REPORT
SUBSURFACE INVESTIGATION

PROPOSED WETLAND MITIGATION SITES
THOMPSON, SULLIVAN COUNTY, NEW YORK
CONCORD RESORT DEVELOPMENT

SEPTEMBER 28, 2012

Prepared By:
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MTA Project No.: 8979-002*1D

MELICK-TULLY AND ASSOCIATES, P.C.
GEOTECHNICAL ENGINEERS AND ENVIRONMENTAL CONSULTANTS

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September 28, 2012

AKRF, Inc.
1307 Fellowship Road, Suite 214
Mount Laurel, New Jersey 08054

Attention: Mr. Shandor Szalay
Vice President, Water Resources

Report
Subsurface Investigation
Proposed Wetland Mitigation Sites
Thompson, New York
Concord Resort Development

Introduction

This report presents the results of a subsurface investigation performed by Melick-Tully and Associates, P.C. (MTA) for three potential wetland mitigation areas at the Concord Resort Development site located in the Town of Thompson, Sullivan County, New York. The areas of the proposed new wetlands mitigation are located north and south of Thompsonville Road, to the west of its intersection with Chalet/Joyland Road, as shown on the Site Location Map, Plate 1. This report was prepared in general accordance with our revised proposal dated July 25, 2012.

Background Data

MTA previously performed a subsurface investigation for the resort development, the results of which were presented in our report dated May 1, 2012. We understand, as the planning of the proposed development evolves, it is planned to create new wetland areas to replace those which may be developed. This report addresses additional subsurface explorations and

laboratory testing performed to evaluate the subsurface conditions in three separate areas which may be converted to wetlands as part of the overall project.

Purpose and Scope of Work

The purpose of our services was to perform a series of 7 test borings and 15 test pit explorations at locations identified to us by AKRF. The borings were advanced using hollow stem auger drilling equipment mounted on an all-terrain vehicle, and extended to depths ranging from approximately 9 to 22 feet below the existing surface grades. The test pits were advanced utilizing a rubber-tire backhoe and extended to depths ranging from approximately 7 to 10 feet below the existing surface grades. The approximate locations of the explorations performed for this study are shown on the Plot Plans, Plates 2A through 2C.

All work was performed under the direct technical observation of engineers and geologists from MTA. Our representatives located the explorations in the field utilizing topographic information and the existing site features in conjunction with representatives of the existing "Concord Monster" golf course and representatives of AKRF to minimize disturbance to existing site features and to adjust exploration locations to benefit the study. Our representatives maintained continuous logs of the explorations as the work proceeded, supervised the soil sampling procedures during the drilling operations, and obtained bulk samples of the encountered materials from the test pits. Numerous closely spaced soil samples were obtained from the borings using the general procedures of the Standard Penetration Test. As part of the test pit exploration program, our representative performed bulk density determinations of the encountered materials using a nuclear density gauge (ASTM D-6938-08a) and performed three modified double-ring infiltrometer permeability tests. ASTM D-3385 requires the use of 12 and

24 inch diameter steel rings. Our modified procedure used PVC rings 8 and 12 inches in diameter. For reference, this procedure is accepted by the Pennsylvania Department of Environmental Protection.

All soil samples obtained from the explorations were brought to our office where they were further examined in our soil mechanics laboratory. Detailed descriptions of the materials encountered in the borings are shown on the individual boring logs, Plates 3A through 3G. The results of the test pit explorations are shown on Plates 4A through 4O, Logs of Test Pits. The soils were visually classified in general accordance with the Unified Soil Classification System, presented on Plate 5.

Numerous soil samples were subjected to laboratory testing consisting of grain-size analyses (ASTM D-422), organic content testing (ASTM D-2974), and moisture content determinations (ASTM D-2216) to aid in their engineering classification and evaluation. The results of the grain-size tests are presented on Plates 6A through 6J, Gradation Curves. The results of the organic content testing, moisture content determinations, and bulk density tests are presented on the appropriate exploration logs and on Plate 7, Data Summary Sheet. The results of the modified double-ring infiltrometer testing performed in the field are shown on the appropriate test pit logs.

The results of our subsurface exploration program, our visual examination of the soil samples and the laboratory testing are presented in subsequent sections of this report. The following presentation of our field observations and test results are subject to the limitations attached as an Appendix to this report.

