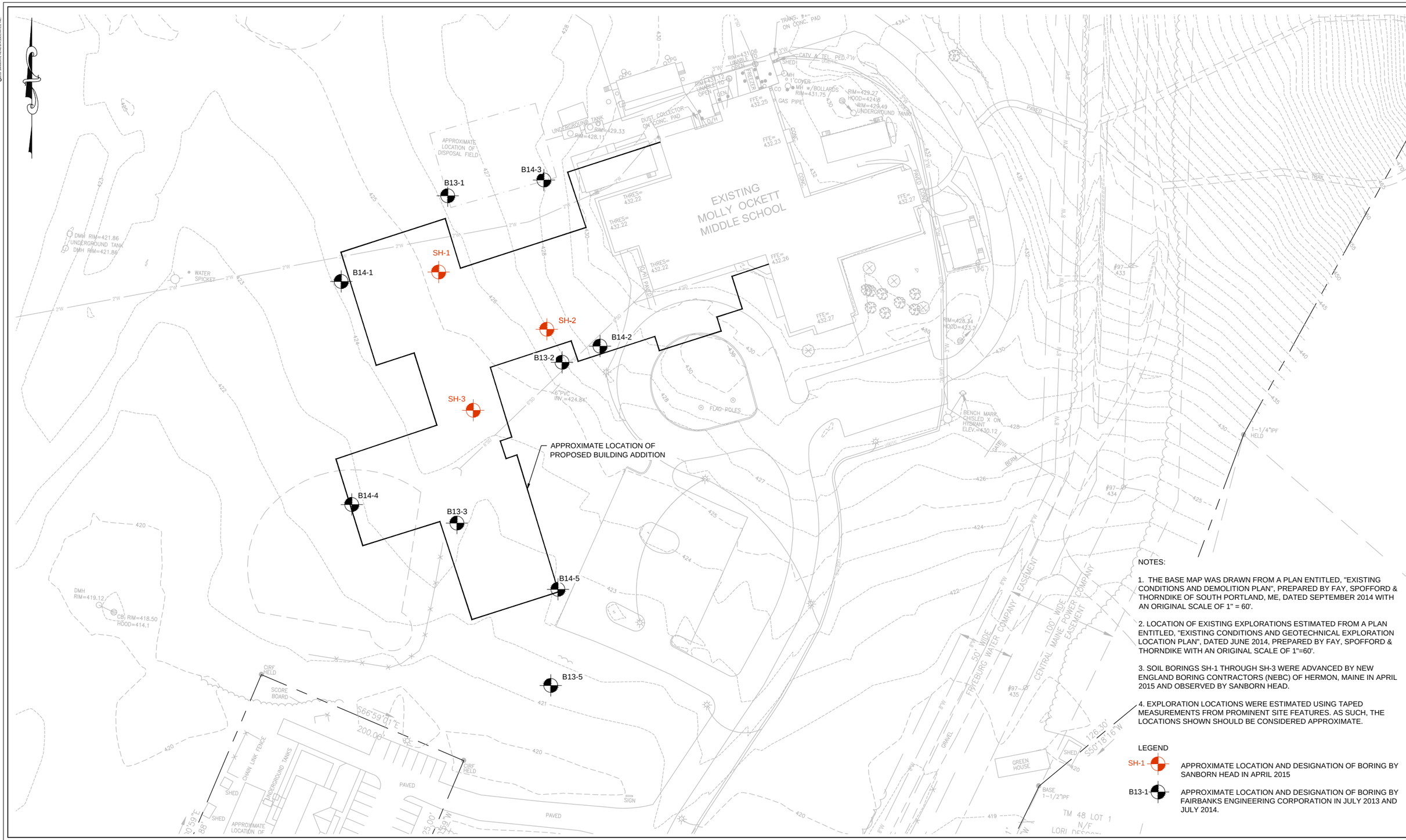


[1] Idriss and Boulanger (2008). *Soil Liquefaction During Earthquakes*. Monograph No. 12, published by the Earthquake Engineering Research Institute (EERI).

