



ATLANTIC TESTING LABORATORIES

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July 17, 2014

Ontario County Department of Public Works
2962 County Route 48
Canandaigua, New York 14424

Telephone: 585-393-2999
Facsimile: 585-396-4283

Attn: Mr. Timothy G. McElligott, PE

Re: Subsurface Investigation Services
FLCC Lot G Reconstruction
Canandaigua, Ontario County, New York
ATL No. CD3691D-01-07-14

Ladies and Gentleman:

At the request of Mr. Timothy G. McElligott, PE, representing Ontario County Department of Public Works, and in accordance with our term agreement, Atlantic Testing Laboratories, Limited (ATL) performed a Subsurface Investigation for the referenced project. The field investigation was performed on June 12 and 13, 2014.

The subsurface investigation was performed in Parking Lot G of the Finger Lakes Community College. The boring locations were selected and staked by representatives of Ontario County Department of Public Works. Boring elevations were not provided to ATL.

Eight borings were advanced in the existing parking lot. Soil sampling and standard penetration testing was performed utilizing a 2-inch outside diameter split spoon sampler in accordance with ASTM D 1586. Soil sampling was generally performed continuously to boring termination at a depth 6 feet.

The soil samples were visually classified in the laboratory by an engineering technician in general accordance with the Burmister Soil Classification System. The split spoon sampler does not recover material larger than 1 $\frac{3}{8}$ -inch in nominal dimension; therefore, the soil classifications may not be representative of the entire soil matrix. The visual soil classifications and the standard penetration test results are presented on the Subsurface Investigation Logs that are attached.

Field CBRs were performed in the boreholes after obtaining the 2-inch split spoon sample. The Field CBR results are presented below.

Field CBR Results

Boring No.	Depth (ft)	CBR @ 0.1"	CBR @ 0.2"
BH-7	1.5	17	33
BH-8	1.5	20	40
BH-9	1.5	23	45
BH-10	1.5	23	40
BH-11	1.5	12	16
BH-12	1.5	14	20
BH-13	1.5	10	13
BH-14	1.5	10	24

The boreholes were backfilled with on-site soils and patched at the surface with asphalt cold patch. It is important that the backfilled boreholes be monitored for settlement or subsidence. This will be the responsibility of Ontario County Department of Public Works. ATL assumes no liability for loss or damage resulting from borehole settlement.

Select soil samples were submitted to ATL's geotechnical laboratory for physical analyses. Water Content Determination of Soil (ASTM D 2216) was performed on nine soil samples. The test results are located on the subsurface investigation logs included in Appendix C.

A Particle Size Analysis with and without Hydrometer (ASTM D 422) was performed on eight soil samples. The Particle Size Distribution Curves are attached.

Atteberg Limit Determination (ASTM D 4318) was performed on four soil samples. The results are presented on the subsurface investigation logs that are attached and the table below.

Boring No.	Sample No.	Depth (ft)	Natural Moisture Content (%)	Liquid Limit	Plastic Limit	Plasticity Index
BH-7	S-3	4-6	20.3	48	20	28
BH-9	S-2	2-4	26.1	62	24	38
BH-12	S-2	2-4	23.8	57	22	35
BH-14	S-2	2-4	30.0	58	23	35

The soil samples obtained during this investigation will be retained for a period of 6 months and subsequently discarded, unless otherwise instructed.

Please contact our office if you have any questions or if we may be of further service. We look forward to our continued association to obtain a successful completion of the project.

Sincerely,
ATLANTIC TESTING LABORATORIES, Limited

A handwritten signature in black ink, appearing to read 'AJS', with a stylized flourish at the end.