Site Condition

Surface Features: The majority of the site is presently occupied by an active golf course which is primarily grass covered with sand and water hazards, and paved cart paths. The portion of the course where Borings 5 through 7 and Test Pits 5 through 7 were located, adjacent to and south of Chalet Road, west of Kiamesha Creek, is an unused overgrown portion of the golf course.

Topographic information shown on plans provided to us indicates that surface elevations across the area investigated for this study vary from approximately Elevation +1337 feet to Elevation +1358 feet.

Subsurface Conditions: The following generalized strata were encountered in the explorations and are listed in order of increasing depth:

1) Topsoil: A surficial layer of topsoil was encountered in six of the seven borings and 14 of the 15 test pit explorations. The topsoil was generally found to range from approximately four to eight inches in thickness; however, in Test Pits 5, 8, 12 and 13, the topsoil was observed to be approximately 11 to 24 inches thick.

2) Fill: Fill consisting of silty sands and sandy silts mixed with varying amounts of gravel, roots and topsoil was encountered below the topsoil in four of the borings and ten of the test pits, and is likely the result of grading operations to construct the existing golf course. The fill was generally found to be approximately 18 inches to 4-1/2 feet thick. In Test Pit No. 5, the fill was observed to extend to the completion depth of that test pit, ten feet below the existing ground surface.

3) Organic Silts/Peat: In six of the explorations, a distinct layer of organic silt and/or peat with varying amount of sandy silt was observed. The organic layer was encountered at 1.5 to 4.5 feet below grade and extended to depths of approximately 2 feet to 6.5 feet below the existing surface grades and ranged from approximately six inches to three feet in thickness.

4) Silty Sand: Below the surficial topsoil, fill and organic materials, the natural soils in most of the test pits typically consisted of sands and silty

sands containing varying amounts of gravel, cobbles and boulders. The sandy soils are believed to be glacial in nature and extended to the completion depths in the majority of the explorations performed.

5) Silt: The glacial sandy soils contain varying amounts of silt; however, in several of the samples subjected to laboratory grain-size testing, the silt percentages were high enough to classify the materials as silt, as indicated on the appropriate exploration logs.

6) Shale Bedrock: In Borings 3 and 4, the sandy soils were underlain by shale bedrock encountered at depths of approximately two to ten feet below the existing surface grades. In general, the shale bedrock was found to grade sounder with depth, and refusal to further penetration with the auger was encountered at a depth of 8'9" atop relatively sound shale bedrock in Boring No. 3.

Groundwater was observed in six of the borings at depths of approximately two to ten and one-half feet below grade, and in 14 of the 15 test pit explorations at depths of approximately two to six feet below the existing surface grades at the time of our study. Mottling was observed in 13 of the 22 explorations at shallower levels indicating seasonally high groundwater or seasonally saturated conditions.

Findings/Summary

General: It appears that the majority of the areas in question have been developed by the construction of the existing "Monster" golf course. The results of the moisture content testing, bulk density testing, and organic content testing were somewhat variable in the fill soils as a result of the diverse nature of materials used during construction, placed to construct the course landscape, not as structural fill. In general, the relatively deeper natural materials were consistent with our previous explorations throughout the area, indicating relatively dense glacial materials with varying amounts of cobbles and boulders. It should be noted that the index testing to determine soil parameters excludes cobble and boulder size materials which should be taken into

account if the existing materials are used as a "blend" to create hydric soils in the creation of wetlands areas.

Feel free to contact us if you have any questions regarding this information.

The following Plates are attached and complete this report:

Plate 1 – Site Location Map
Plates 2A through 2C – Plot Plan
Plates 3A through 3G – Logs of Borings
Plates 4A through 4O – Logs of Test Pits
Plate 5 – Unified Soil Classification System
Plates 6A through 6J – Gradation Curves
Plate 7 – Data Summary Sheet
Appendix – Limitations

Very truly yours,

MELICK-TULLY and ASSOCIATES, P.C.