FIGURE



NOTES:

1. THE BASE MAP WAS DRAWN FROM A PLAN ENTITLED, "EXISTING CONDITIONS AND DEMOLITION PLAN", PREPARED BY FAY, SPOFFORD & THORNDIKE OF SOUTH PORTLAND, ME, DATED SEPTEMBER 2014 WITH AN ORIGINAL SCALE OF 1" = 60'.

2. LOCATION OF EXISTING EXPLORATIONS ESTIMATED FROM A PLAN ENTITLED, "EXISTING CONDITIONS AND GEOTECHNICAL EXPLORATION LOCATION PLAN", DATED JUNE 2014, PREPARED BY FAY, SPOFFORD & THORNDIKE WITH AN ORIGINAL SCALE OF 1"=60'.

3. SOIL BORINGS SH-1 THROUGH SH-3 WERE ADVANCED BY NEW ENGLAND BORING CONTRACTORS (NEBC) OF HERMON, MAINE IN APRIL 2015 AND OBSERVED BY SANBORN HEAD.

4. EXPLORATION LOCATIONS WERE ESTIMATED USING TAPED MEASUREMENTS FROM PROMINENT SITE FEATURES. AS SUCH, THE LOCATIONS SHOWN SHOULD BE CONSIDERED APPROXIMATE.

LEGEND

SH-1 — APPROXIMATE LOCATION AND DESIGNATION OF BORING BY SANBORN HEAD IN APRIL 2015

B13-1 — APPROXIMATE LOCATION AND DESIGNATION OF BORING BY FAIRBANKS ENGINEERING CORPORATION IN JULY 2013 AND JULY 2014.

SANBORN HEAD

GRAPHICAL SCALE
40' 20' 0' 40' 80'

NO.	DATE	DESCRIPTION	BY

DRAWN BY: C.GREEN
DESIGNED BY: R.HOUSE
REVIEWED BY: V.KOKOSA
PROJECT MGR: R.HOUSE
PIC: V.KOKOSA
DATE: MAY 2015

SEISMIC EVALUATION
MOLLY OCKETT MIDDLE SCHOOL
FRYEBURG, MAINE

EXPLORATION LOCATION PLAN

PROJECT NUMBER: 3884.00

SHEET NUMBER: 1

ATTACHMENT A

EXPLORATION LOGS

Description and Classification of Soil

1. Density or Consistency: The density or consistency of a soil sample is based on the Standard Penetration Test N-value according to the following table:

Density of Granular Soil	SPT N-Value		Consistency of Cohesive Soil
Very Loose	0-4	<2	Very Soft
Loose	4-10	2-4	Soft
Medium Dense	10-30	4-8	Medium Stiff
Dense	30-50	8-15	Stiff
Very Dense	>50	15-30	Very Stiff
		>30	Hard

The Standard Penetration Resistance, or N-value in blows per foot, is the sum of the blows recorded over the second and third 6-inch interval.

A number followed by "/3" indicates the distance that the sampler advanced. For example "100/4" indicates that 100 blows of a 140 pound hammer falling 30 inches advanced the sampler 4 inches. "WOR/24" indicates the weight of the drilling rods without the hammer caused the sampler to advance 24 inches.

"WOH" indicates the static weight of the 140 pound hammer and the drilling rods attached to the split spoon sampler were sufficient to cause the sampler to advance.

"WOR" indicates the static weight of the drilling rods attached to the split spoon sampler was sufficient to cause the sampler to advance.

2. Color: The color of a soil sample is based on visual observation.

3. Soil Components

A. Description: The components of a soil sample are described by visually estimating the percentage of each component by weight of the total sample using a Modified Burmister System.

i. Major Component: The major soil component is written with upper case letters for granular soil (e.g., SAND, GRAVEL) and a combination of upper and lower case letters for fine grained soil (e.g., Silty CLAY, Clayey SILT).

ii. Minor Component: The minor soil components are written with the first letter of each soil type in upper case, and the remaining letters in lower case (e.g., Gravel, Silt). The minor components are identified and prefaced in the description based on the following percentages:

Preface	Percentage
and	35-50
some	20-35
little	10-20
trace	0-10

iii. Note: The actual percentages of gravel soil may differ from that measured when sampling with a standard split spoon sampler because of the relatively small sampler diameter. Also, it is not possible to identify the presence of boulders and cobbles using a standard split spoon sampler.