Adam J. Schneider, PE
Engineer

AJS/AEM/ajs

Enclosures

ATLANTIC TESTING LABORATORIES, Limited

Subsurface Investigation

Client: Ontario County
 Project: Subsurface Investigation
FLCC G Lot Reconstruction
Canandaigua, New York

Report No.: CD3691G-01-06-14
 Boring Location: See Boring Location Plan

Boring No.: BH-7 Sheet 1 of 1
 Coordinates _____
 Latitude _____
 Longitude _____
 Ground Elev.: _____
 Sampler Hammer Weight: 140 lbs.
 Fall: 30 in.
 Hammer Type: Automatic
 Boring Advance By: 2" Split Spoon

Start Date: 6/12/2014 Finish Date: 6/12/2014
 Groundwater Observations
 Date: 6/12/2014 Time: PM Depth: DRY Casing: NA

ATL-LOG1 CD3691 ONTARIO COUNTY - CANANDAIGUA, NEW YORK.GPJ LOG-WELL.GDT 7/17/14

DEPTH	METHOD OF ADVANCE	SAMPLE NO.	DEPTH OF SAMPLE		SAMPLE TYPE	BLOWS ON SAMPLER PER 6" 2" O.D. SAMPLER	DEPTH OF CHANGE	CLASSIFICATION OF MATERIAL	Recovery (Inches)
			From	To					
1	S P L I T	1	0.0	1.5	SS	15 8 7	0.1	1" ASPHALT CHIP SEAL	7
2		2	1.5	3.5		4 5 7 10	1.5	Brown cmf GRAVEL (rock fragments); some cmf SAND; trace SILT (moist, non-plastic)	13
3	S P O O N	3	3.5	5.5	SS	12 15 16 22	5.5	Brown CLAY; little SILT; trace cmf SAND (wet, plastic) w=26.3%	24
4								Brown CLAY; little SILT; trace f SAND (wet, plastic) w=20.3%, LL=48, PL=20, PI=28	
5								Boring terminated at 5.5 feet.	
6								Notes: 1. CBR test performed at 1.5 ft. 2. Borehole backfilled with on-site soils and the surface was patched with asphalt cold patch.	
7									
8									
9									
10									
11									
12									
13									
14									
15									

SS Split Spoon Sample
 NX Rock Core
 SH Undisturbed Sample (Shelby Tube)
 Estimated Groundwater

Drillers: Brad Perry; Justin Lehman
 Inspector: _____

ATLANTIC TESTING LABORATORIES, Limited

Subsurface Investigation

Client: Ontario County
 Project: Subsurface Investigation
FLCC G Lot Reconstruction
Canandaigua, New York

Report No.: CD3691G-01-06-14
 Boring Location: See Boring Location Plan

Boring No.: BH-8 Sheet 1 of 1
 Coordinates _____ Sampler Hammer
 Latitude _____ Weight: 140 lbs.
 Longitude _____ Fall: 30 in.
 Hammer Type: Automatic
 Ground Elev.: _____ Boring Advance By:
2" Split Spoon

Start Date: 6/12/2014 Finish Date: 6/12/2014
 Groundwater Observations
 Date Time Depth Casing
6/12/2014 PM DRY NA

ATL-LOG1 CD3691 ONTARIO COUNTY - CANANDAIGUA, NEW YORK.GPJ LOG-WELL.GDT 7/17/14

DEPTH	METHOD OF ADVANCE	SAMPLE NO.	DEPTH OF SAMPLE		SAMPLE TYPE	BLOWS ON SAMPLER PER 6" 2" O.D. SAMPLER	DEPTH OF CHANGE	CLASSIFICATION OF MATERIAL	Recovery (Inches)
			From	To					
1	S P L I T	1	0.0	1.5	SS	19 8 8	0.1	0.75" ASPHALT CHIP SEAL	18
2		2	1.5	3.5		21 18 18 13	1.5	Brown cmf GRAVEL (rock fragments); some cmf SAND; trace SILT (wet, non-plastic)	24
3	S P O O N	3	3.5	5.5	SS	28 13 13 9	5.5	Brown cmf SAND; some mf GRAVEL (rock fragments); some SILT; trace CLAY (wet, slightly plastic) w=9.0%	20
4								Brownish-Grey cmf GRAVEL (rock fragments); and cmf SAND; trace SILT (wet, non-plastic)	
5								Boring terminated at 5.5 feet.	
6								Notes: 1. CBR test performed at 1.5 ft. 2. Borehole backfilled with on-site soils and the surface was patched with asphalt cold patch.	
7									
8									
9									
10									
11									
12									
13									
14									
15									