James H. Beattie, P.E.
Senior Associate

Todd E. Horowitz, P.E.
Vice President

JHB/TEH/elm
8979-002*1D
(3 copies submitted)

FROM: "Digital Raster Quadrangles" at 1:24,000 scale provided by New York State GIS Clearinghouse website (http://www.nysgis.state.ny.us/gisdata/quads/).

MELICK–TULLY AND ASSOCIATES, P.C.
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SITE LOCATION MAP

SUBSURFACE INVESTIGATION
THOMPSON, NEW YORK
CONCORD RESORTS

JOB NO.	FILE NO.	DR. BY	CHK. BY	DATE	SCALE	PLATE
8979-002*1D	25541	VJD	JHB	8-24-12	1"=2,000'	1

KEY:

B-1 — NUMBER AND APPROXIMATE LOCATION OF BORINGS PERFORMED FOR THIS STUDY

TP-1 — NUMBER AND APPROXIMATE LOCATION OF TEST PITS PERFORMED FOR THIS STUDY

NOTES:

1. This drawing is part of Melick-Tully and Associates, P.C. Report No. 8979-002*1D and should be read together with the report for complete evaluation.
2. General layout was obtained from an unlabeled drawing provided by the client.

PLOT PLAN

SUBSURFACE INVESTIGATION
THOMPSON, NEW YORK
CONCORD RESORTS

MELICK-TULLY AND ASSOCIATES, P.C.
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JOB NO.	FILE NO.			
8979-002*1D	25541			
DR. BY	CHK. BY	DATE	SCALE	PLATE
VJD	JHB	8-23-12	1"=100'	2A

KEY:

B-1 NUMBER AND APPROXIMATE LOCATION OF BORINGS PERFORMED FOR THIS STUDY

TP-1 NUMBER AND APPROXIMATE LOCATION OF TEST PITS PERFORMED FOR THIS STUDY

NOTES:

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PLOT PLAN

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THOMPSON, NEW YORK
CONCORD RESORTS

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& Environmental Consultants
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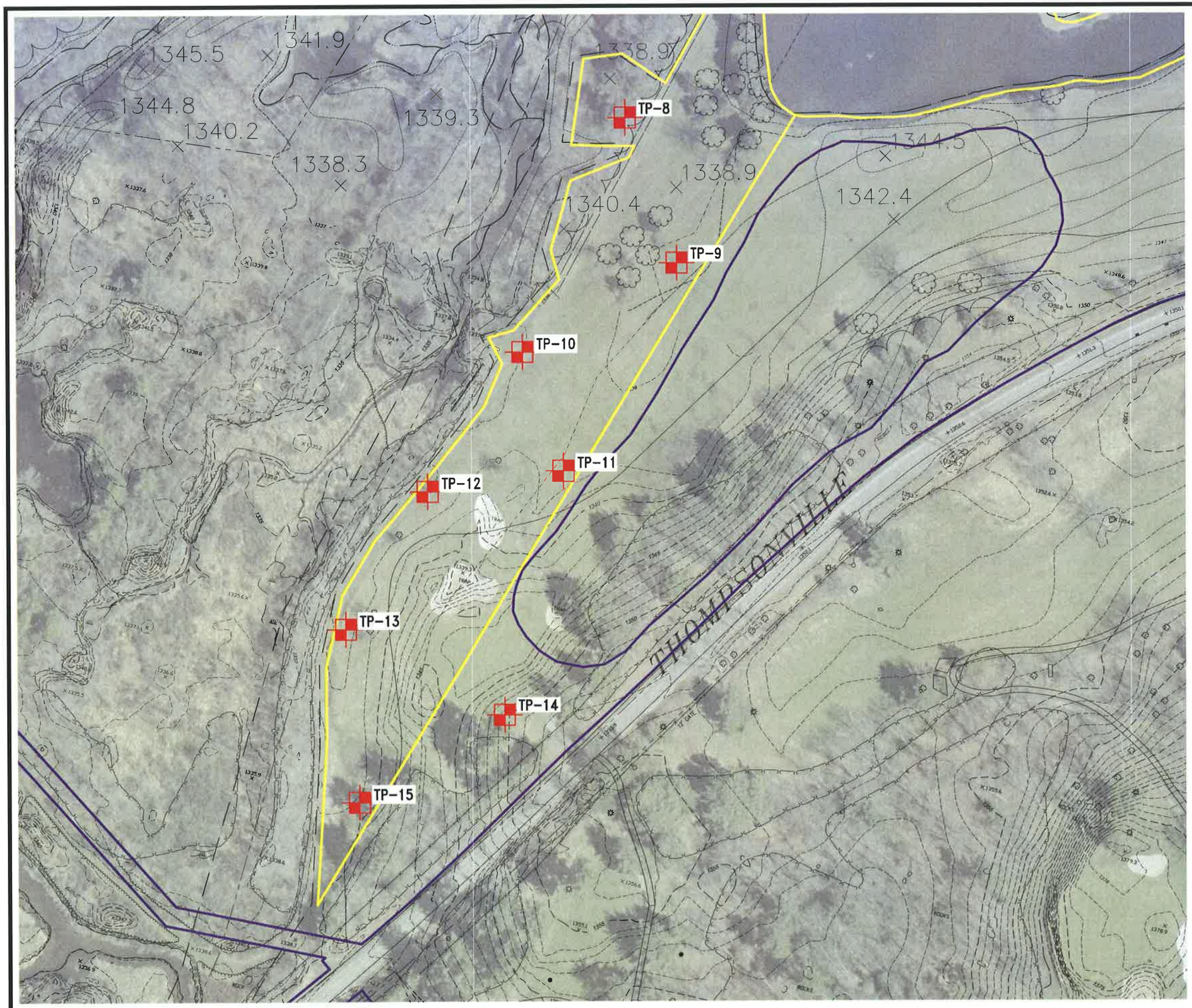
JOB NO.	FILE NO.			
8979–002*1D	25541			
DR. BY	CHK. BY	DATE	SCALE	PLATE
VJD	JHB	8–23–12	1"=100'	2B



