



SOIL BORING LOG

Boring #: **B-1**
 Project #: 13067.1
 Sheet: 1 of 1
 Chkd by:

Project: Munjoy Heights
 Location: Sheridan St Extension
 City, State: Portland, Maine

Drilling Co: Summit Geoengineering Services, Inc. Boring Elevation: 74 ft +/-
 Driller: C. Coolidge, P.E. Reference: Drainage & Erosion Control Plan by Acorn Engineering
 Summit Staff: B. Peterlein, P.E. Date started: 9/26/2013 Date Completed: 9/26/2013

DRILLING METHOD	SAMPLER	ESTIMATED GROUND WATER DEPTH			
Vehicle: Tracked	Length: 24" SS	Date	Depth	Elevation	Reference
Model: AMS Power Probe	Diameter: 2"OD/1.5"ID	9/26/2013			None Observed
Method: 2-1/2" H.S.A.	Hammer: 140 lb				
Hammer Style: Auto	Method: ASTM D1586				

Depth (ft.)	SAMPLE					Geological/ Test Data	Geological Stratum
	No.	Pen/Rec (in)	Depth (ft)	blows/6"	N ₆₀		
1						4" dark brown Sandy SILT, trace rootlets, moist, ML	TOPSOIL
2						Brown Silty SAND, trace Gravel, humid, loose, SM	FILL
3							
4							
5							
6	S-1	24/24	5 to 7	4		Gray Sandy SILT, trace Gravel and Clay, damp, stiff, ML	
7				7			
8				4			
9				5			
10							
11	S-2	24/24	10 to 12	3		Same as above, firm	
12				3			
13				5			
14				7			
15							
16	S-3	24/24	15 to 17	2		Same as above	
17				3			
18				3			
19				4			
20						Hard drilling	
21	S-4	24/24	20 to 22	14		Same as above, damp, very stiff	
22				14			
23				12			
24				15			
25						End of Boring at 22 ft	

Granular Soils		Cohesive Soils		% Composition ASTM D2487	NOTES: PP = Pocket Penetrometer, MC = Moisture Content LL = Liquid Limit, PI = Plastic Index	Soil Moisture Condition
Blows/ft.	Density	Blows/ft.	Consistency			
0-4	V. Loose	<2	V. soft			Dry: S = 0%
5-10	Loose	2-4	Soft	< 5% Trace	Shallow = 0 to 35 degrees	Humid: S = 1 to 25%
11-30	Compact	5-8	Firm	5-15% Little	Dipping = 35 to 55 degrees	Damp: S = 26 to 50%
31-50	Dense	9-15	Stiff	15-30% Some	Steep = 55 to 90 degrees	Moist: S = 51 to 75%
>50	V. Dense	16-30	V. Stiff	> 30% With		Wet: S = 76 to 99%
		>30	Hard			Saturated: S = 100%

Boulders = diameter > 12 inches, Cobbles = diameter < 12 inches and > 3 inches
 Gravel = < 3 inch and > No 4, Sand = < No 4 and >No 200, Silt/Clay = < No 200



SOIL BORING LOG

Boring #: **B-2**
 Project #: 13067.1
 Sheet: 1 of 1
 Chkd by:

Project: Munjoy Heights
 Location: Sheridan St Extension
 City, State: Portland, Maine

Drilling Co: Summit Geoengineering Services, Inc. Boring Elevation: 86 ft +/-
 Driller: C. Coolidge, P.E. Reference: Drainage & Erosion Control Plan by Acorn Engineering
 Summit Staff: B. Peterlein, P.E. Date started: 9/26/2013 Date Completed: 9/26/2013

DRILLING METHOD	SAMPLER	ESTIMATED GROUND WATER DEPTH			
Vehicle: Tracked	Length: 24" SS	Date	Depth	Elevation	Reference
Model: AMS Power Probe	Diameter: 2"OD/1.5"ID	9/26/2013	15 ft	71 ft +/-	Observed in samples
Method: 2-1/2" H.S.A.	Hammer: 140 lb				
Hammer Style: Auto	Method: ASTM D1586				