SS Split Spoon Sample
 NX Rock Core
 SH Undisturbed Sample (Shelby Tube)
 Estimated Groundwater

Drillers: Brad Perry; Justin Lehman
 Inspector: _____

ATLANTIC TESTING LABORATORIES, Limited

Subsurface Investigation

Client: Ontario County
 Project: Subsurface Investigation
FLCC G Lot Reconstruction
Canandaigua, New York

Report No.: CD3691G-01-06-14
 Boring Location: See Boring Location Plan

Boring No.: BH-9 Sheet 1 of 1
 Coordinates _____
 Latitude _____
 Longitude _____
 Ground Elev.: _____
 Sampler Hammer Weight: 140 lbs.
 Fall: 30 in.
 Hammer Type: Automatic
 Boring Advance By: 2" Split Spoon

Start Date: 6/12/2014 Finish Date: 6/12/2014
 Groundwater Observations
 Date Time Depth Casing
6/12/2014 PM DRY NA

ATL-LOG1 CD3691 ONTARIO COUNTY - CANANDAIGUA, NEW YORK.GPJ LOG-WELL.GDT 7/17/14

DEPTH	METHOD OF ADVANCE	SAMPLE NO.	DEPTH OF SAMPLE		SAMPLE TYPE	BLOWS ON SAMPLER PER 6" 2" O.D. SAMPLER	DEPTH OF CHANGE	CLASSIFICATION OF MATERIAL	Recovery (Inches)
			From	To					
1	S P L I T	1	0.0	1.5	SS	13 2 3	0.1	1" ASPHALT CHIP SEAL	18
2		2	1.5	3.5		8 8 8 12	1.5	Brown cmf SAND; and cmf GRAVEL (rock fragments); trace SILT; trace ORGANIC MATERIAL (roots) (wet, non-plastic)	24
3	S P O O N	3	3.5	5.5	SS	9 11 14 8	5.5	Brown CLAY; trace SILT; trace mf SAND (wet, plastic) w=26.1%, LL=62, PL=24, PI=38	24
4								Brown CLAY; little SILT; trace f SAND (wet, plastic)	24
5								Boring terminated at 5.5 feet.	
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									

SS Split Spoon Sample
 NX Rock Core
 SH Undisturbed Sample (Shelby Tube)
 Estimated Groundwater

Drillers: Brad Perry; Justin Lehman
 Inspector: _____

ATLANTIC TESTING LABORATORIES, Limited

Subsurface Investigation

Client: Ontario County
 Project: Subsurface Investigation
FLCC G Lot Reconstruction
Canandaigua, New York

Report No.: CD3691G-01-06-14
 Boring Location: See Boring Location Plan

Boring No.: BH-10 Sheet 1 of 1
 Coordinates _____ Sampler Hammer
 Latitude _____ Weight: 140 lbs.
 Longitude _____ Fall: 30 in.
 Hammer Type: Automatic
 Ground Elev.: _____ Boring Advance By:
2" Split Spoon

Start Date: 6/13/2014 Finish Date: 6/13/2014
 Groundwater Observations
 Date Time Depth Casing
6/13/2014 AM DRY NA

ATL-LOG1 CD3691 ONTARIO COUNTY - CANANDAIGUA, NEW YORK.GPJ LOG-WELL.GDT 7/17/14

DEPTH	METHOD OF ADVANCE	SAMPLE NO.	DEPTH OF SAMPLE		SAMPLE TYPE	BLOWS ON SAMPLER PER 6" 2" O.D. SAMPLER	DEPTH OF CHANGE	CLASSIFICATION OF MATERIAL	Recovery (Inches)
			From	To					
1	S P L I T	1	0.0	1.5	SS	13 11 11	0.2	2" ASPHALT CHIP SEAL	6
2		2	1.5	3.5		6 9 9 4	1.5	Brown cmf GRAVEL (rock fragments); and cmf SAND; trace SILT (moist, non-plastic)	16
3	S P O O N	3	3.5	5.5	SS	8 7 13 16	5.5	Brown cmf SAND; some cmf GRAVEL; some SILT (wet, non-plastic) w=8.6%	17
4								Brown cmf SAND; and mf GRAVEL (rock fragments); trace SILT (saturated, non-plastic)	
5								Boring terminated at 5.5 feet.	
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									