B. Definitions

i. Granular Soil: A granular soil sample is defined by the following particle sizes as referenced to a standard sieve:

Material	Description	Standard Sieve Limit	
		Upper	Lower
Boulders	C-sized	--	36 inch
	B-sized	36 inch	24 inch
	A-sized	24 inch	12 inch
Cobbles	--	12 inch	3 inch
Gravel	coarse	3 inch	3/4 inch
	fine	3/4 inch	No. 4
Sand	coarse	No. 4	No. 10
	medium	No. 10	No. 40
	fine	No. 40	No. 200

ii. Fine Grained Soil: The degree of plasticity of fine-grained soils is defined as follows:

Material	Degree of Plasticity	Plasticity Index (PI)	Smallest Thread Diameter (in.)
SILT	Non-Plastic	0	None
Clayey SILT	Slight	1 to 5	1/4
SILT & CLAY	Low	5 to 10	1/8
CLAY & SILT	Medium	10 to 20	1/16
Silty CLAY	High	20 to 40	1/32
CLAY	Very High	40+	1/64

iii. Organic Soil: An organic soil sample is classified by observation of the sample structure as follows:

Material	Description
TOPSOIL	Surficial soils that support plant life and which contain organic matter.
SUBSOIL	Soil underlying the topsoil which may contain very fragments of plant fibers.
PEAT	Deposits of plant remains in which the original plant fibers may be visible.
ORGANIC SILT	Deposit of plant remains in which the original plant fibers have been destroyed, may have high sand content. Usually found underlying peat.

iv. Non-Soil Constituents: Non-soil constituents (artificial or anthropogenic material, organic materials, cobbles and boulders) are described as follows:

The following terminology is used to denote size ranges of non-soil constituents:

Descriptive Term	Size Range	Comparative Term
Specks	< No. 200 Sieve	Silt and Clay fines
Particles	No. 200 Sieve to No. 4 Sieve	Sand
Fragments	No. 4 Sieve to 3 in.	Gravel
Pieces	3 in. to 12 in.	Cobbles
Blocks	> 12 in.	Boulders

The following terminology is used to describe the frequency that a non-soil constituent is observed by estimating the percentage of the constituent by weight of the total sample:

Descriptor	Percentage
very few	0-5
few	5-10
common	10-20
frequent	20-35
numerous	35-50

4. Moisture Content: The moisture content of a soil sample is based on the observable presence of water according to the following table:

Dry	Moisture is not apparent, dusty.
Moist	No visible water.
Wet	Visible free water.

5. Other Pertinent Characteristics: Pertinent characteristics observed in a soil sample should be noted according to the following table:

Soil Structure Produced by Deposition of Sediments	
Stratified	Random soil deposits of varying components of color.
Varved	Alternating soil deposits of varying thickness (i.e., clays or silts).
Stratum	Soil deposit > 12 inches thick.
Layer	Soil deposit 3 inches to 12 inches thick.
Seam	Soil deposit 1/8 inch to 3 inches thick.
Parting/Lens	Soil deposit <1/8 inch thick.