Depth (ft.)	SAMPLE DESCRIPTION					Geological/ Test Data	Geological Stratum
	No.	Pen/Rec (in)	Depth (ft)	blows/6"	N ₆₀		
1						4" dark brown Sandy SILT, trace rootlets, moist, ML	TOPSOIL
2						Brown Gravelly SAND, trace Silt, humid, loose, SP	FILL
3							MARINE NEAR SHORE
4							
5							
6	S-1	24/20	5 to 7	4		Brown Gravelly SAND, trace Silt, dry, compact, SP	
7				7			
8				7			
9				7			
10	S-2	24/12	10 to 12	4		Same as above	
11				6			
12				5			
13				3			
14							
15							
16	S-3	24/16	15 to 17	8		Brown Gravelly SAND, little Silt, wet, compact, SM	
17				4			
18				6			
19				9			
20							GLACIAL TILL
21	S-4	24/24	20 to 22	10		Gray Sandy SILT, trace Gravel and Clay, wet, hard, ML	
22				16			
23				17			
24				18			
25						End of Boring at 22 ft	

Granular Soils		Cohesive Soils		% Composition ASTM D2487	NOTES: PP = Pocket Penetrometer, MC = Moisture Content LL = Liquid Limit, PI = Plastic Index	Soil Moisture Condition
Blows/ft.	Density	Blows/ft.	Consistency			
0-4	V. Loose	<2	V. soft	< 5% Trace 5-15% Little 15-30% Some > 30% With	<u>Bedrock Joints</u> Shallow = 0 to 35 degrees Dipping = 35 to 55 degrees Steep = 55 to 90 degrees Boulders = diameter > 12 inches, Cobbles = diameter < 12 inches and > 3 inches Gravel = < 3 inch and > No 4, Sand = < No 4 and >No 200, Silt/Clay = < No 200	Dry: S = 0% Humid: S = 1 to 25% Damp: S = 26 to 50% Moist: S = 51 to 75% Wet: S = 76 to 99% Saturated: S = 100%
5-10	Loose	2-4	Soft			
11-30	Compact	5-8	Firm			
31-50	Dense	9-15	Stiff			
>50	V. Dense	16-30 >30	V. Stiff Hard			



SOIL BORING LOG

Boring #: **B-3**
 Project #: 13067.1
 Sheet: 1 of 2
 Chkd by:

Project: Munjoy Heights
 Location: Sheridan St Extension
 City, State: Portland, Maine

Drilling Co: Summit Geoengineering Services, Inc. Boring Elevation: 138 ft +/-
 Driller: C. Coolidge, P.E. Reference: Drainage & Erosion Control Plan by Acorn Engineering
 Summit Staff: B. Peterlein, P.E. Date started: 9/26/2013 Date Completed: 9/26/2013

DRILLING METHOD	SAMPLER	ESTIMATED GROUND WATER DEPTH			
Vehicle: Tracked	Length: 24" SS	Date	Depth	Elevation	Reference
Model: AMS Power Probe	Diameter: 2"OD/1.5"ID	9/26/2013	24 ft	114 ft +/-	Observed on drill rods
Method: 2-1/2" H.S.A.	Hammer: 140 lb				
Hammer Style: Auto	Method: ASTM D1586				

Depth (ft.)	SAMPLE DESCRIPTION					Geological/ Test Data	Geological Stratum
	No.	Pen/Rec (in)	Depth (ft)	blows/6"	N ₆₀		
1						Dark brown Sandy SILT, trace rootlets, moist, loose, ML	TOPSOIL
2						Brown Gravelly Silty SAND, moist, loose, SM	FILL
3							
4							
5							
6	S-1	24/12	5 to 7	3			
7				2		Brown Silty SAND, little Gravel, moist, loose, SM	
8				3			
9				2			
10							
11	S-2	24/10	10 to 12	1			
12				2		Brown SAND, trace to little Gravel and Silt, dry, loose, SP	MARINE NEAR SHORE
13				3			
14				2			
15							
16	S-3	24/18	15 to 17	6			
17				17		Olive-brown Sandy SILT, little Gravel, moist, very, stiff, ML	GLACIAL TILL
18				14			
19				17			
20							
21	S-4	24/20	20 to 22	7			
22				12		Gray SILT, little Clay and fine Sand, trace Gravel, stiff, ML	
23				23			
24				24			
25							