SS Split Spoon Sample
 NX Rock Core
 SH Undisturbed Sample (Shelby Tube)
 Estimated Groundwater

Drillers: Brad Perry; Justin Lehman
 Inspector: _____

ATLANTIC TESTING LABORATORIES, Limited

Subsurface Investigation

Client: Ontario County
 Project: Subsurface Investigation
FLCC G Lot Reconstruction
Canandaigua, New York

Report No.: CD3691G-01-06-14
 Boring Location: See Boring Location Plan

Boring No.: BH-12 Sheet 1 of 1
 Coordinates _____ Sampler Hammer
 Latitude _____ Weight: 140 lbs.
 Longitude _____ Fall: 30 in.
 Hammer Type: Automatic
 Ground Elev.: _____ Boring Advance By:
2" Split Spoon

Start Date: 6/13/2014 Finish Date: 6/13/2014
 Groundwater Observations
 Date Time Depth Casing
6/13/2014 PM DRY NA

ATL-LOG1 CD3691 ONTARIO COUNTY - CANANDAIGUA, NEW YORK.GPJ LOG-WELL.GDT 7/17/14

DEPTH	METHOD OF ADVANCE	SAMPLE NO.	DEPTH OF SAMPLE		SAMPLE TYPE	BLOWS ON SAMPLER PER 6" 2" O.D. SAMPLER	DEPTH OF CHANGE	CLASSIFICATION OF MATERIAL	Recovery (Inches)
			From	To					
1	S P L I T	1	0.0	1.5	SS	7 13 4	0.1	1" ASPHALT CHIP SEAL	6
2		2	1.5	3.5		5 8 11 12	1.5	Brown cmf SAND; some mf GRAVEL (rock fragments); some CLAY; trace SILT (wet, plastic)	17
3	S P O O N	3	3.5	5.5	SS	11 13 13 14	5.5	Brown CLAY; trace mf SAND; trace SILT (moist, plastic) w=23.8%, LL=57, PL=22, PI=35	24
4								Similar Soil (moist, plastic)	
5									
6								Boring terminated at 5.5 feet.	
7								Notes: 1. CBR test performed at 1.5 ft. 2. Borehole backfilled with on-site soils and the surface was patched with asphalt cold patch.	
8									
9									
10									
11									
12									
13									
14									
15									

SS Split Spoon Sample
 NX Rock Core
 SH Undisturbed Sample (Shelby Tube)
 Estimated Groundwater

Drillers: Brad Perry; Justin Lehman
 Inspector: _____

ATLANTIC TESTING LABORATORIES, Limited

Subsurface Investigation

Client: Ontario County
 Project: Subsurface Investigation
FLCC G Lot Reconstruction
Canandaigua, New York

Report No.: CD3691G-01-06-14
 Boring Location: See Boring Location Plan

Boring No.: BH-14 Sheet 1 of 1
 Coordinates _____
 Latitude _____
 Longitude _____
 Ground Elev.: _____
 Sampler Hammer Weight: 140 lbs.
 Fall: 30 in.
 Hammer Type: Automatic
 Boring Advance By: 2" Split Spoon

Start Date: 6/13/2014 Finish Date: 6/13/2014
 Groundwater Observations
 Date Time Depth Casing
6/13/2014 PM DRY NA