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Boring / Monitoring Well Log Legend

SANBORN HEAD

Project: Industrial Site Redevelopment
Location: Anytown, State
SHA Project No.: 1234.56

Log of Monitoring Well SH-1

Ground Elevation: 112.2 feet
TOC Elevation: 115.2 feet
PVC Elevation: 115.10 feet
Datum: MSL

Drilling Method: Mobile B-53 Truck, 5" PW Drive & Wash

Sampling Method: 2" O.D. Split Spoon w/140 lb Safety Hammer

Drilling Company: Ground Down Drilling Co.
Foreman: J. Driller
Date Started: 06/25/08 **Date Finished: 06/26/08**
Logged By: A. Engineer **Checked By: A. Principal**

Groundwater Readings

Date	Time	Depth to Water	Ref. Pt.	Depth of Casing	Depth of Hole	Stab. Time
06/24/08	09:45	10.0'	Ground	27'	27'	<5 min
06/25/08	14:50	12.0'	Top of PVC	Well Installed	50'	15 min
07/03/08	13:00	12.2'	Top of PVC	Well Installed	50'	8 days

Depth (ft)	Casing Blows (per ft)	Drill Rate (min/ft)	Sample Information					Stratum		Geologic Description	Well Diagram	Well Description
			Sample No.	Depth (ft)	Spoon Blows per 6 in	Pen/ Rec (in)	Field Testing Data	Log	Description			
1	2	3	4	5	6	7	8	9	9	10	11	11

1. The numbers in this column report the depth in feet below ground surface.

2. The numbers in this column report the number of blows required to drive the drill casing one foot using a 300 pound hammer, unless otherwise specified.

3. The numbers in this column report the rate of advance when coring rock.

4. The values in this column report the sample designation. In the example S-1, "S" indicates the sample type and "1" indicates the sample number.

"S" indicates split spoon sample "C" indicates rock core sample
"U" indicates Shelby tube sample "G" indicates grab sample

5. The numbers in this column report the depth, in feet, from the ground surface of the sample identified in column.

6. The numbers in this column report the number of blows required to drive a split spoon sampler 6 inches using a 140 pound hammer free falling 30 inches. The standard split spoon sampler is 1-3/8 inch inside diameter and 2 inches outside diameter. The Standard Penetration Resistance, or N-value in blows per foot, is the sum of the blows recorded over the second and third 6-inch interval.

A number followed by "/3" indicates the distance that the sampler advanced. For example "100/4" indicates that 100 blows of a 140 pound hammer falling 30 inches advanced the sampler 4 inches. "WOR/24" indicates the weight of the drilling rods without the hammer caused the sampler to advance 24 inches.

"WOH" indicates the static weight of the 140 pound hammer and the drilling rods attached to the split spoon sampler were sufficient to cause the sampler to advance.

"WOR" indicates the static weight of the drilling rods attached to the split spoon sampler was sufficient to cause the sampler to advance.

7. The values shown are the length of the soil or rock core sampler penetration and the number of inches of sample recovered from the sampler.

8. The values shown are the results of field tests performed on soil or rock samples. The test method, result and units are indicated. Unless otherwise noted "ND" denotes not detected.

9. These columns provide a graphic illustration and verbal description of the subsurface soil and rock strata. The depths of strata changes should be considered approximate and general in nature, actual strata changes in the field may be more gradual.

10. Descriptions of soil samples include:

- the density or consistency;
- color;
- a listing of MAJOR and minor soil components based on particle size and plasticity;
- structure,
- moisture; and
- other pertinent characteristics.

For example: Medium dense, brown, fine to medium SAND, trace Silt. Stratified. Moist. Faint petroleum odor.

Description of rock core samples include:

- hardness, weathering, rock continuity, color, texture, rock type, structure; and RQD (%)

For example: Hard to Very Hard, slightly weathered, moderately fractured, grey-green, fine grained, RHYOLITE, with joints spaced 4 to 12 inches apart and dipping from near horizontal to approximately 60°. Open crack in core at 14.4'. moderately fractured . RQD=58%

NOTE: "RQD" is defined as the summation of all pieces of rock core greater than 4 inches in length divided by the length of the core run and expressed as a percentage.

11. Monitoring well materials or other equipment installed within the borehole are graphically presented in these columns. If no equipment was installed, these columns are used for notes, remarks or other pertinent observations.

(c) 2011 Sanborn, Head & Associates, Inc.

SANBORN HEAD

Sanborn, Head & Associates, Inc.