Granular Soils		Cohesive Soils		% Composition ASTM D2487	NOTES: PP = Pocket Penetrometer, MC = Moisture Content LL = Liquid Limit, PI = Plastic Index	Soil Moisture Condition
Blows/ft.	Density	Blows/ft.	Consistency			
0-4	V. Loose	<2	V. soft	< 5% Trace 5-15% Little 15-30% Some > 30% With	<u>Bedrock Joints</u> Shallow = 0 to 35 degrees Dipping = 35 to 55 degrees Steep = 55 to 90 degrees Boulders = diameter > 12 inches, Cobbles = diameter < 12 inches and > 3 inches Gravel = < 3 inch and > No 4, Sand = < No 4 and >No 200, Silt/Clay = < No 200	Dry: S = 0% Humid: S = 1 to 25% Damp: S = 26 to 50% Moist: S = 51 to 75% Wet: S = 76 to 99% Saturated: S = 100%
5-10	Loose	2-4	Soft			
11-30	Compact	5-8	Firm			
31-50	Dense	9-15	Stiff			
>50	V. Dense	16-30 >30	V. Stiff Hard			



SOIL BORING LOG

Boring #: **B-3**
 Project #: 13067.1
 Sheet: 2 of 2
 Chkd by:

Project: Munjoy Heights
 Location: Sheridan St Extension
 City, State: Portland, Maine

Drilling Co: Summit Geoengineering Services, Inc. Boring Elevation: 138 ft +/-
 Driller: C. Coolidge, P.E. Reference: Drainage & Erosion Control Plan by Acorn Engineering
 Summit Staff: B. Peterlein, P.E. Date started: 9/26/2013 Date Completed: 9/26/2013

DRILLING METHOD		SAMPLER		ESTIMATED GROUND WATER DEPTH			
Vehicle: Tracked	Length: 24" SS	Date	Depth	Elevation	Reference		
Model: AMS Power Probe	Diameter: 2"OD/1.5"ID	9/26/2013	24 ft	114 ft +/-	Observed on drill rods		
Method: 2-1/2" H.S.A.	Hammer: 140 lb						
Hammer Style: Auto	Method: ASTM D1586						

Depth (ft.)	SAMPLE DESCRIPTION					Geological/ Test Data	Geological Stratum
	No.	Pen/Rec (in)	Depth (ft)	blows/6"	N ₆₀		
26	S-5	24/24	25 to 27	4		Gray Sandy SILT, little Gravel, trace Clay, very wet, stiff, ML	GLACIAL TILL
				13			
				10			
27				11			
28							
29							
30							
31	S-6	24/24	30 to 32	14		Same as above	
				17			
				25			
32				37		Auger to 50 ft, very hard drilling	
33							
34							
35							
36							
37							
38							
39							
40							
41							
42							
43							
44							
45							
46							
47							
48							
49							
50						End of Boring at 50 ft	

Granular Soils		Cohesive Soils		% Composition ASTM D2487	NOTES: PP = Pocket Penetrometer, MC = Moisture Content LL = Liquid Limit, PI = Plastic Index	Soil Moisture Condition
Blows/ft.	Density	Blows/ft.	Consistency			
0-4	V. Loose	<2	V. soft	< 5% Trace 5-15% Little 15-30% Some > 30% With	Bedrock Joints Shallow = 0 to 35 degrees Dipping = 35 to 55 degrees Steep = 55 to 90 degrees Boulders = diameter > 12 inches, Cobbles = diameter < 12 inches and > 3 inches Gravel = < 3 inch and > No 4, Sand = < No 4 and >No 200, Silt/Clay = < No 200	Dry: S = 0% Humid: S = 1 to 25% Damp: S = 26 to 50% Moist: S = 51 to 75% Wet: S = 76 to 99% Saturated: S = 100%
5-10	Loose	2-4	Soft			
11-30	Compact	5-8	Firm			
31-50	Dense	9-15	Stiff			
>50	V. Dense	16-30	V. Stiff			
		>30	Hard			



SOIL BORING LOG

Boring #: **B-4**
 Project #: 13067.1
 Sheet: 1 of 2
 Chkd by:

Project: Munjoy Heights
 Location: Sheridan St Extension
 City, State: Portland, Maine

Drilling Co: Summit Geoengineering Services, Inc. Boring Elevation: 140 ft +/-
 Driller: C. Coolidge, P.E. Reference: Drainage & Erosion Control Plan by Acorn Engineering
 Summit Staff: B. Peterlein, P.E. Date started: 9/26/2013 Date Completed: 9/26/2013

DRILLING METHOD	SAMPLER	ESTIMATED GROUND WATER DEPTH			
Vehicle: Tracked	Length: 24" SS	Date	Depth	Elevation	Reference
Model: AMS Power Probe	Diameter: 2"OD/1.5"ID	9/26/2013			Caved at 22.6 ft (117 ft +/-) Dry
Method: 2-1/2" H.S.A.	Hammer: 140 lb				
Hammer Style: Auto	Method: ASTM D1586				

Depth (ft.)	SAMPLE DESCRIPTION					Geological/ Test Data	Geological Stratum		
	No.	Pen/Rec (in)	Depth (ft)	blows/6"	N ₆₀				
1						Grass and leaf litter mixed with Silty SAND, dry, loose, SM	FILL		
2									
3									
4									
5									
6	S-1	24/12	5 to 7	3				Dark brown Sandy SILT, trace Gravel, trace rootlets, dry, loose, ML	
7				3					
8				2					
9				3					
10	S-2	24/18	10 to 12	5				Brown Gravelly SAND, trace Silt, dry, compact, SP	MARINE NEAR SHORE
11				11					
12				17					
13				17					
14									
15						Harder drilling at 15 ft			
16	S-3	8/8	15 to 15.6	29		Brown Gravelly SAND, little Silt, dry, dense, SM			
17				50 for 2"					
18						Gray Sandy SILT, little Gravel, humid, very dense, ML	GLACIAL TILL		
19									
20									
21	S-4	24/24	20 to 22	25					
22				14					
23				13					
24				14					
25									

Granular Soils		Cohesive Soils		% Composition ASTM D2487	NOTES: PP = Pocket Penetrometer, MC = Moisture Content LL = Liquid Limit, PI = Plastic Index	Soil Moisture Condition
Blows/ft.	Density	Blows/ft.	Consistency			
0-4	V. Loose	<2	V. soft	< 5% Trace 5-15% Little 15-30% Some > 30% With	Bedrock Joints Shallow = 0 to 35 degrees Dipping = 35 to 55 degrees Steep = 55 to 90 degrees Boulders = diameter > 12 inches, Cobbles = diameter < 12 inches and > 3 inches Gravel = < 3 inch and > No 4, Sand = < No 4 and >No 200, Silt/Clay = < No 200	Dry: S = 0% Humid: S = 1 to 25% Damp: S = 26 to 50% Moist: S = 51 to 75% Wet: S = 76 to 99% Saturated: S = 100%
5-10	Loose	2-4	Soft			
11-30	Compact	5-8	Firm			
31-50	Dense	9-15	Stiff			
>50	V. Dense	16-30	V. Stiff			
		>30	Hard			



SOIL BORING LOG

Boring #: **B-4**
 Project #: 13067.1
 Sheet: 2 of 2
 Chkd by:

Project: Munjoy Heights
 Location: Sheridan St Extension
 City, State: Portland, Maine

Drilling Co: Summit Geoengineering Services, Inc. Boring Elevation: 140 ft +/-
 Driller: C. Coolidge, P.E. Reference: Drainage & Erosion Control Plan by Acorn Engineering
 Summit Staff: B. Peterlein, P.E. Date started: 9/26/2013 Date Completed: 9/26/2013

DRILLING METHOD		SAMPLER		ESTIMATED GROUND WATER DEPTH			
Vehicle: Tracked	Length: 24" SS	Date	Depth	Elevation	Reference		
Model: AMS Power Probe	Diameter: 2"OD/1.5"ID	9/26/2013			Caved at 22.6 ft (117 ft +/-) Dry		
Method: 2-1/2" H.S.A.	Hammer: 140 lb						
Hammer Style: Auto	Method: ASTM D1586						