ATL-LOG1 CD3691 ONTARIO COUNTY - CANANDAIGUA, NEW YORK.GPJ LOG-WELL.GDT 7/17/14

DEPTH	METHOD OF ADVANCE	SAMPLE NO.	DEPTH OF SAMPLE		SAMPLE TYPE	BLOWS ON SAMPLER PER 6" 2" O.D. SAMPLER	DEPTH OF CHANGE	CLASSIFICATION OF MATERIAL	Recovery (Inches)					
			From	To										
1	S P L I T	1	0.0	1.5	SS	7 10 6	0.1	0.75" ASPHALT CHIP SEAL Brown cmf SAND; some mf GRAVEL; little SILT (moist, non-plastic)	12					
2		2	1.5	3.5		6 9 9 10	1.5		Brown CLAY; trace mf SAND; trace SILT (wet, plastic) w=30.0%, LL=58, PL=23, PI=35	24				
3	S P O O N	3	3.5	5.5	SS	10 13 9 15	5.5	Brown CLAY; little SILT; trace f SAND; trace f GRAVEL (wet, plastic) Boring terminated at 5.5 feet. Notes: 1. CBR test performed at 1.5 ft. 2. Borehole backfilled with on-site soils and the surface was patched with asphalt cold patch.	24					
4														
5														
6														
7														
8														
9														
10														
11														
12														
13														
14														
15														

SS Split Spoon Sample
 NX Rock Core
 SH Undisturbed Sample (Shelby Tube)
 Estimated Groundwater

Drillers: Brad Perry; Justin Lehman
 Inspector: _____

Particle Size Distribution Report

Project: FLCC G Lot Reconstruction, Canandaigua, New York **Report No.:** CD3691SL-01-07-14

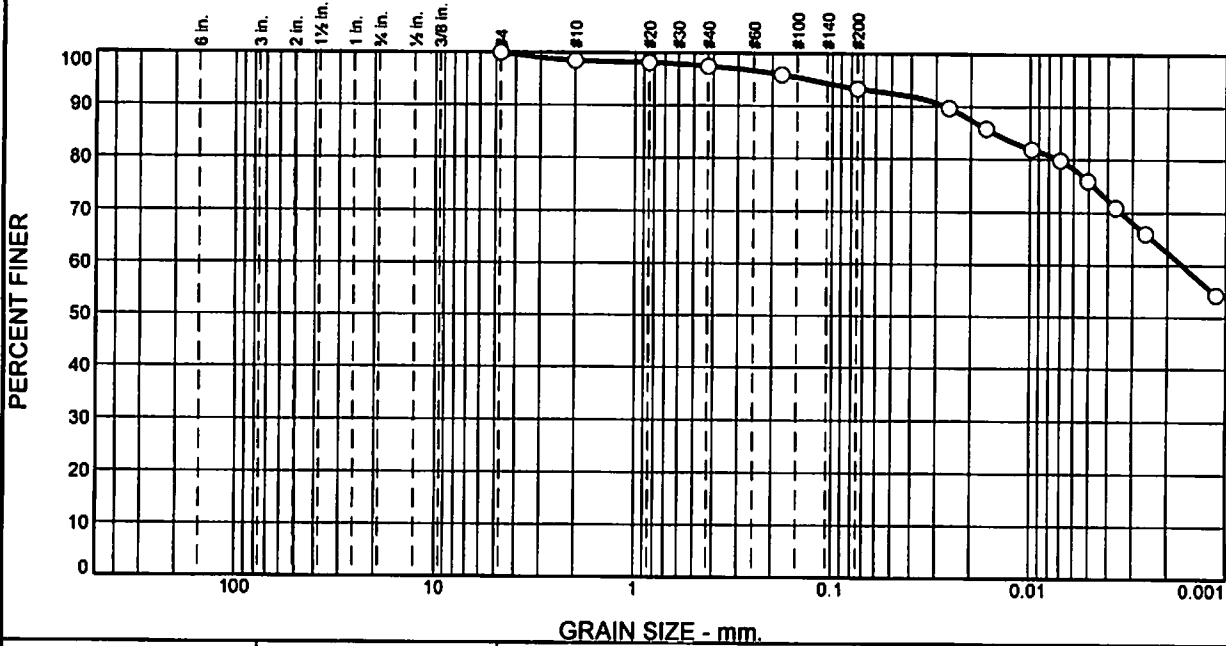
Client: Ontario County Department of Public Works