Project: Molly Ockett Middle School
Location: Fryeburg, ME
Project No.: 3884.00

Log of Boring SH-1

Ground Elevation: 425 ± feet
Datum: NGVD 1929

Drilling Method: 3" Dia. Mud Rotary Drive & Wash, Mobile ATV B-53

Sampling Method: 2" Split Spoon, Safety Hammer

Drilling Company: NEBC
Foreman: T. Schaefer
Date Started: 04/23/15 **Date Finished: 04/23/15**
Logged By: R. House **Checked By: V. Kokosa**

Groundwater Readings

Date	Time	Depth to Water	Ref. Pt.	Depth of Casing	Depth of Hole	Stab. Time
04/23/15	10:50	17'	Ground Surface	None	30'	5 Minutes

Depth (ft)	Sample Information: Sample No.	Depth (ft)	Spoon Blows per 6 in	Pen/ Rec (in)	Field Testing Data	Stratum: Log	Description	Geologic Description	Remarks
0	S-1	0 - 2	2 4 4 6	24/17			-----0'----- TOPSOIL -----0.5'-----	S-1A (0 to 0.5'): Loose, dark brown, fine to medium SAND, little Silt, trace Gravel, very few Root particles. Moist. TOPSOIL.	Solid stem auger used to a depth of 5 feet. Mud rotary Drive and Wash drilling techniques used thereafter.
								S-1B (0.5 to 2'): Loose, light brown, fine to medium SAND, trace Silt. Moist.	
2									
4									
	S-2	5 - 7	6 6 7 6	24/15				S-2 (5 to 7'): Medium dense, light brown, fine to medium SAND, trace Silt. Moist.	
6									
8									
10	S-3	10 - 12	5 7 9 10	24/7				S-3 (10 to 12'): Medium dense, light brown, fine to medium SAND, trace Silt. Moist.	
12							SAND		
14									
	S-4	15 - 17	9 10 13 13	24/8				S-4 (15 to 17'): Medium dense, brown, fine to medium SAND, trace Silt, 1/2" fine Sand/Silt seam observed in sample. Moist to wet.	1/2" fine Sand/Silt seam observed in sample S-4.
16									
18									
20	S-5	20 - 22	5 7 7 7	24/8				S-5 (20 to 22'): Medium dense, brown, fine to medium SAND, little Silt. Wet.	
22									
24									

BORING LOG P:\3800S\3884.00\WORK\LOGS\3884.00 LOGS.GPJ 2010 SANBORN HEAD V1.GLB 2010 SANBORN HEAD V1.GDT 4/29/15

SANBORN HEAD

Sanborn, Head & Associates, Inc.

Project: Molly Ockett Middle School
Location: Fryeburg, ME
Project No.: 3884.00

Log of Boring SH-1

Ground Elevation: 425 ± feet
Datum: NGVD 1929

Drilling Method: 3" Dia. Mud Rotary Drive & Wash, Mobile ATV B-53

Sampling Method: 2" Split Spoon, Safety Hammer

Drilling Company: NEBC
Foreman: T. Schaefer
Date Started: 04/23/15 **Date Finished: 04/23/15**
Logged By: R. House **Checked By: V. Kokosa**

Groundwater Readings

Date	Time	Depth to Water	Ref. Pt.	Depth of Casing	Depth of Hole	Stab. Time
04/23/15	10:50	17'	Ground Surface	None	30'	5 Minutes

Depth (ft)	Sample Information: Sample No.	Depth (ft)	Spoon Blows per 6 in	Pen/ Rec (in)	Field Testing Data	Stratum: Log	Description	Geologic Description	Remarks
	S-6	25 - 27	4 5 7 9	24/10				S-6 (25 to 27'): Medium dense, brown, fine to medium SAND, trace Silt. Wet.	
26									
28							SAND		
30	S-7	30 - 32	7 8 11 14	24/9				S-7 (30 to 32'): Medium dense, brown, fine to medium SAND, little Silt, reddish brown Sand particles observed in sample. Wet.	Reddish brown Sand particles observed in sample S-7.
32							-----32'-----	Boring terminated at 32 feet. No refusal encountered.	
34									
36									
38									
40									
42									
44									
46									
48									
50									

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SANBORN HEAD

Sanborn, Head & Associates, Inc.