Depth (ft.)	SAMPLE					Geological/ Test Data	Geological Stratum
	No.	Pen/Rec (in)	Depth (ft)	blows/6"	N ₆₀		
26	S-5	24/24	25 to 27	8		Gray fine Sandy SILT, little Gravel, trace Clay, humid, hard, ML	GLACIAL TILL
				14			
				17			
27				15			
28							
29							
30							
	S-6	24/24	30 to 32	6			
31				8	Same as above		
				18			
32				20			
33					Auger probe to 42 ft		
34							
35							
36							
37							
38							
39							
40							
41							
42					End of Boring at 42 ft		
43							
44							
45							
46							
47							
48							
49							
50							

Granular Soils		Cohesive Soils		% Composition ASTM D2487	NOTES: PP = Pocket Penetrometer, MC = Moisture Content LL = Liquid Limit, PI = Plastic Index	Soil Moisture Condition
Blows/ft.	Density	Blows/ft.	Consistency			
0-4	V. Loose	<2	V. soft		Bedrock Joints Shallow = 0 to 35 degrees Dipping = 35 to 55 degrees Steep = 55 to 90 degrees Boulders = diameter > 12 inches, Cobbles = diameter < 12 inches and > 3 inches Gravel = < 3 inch and > No 4, Sand = < No 4 and >No 200, Silt/Clay = < No 200	Dry: S = 0% Humid: S = 1 to 25% Damp: S = 26 to 50% Moist: S = 51 to 75% Wet: S = 76 to 99% Saturated: S = 100%
5-10	Loose	2-4	Soft	< 5% Trace		
11-30	Compact	5-8	Firm	5-15% Little		
31-50	Dense	9-15	Stiff	15-30% Some		
>50	V. Dense	16-30	V. Stiff	> 30% With		
		>30	Hard			



SOIL BORING LOG

Boring #: **B-5**
 Project #: 13067.1
 Sheet: 1 of 1
 Chkd by:

Project: Munjoy Heights
 Location: Sheridan St Extension
 City, State: Portland, Maine

Drilling Co: Summit Geoengineering Services, Inc. Boring Elevation: 119 ft +/-
 Driller: C. Coolidge, P.E. Reference: Drainage & Erosion Control Plan by Acorn Engineering
 Summit Staff: B. Peterlein, P.E. Date started: 9/26/2013 Date Completed: 9/26/2013

DRILLING METHOD	SAMPLER	ESTIMATED GROUND WATER DEPTH			
Vehicle: Tracked	Length: 24" SS	Date	Depth	Elevation	Reference
Model: AMS Power Probe	Diameter: 2"OD/1.5"ID	9/26/2013			
Method: 2-1/2" H.S.A.	Hammer: 140 lb				
Hammer Style: Auto	Method: ASTM D1586				

Depth (ft.)	SAMPLE DESCRIPTION					Geological/ Test Data	Geological Stratum
	No.	Pen/Rec (in)	Depth (ft)	blows/6"	N ₆₀		
1						4" dark brown Sandy SILT, trace rootlets, moist, ML	TOPSOIL
2						Olive-brown Clayey SILT, little fine SAND, moist, firm, ML	FILL
3							
4							
5							
6	S-1	22/22	5 to 6.9	8		Gray Sandy SILT, trace Gravel and Clay, moist to damp, stiff, ML	
7				7			
				7			
				8 for 4" then REF			
8						Boulder at 7 ft, refusal, move 5 feet and re-drill	GLACIAL TILL
9							
10							
11	S-2	24/24	10 to 12	7		Gray Sandy SILT, little Gravel, trace Clay, damp, hard, ML	
				23			
				14			
				14			
12							
13							
14							
15							
16	S-3	24/18	15 to 17	14		Same as above, damp	
				31			
				35			
				26			
17							
18							
19							
20							
21	S-4	24/24	20 to 22	8		Same as above, wet	
				18			
				21			
				24			
22							
23						End of Boring at 22 ft	
24							
25							