Date: 7/17/14

Sample No: BH-7; S-2
Location: In-Situ

Source of Sample: Boring Sample

Elev./Depth: 2.0 - 4.0'



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	0	0	2	1	4	17	76

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	OUT OF SPEC. (X)
#4	100		
#10	98		
#20	98		
#40	97		
#80	96		
#200	93		

Soil Description
Brown CLAY; little SILT; trace cmf SAND

Atterberg Limits
PL= -- LL= -- PI= --

Coefficients
D₈₅= 0.0153 D₆₀= 0.0017 D₅₀=
D₃₀= D₁₅= D₁₀=
C_u= C_c=

Classification
USCS= CL AASHTO=

Remarks
Moisture content 26.3%

* (no specification provided)

ATLANTIC TESTING LABORATORIES, LIMITED

Figure

Reviewed by:

Date: 7/17/14

Particle Size Distribution Report

Project: FLCC G Lot Reconstruction, Canandaigua, New York **Report No.:** CD3691SL-02-07-14

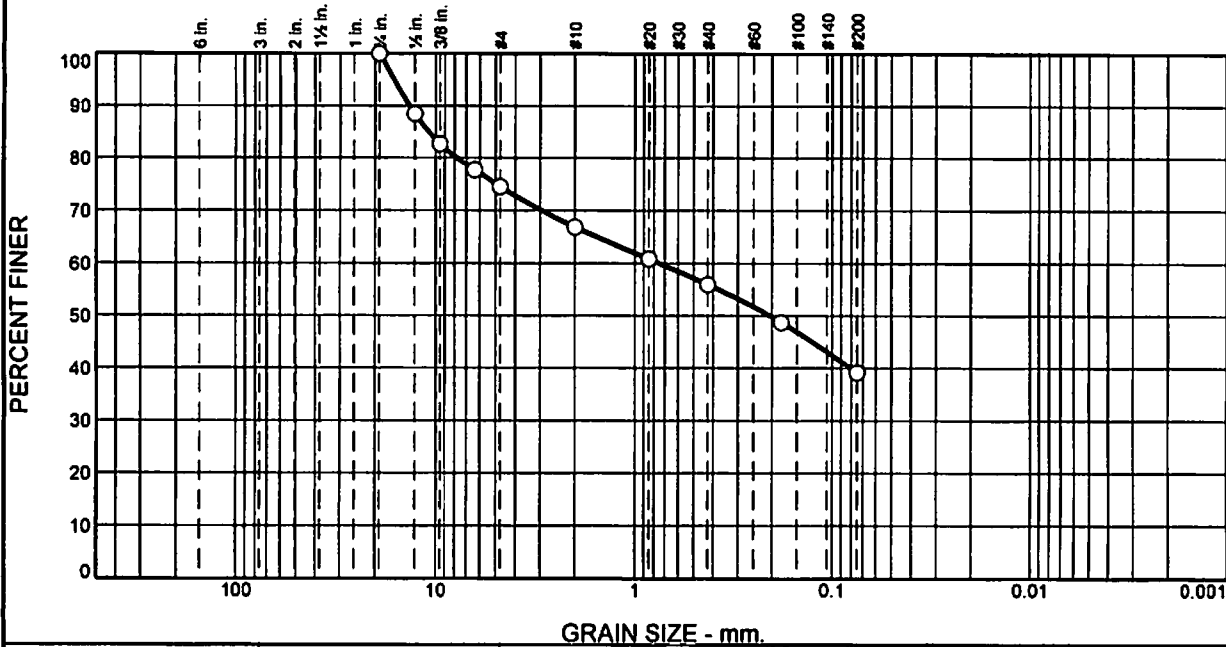
Client: Ontario County Department of Public Works

Date: 7/15/14

Sample No: BH-8; S-2
Location: In-Situ

Source of Sample: Boring Sample

Elev./Depth: 2.0 - 4.0'