Project: Molly Ockett Middle School
Location: Fryeburg, ME
Project No.: 3884.00

Log of Boring SH-2

Ground Elevation: 427 ± feet
Datum: NGVD 1929

Drilling Method: 3" Dia. Mud Rotary Drive & Wash, Mobile ATV B-53

Sampling Method: 2" Split Spoon, Safety Hammer

Drilling Company: NEBC
Foreman: T. Schaefer
Date Started: 04/23/15 **Date Finished: 04/23/15**
Logged By: R. House **Checked By: V. Kokosa**

Groundwater Readings

Date	Time	Depth to Water	Ref. Pt.	Depth of Casing	Depth of Hole	Stab. Time
04/23/15	13:30	10.5'	Ground Surface	25'	27'	2 Minutes

Depth (ft)	Sample Information: Sample No.	Depth (ft)	Spoon Blows per 6 in	Pen/Rec (in)	Field Testing Data	Stratum: Log	Description	Geologic Description	Remarks
0	S-1	0 - 2	2 3 3 3	24/17			-----0'----- TOPSOIL -----0.5'-----	S-1A (0 to 0.5'): Medium dense, dark brown, fine to medium SAND, little Silt, trace Gravel, very few Root particles. Dry. TOPSOIL.	Solid stem auger used to a depth of 5 feet. Mud rotary Drive and Wash drilling techniques used thereafter. Borehole collapsed to 12.3 feet upon removal of casing.
								S-1B (0.5 to 2'): Medium dense, light brown, fine to medium SAND, trace Silt. Dry.	
2									
4									
	S-2	5 - 7	5 6 4 3	24/19				S-2 (5 to 7'): Medium dense, light brown, fine to coarse SAND, trace Silt. Moist.	
6									
8									
10	S-3	10 - 12	6 10 10 10	24/9				S-3 (10 to 12'): Medium dense, brown, fine to medium SAND, trace Silt. Moist to wet.	
12							SAND		
14									
	S-4	15 - 17	4 6 5 8	24/8				S-4 (15 to 17'): Medium dense, brown, fine to medium SAND, trace Silt. Wet.	
16									
18									
20	S-5	20 - 22	2 3 3 4	24/8				S-5 (20 to 22'): Loose, brown, fine to medium SAND, trace Silt. Wet.	
22	S-6	22 - 24	3 3 4 4	24/5				S-6 (22 to 24'): Loose, brown, fine to medium SAND, trace Silt. Wet.	
24									

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SANBORN HEAD

Sanborn, Head & Associates, Inc.

Project: Molly Ockett Middle School
Location: Fryeburg, ME
Project No.: 3884.00

Log of Boring SH-2

Ground Elevation: 427 ± feet
Datum: NGVD 1929

Drilling Method: 3" Dia. Mud Rotary Drive & Wash, Mobile ATV B-53

Sampling Method: 2" Split Spoon, Safety Hammer

Drilling Company: NEBC
Foreman: T. Schaefer
Date Started: 04/23/15 **Date Finished: 04/23/15**
Logged By: R. House **Checked By: V. Kokosa**

Groundwater Readings

Date	Time	Depth to Water	Ref. Pt.	Depth of Casing	Depth of Hole	Stab. Time
04/23/15	13:30	10.5'	Ground Surface	25'	27'	2 Minutes

Depth (ft)	Sample Information: Sample No.	Depth (ft)	Spoon Blows per 6 in	Pen/ Rec (in)	Field Testing Data	Stratum: Log	Description	Geologic Description	Remarks
	S-7	25 - 27	2 2 3 3	24/0				S-7 (25 to 27'): Loose, No Recovery. Wet.	
26									
	S-8	27 - 29	3 3 4 4	24/6			SAND	S-8 (27 to 29'): Loose, brown, fine to medium SAND, trace Silt. Wet.	
28									
							-----29'-----	Boring terminated at 29 feet. No refusal encountered.	
30									
32									
34									
36									
38									
40									
42									
44									
46									
48									
50									

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SANBORN HEAD

Sanborn, Head & Associates, Inc.