Granular Soils		Cohesive Soils		% Composition ASTM D2487	NOTES: PP = Pocket Penetrometer, MC = Moisture Content LL = Liquid Limit, PI = Plastic Index <u>Bedrock Joints</u> Shallow = 0 to 35 degrees Dipping = 35 to 55 degrees Steep = 55 to 90 degrees Boulders = diameter > 12 inches, Cobbles = diameter < 12 inches and > 3 inches Gravel = < 3 inch and > No 4, Sand = < No 4 and >No 200, Silt/Clay = < No 200	Soil Moisture Condition Dry: S = 0% Humid: S = 1 to 25% Damp: S = 26 to 50% Moist: S = 51 to 75% Wet: S = 76 to 99% Saturated: S = 100%
Blows/ft.	Density	Blows/ft.	Consistency			
0-4	V. Loose	<2	V. soft			
5-10	Loose	2-4	Soft	< 5% Trace		
11-30	Compact	5-8	Firm	5-15% Little		
31-50	Dense	9-15	Stiff	15-30% Some		
>50	V. Dense	16-30	V. Stiff	> 30% With		
		>30	Hard			



SOIL BORING LOG

Boring #: **B-6**
 Project #: 13067.1
 Sheet: 1 of 1
 Chkd by:

Project: Munjoy Heights
 Location: Sheridan St Extension
 City, State: Portland, Maine

Drilling Co: Summit Geoengineering Services, Inc. Boring Elevation: 117 ft +/-
 Driller: C. Coolidge, P.E. Reference: Drainage & Erosion Control Plan by Acorn Engineering
 Summit Staff: B. Peterlein, P.E. Date started: 9/26/2013 Date Completed: 9/26/2013

DRILLING METHOD	SAMPLER	ESTIMATED GROUND WATER DEPTH			
Vehicle: Tracked	Length: 24" SS	Date	Depth	Elevation	Reference
Model: AMS Power Probe	Diameter: 2"OD/1.5"ID	9/26/2013			
Method: 2-1/2" H.S.A.	Hammer: 140 lb				
Hammer Style: Auto	Method: ASTM D1586				

Depth (ft.)	SAMPLER					SAMPLE DESCRIPTION	Geological/ Test Data	Geological Stratum		
	No.	Pen/Rec (in)	Depth (ft)	blows/6"	N ₆₀					
1						Dark brown Sandy SILT, trace Gravel, trace rootlets, humid, loose, ML		TOPSOIL		
2						Brown Gravelly SAND, trace Silt, dry, compact, SP		MARINE NEAR SHORE		
3										
4										
5										
6	S-1	24/24	5 to 7	11						
7				14	Brown Gravelly SAND, trace Silt, dry, compact, SP					
8				12						
9				13						
10										
11	S-2	24/24	10 to 12	2						
12				3				Brown Gravelly SAND, trace Silt, trace Gravel and Clay, damp, firm, SM		GLACIAL TILL
13				3						
14				2						
15										
16	S-3	24/24	15 to 17	3						
17				4						
18				10						
19				5						
20										
21	S-4	24/24	20 to 22	4						
22				15	Same as above, very stiff					
23				13						
24				14						
25										
26	S-5	24/24	25 to 27	10						
27				15						
				14						
				17						

End of Boring at 22 ft

Granular Soils		Cohesive Soils		% Composition ASTM D2487	NOTES: PP = Pocket Penetrometer, MC = Moisture Content LL = Liquid Limit, PI = Plastic Index	Soil Moisture Condition
Blows/ft.	Density	Blows/ft.	Consistency			
0-4	V. Loose	<2	V. soft	< 5% Trace	<u>Bedrock Joints</u> Shallow = 0 to 35 degrees Dipping = 35 to 55 degrees Steep = 55 to 90 degrees Boulders = diameter > 12 inches, Cobbles = diameter < 12 inches and > 3 inches Gravel = < 3 inch and > No 4, Sand = < No 4 and >No 200, Silt/Clay = < No 200	Dry: S = 0% Humid: S = 1 to 25% Damp: S = 26 to 50% Moist: S = 51 to 75% Wet: S = 76 to 99% Saturated: S = 100%
5-10	Loose	2-4	Soft			
11-30	Compact	5-8	Firm			
31-50	Dense	9-15	Stiff			
>50	V. Dense	16-30	V. Stiff			
		>30	Hard	> 30% With		