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	0	25	8	11	17	39	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	OUT OF SPEC. (X)
3/4"	100		
1/2"	88		
3/8"	83		
1/4"	78		
#4	75		
#10	67		
#20	61		
#40	56		
#80	49		
#200	39		

Soil Description

Brown cmf SAND; some mf GRAVEL; some SILT; trace CLAY

Atterberg Limits

PL= -- LL= -- PI= --

Coefficients

D₈₅= 10.8674 D₆₀= 0.7461 D₅₀= 0.2050
D₃₀= D₁₅= D₁₀=
C_u= C_c=

Classification

USCS= SC-SM AASHTO=

Remarks

Moisture content 9.0%

* (no specification provided)

ATLANTIC TESTING LABORATORIES, LIMITED

Figure

Reviewed by:

Date: 7/17/14

Particle Size Distribution Report

Project: FLCC G Lot Reconstruction, Canandaigua, New York **Report No.:** CD3691SL-04-07-14

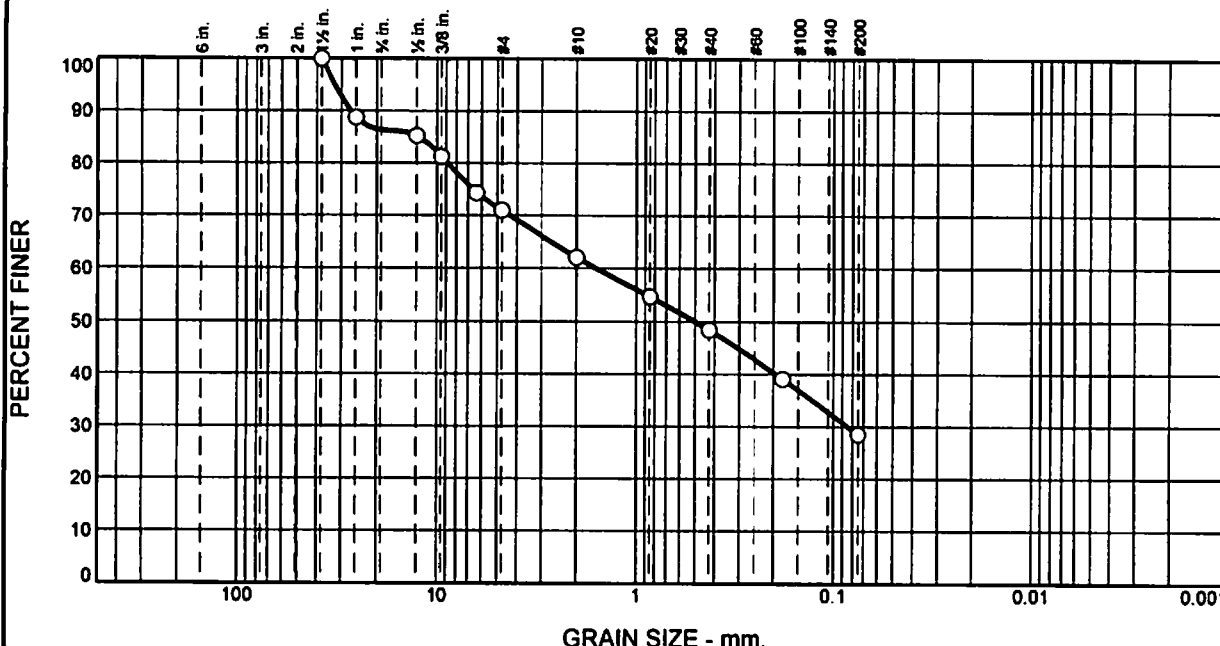
Client: Ontario County Department of Public Works

Date: 7/15/14

Sample No: BH-10; S-2
Location: In-Situ

Source of Sample: Boring Sample

Elev./Depth: 2.0 - 4.0'



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	14	15	9	14	20	28	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	OUT OF SPEC. (X)
1-1/2"	100		
1"	89		
1/2"	85		
3/8"	81		
1/4"	74		
#4	71		
#10	62		
#20	55		
#40	48		
#80	39		
#200	28		