Project: Molly Ockett Middle School
Location: Fryeburg, ME
Project No.: 3884.00

Log of Boring SH-3

Ground Elevation: 424.5 ± feet
Datum: NGVD 1929

Drilling Method: 3" Dia. Mud Rotary Drive & Wash, Mobile ATV B-53

Sampling Method: 2" Split Spoon, Safety Hammer

Drilling Company: NEBC
Foreman: T. Schaefer
Date Started: 04/23/15 **Date Finished: 04/23/15**
Logged By: R. House **Checked By: V. Kokosa**

Groundwater Readings

Date	Time	Depth to Water	Ref. Pt.	Depth of Casing	Depth of Hole	Stab. Time
04/23/15	16:00	14'	Ground Surface	28'	30'	None

Depth (ft)	Sample Information: Sample No.	Depth (ft)	Spoon Blows per 6 in	Pen/ Rec (in)	Field Testing Data	Stratum: Log	Description	Geologic Description	Remarks
0	S-1	0 - 2	3 3 3 3	24/17			0' TOPSOIL 0.3	S-1A (0 to 0.3'): Loose, dark brown, fine to medium SAND, little Silt, trace Gravel. Moist. TOPSOIL.	Solid stem auger used to a depth of 5 feet. Mud rotary Drive and Wash drilling techniques used thereafter.
								S-1B (0.3 to 2'): Loose, light brown, fine to medium SAND, trace Silt. Moist.	
2									
4									
	S-2	5 - 7	5 5 6 7	24/16				S-2 (5 to 7'): Medium dense, brown, fine to medium SAND, trace Silt. Moist.	
6									
8									
10	S-3	10 - 12	4 2 4 5	24/8				S-3 (10 to 12'): Loose, brown, fine to coarse SAND, trace Silt. Moist.	
12							SAND		
14									
	S-4	15 - 17	4 7 7 8	24/7				S-4 (15 to 17'): Medium dense, brown, fine to medium SAND, trace Silt. Wet.	
16									
18									
20	S-5	20 - 22	4 6 5 7	24/8				S-5 (20 to 22'): Medium dense, brown, fine to coarse SAND, trace Silt. Wet.	
22									
24									

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SANBORN HEAD

Sanborn, Head & Associates, Inc.

Project: Molly Ockett Middle School
Location: Fryeburg, ME
Project No.: 3884.00

Log of Boring SH-3

Ground Elevation: 424.5 ± feet
Datum: NGVD 1929

Drilling Method: 3" Dia. Mud Rotary Drive & Wash, Mobile ATV B-53

Sampling Method: 2" Split Spoon, Safety Hammer

Drilling Company: NEBC
Foreman: T. Schaefer
Date Started: 04/23/15 **Date Finished: 04/23/15**
Logged By: R. House **Checked By: V. Kokosa**

Groundwater Readings

Date	Time	Depth to Water	Ref. Pt.	Depth of Casing	Depth of Hole	Stab. Time
04/23/15	16:00	14'	Ground Surface	28'	30'	None

Depth (ft)	Sample Information: Sample No.	Depth (ft)	Spoon Blows per 6 in	Pen/ Rec (in)	Field Testing Data	Stratum: Log	Description	Geologic Description	Remarks
	S-6	25 - 27	3 4 5 6	24/0				S-6 (25 to 27'): Loose, No Recovery. Wet.	
26									
							SAND		
28	S-7	28 - 30	14 5 6 8	24/10				S-7 (28 to 30'): Medium dense, brown, fine to medium SAND, trace Silt. Wet.	
30							-----30'-----	Boring terminated at 30 feet. No refusal encountered.	
32									
34									
36									
38									
40									
42									
44									
46									
48									
50									

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