Soil Description

Brown cmf SAND; some cmf GRAVEL; some SILT

Atterberg Limits

PL= -- LL= -- PI= --

Coefficients

D₈₅= 12.3956 D₆₀= 1.5942 D₅₀= 0.4986
D₃₀= 0.0851 D₁₅= D₁₀=
C_u= C_c=

Classification

USCS= SM AASHTO=

Remarks

Moisture content 8.6%

* (no specification provided)

ATLANTIC TESTING LABORATORIES, LIMITED

Figure

Reviewed by: _____

Date: 7/17/14

Particle Size Distribution Report

Project: FLCC G Lot Reconstruction, Canandaigua, New York **Report No.:** CD3691SL-05-07-14

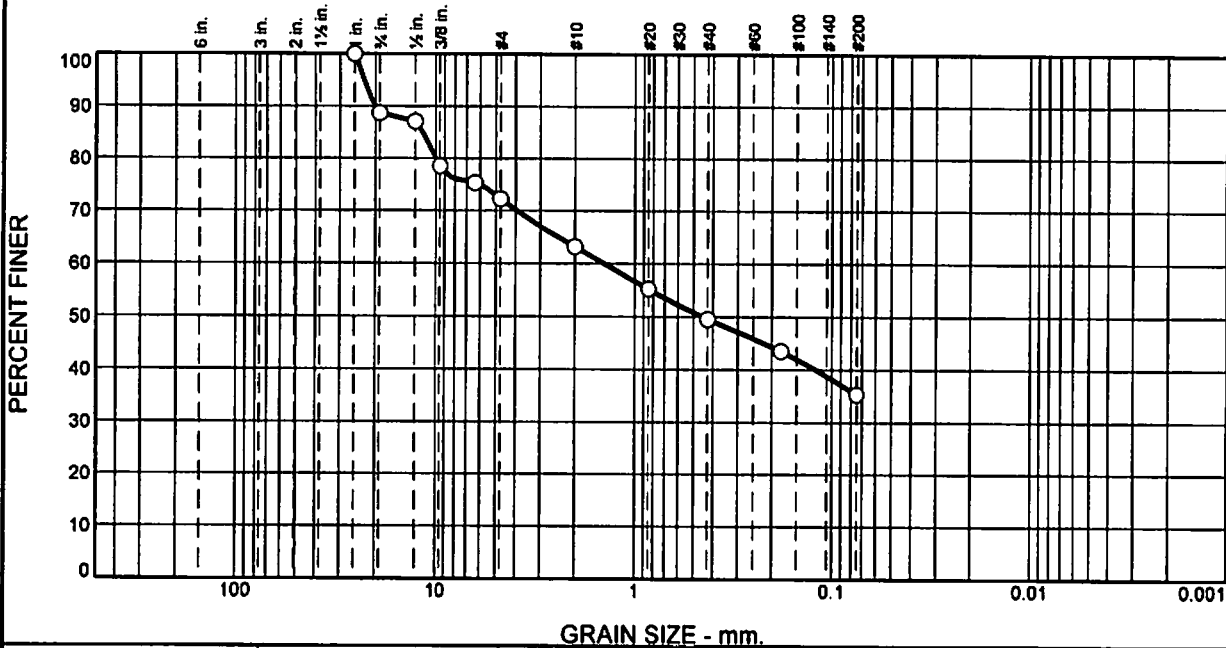
Client: Ontario County Department of Public Works

Date: 7/15/14

Sample No: BH-11; S-2
Location: In-Situ

Source of Sample: Boring Sample

Elev./Depth: 2.0 - 4.0'



Particle Size Distribution Report

Project: FLCC G Lot Reconstruction, Canandaigua, New York **Report No.:** CD3691SL-06-07-14

Client: Ontario County Department of Public Works

Date: 7/17/14

Sample No: BH-12; S-2
Location: In-Situ

Source of Sample: Boring Sample

Elev./Depth: 2.0 - 4.0'