KEY:

B-1 — NUMBER AND APPROXIMATE LOCATION OF BORINGS PERFORMED FOR THIS STUDY

TP-1 — NUMBER AND APPROXIMATE LOCATION OF TEST PITS PERFORMED FOR THIS STUDY

NOTES:

1. This drawing is part of Melick-Tully and Associates, P.C. Report No. 8979-002*1D and should be read together with the report for complete evaluation.
2. General layout was obtained from an unlabeled drawing provided by the client.

PLOT PLAN

SUBSURFACE INVESTIGATION
THOMPSON, NEW YORK
CONCORD RESORTS

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& Environmental Consultants
117 Canal Road
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(732) 356-3400

JOB NO.	FILE NO.
8979-002*1D	25541

DR. BY	CHK. BY	DATE	SCALE	PLATE
VJD	JHB	8-23-12	1"=100'	2C

LOG OF BORING

BORING NO. 1

COMPLETION DATE: 8/6/12 | SURFACE ELEVATION: +1,341.5 ft (±) | WATER LEVEL: 5'

JOB NUMBER: 8979-002*1D | READING DATE: 8/6/12

DEPTH (ft.)	SAMPLES	N-VALUE	MOISTURE CONTENT (%)	SYMBOL	DESCRIPTION	DEPTH (ft.)
	S1	9	21.8		6" Topsoil FILL - Gray-brown silt, and fine to medium sand, trace fine gravel	
	S2	7	10.3		FILL - Brown fine to coarse sand, some silt, little fine gravel	
5	S3	18	108.4		Dark brown organic peat - organic matter = 16.7% @ 5'	5
				ML	Red-brown clayey silt, some to little fine to coarse sand, trace fine gravel (moist)(very stiff to stiff)	
10	S4	12				10
				SM	Red-brown fine to coarse sand, some silt, some fine to coarse gravel (wet)(medium dense)	
15	S5	19				15
20	S6	80/6"				20
					Boring completed @ 21' Mottling observed @ 1'-6" Groundwater encountered @ 5'	
25						25

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH
2. INDICATES THE NUMBER OF BLOWS TO ADVANCE A 2" OD SAMPLER A DISTANCE OF 12 INCHES USING A 140 POUND WEIGHT FALLING 30 INCHES

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: jhb/mh 8/12

Sheet: 1 of 1 PLATE: 3A

MELICK-TULLY AND ASSOCIATES, P.C.
Geotechnical Engineers and Environmental Consultants

LOG OF BORING

BORING NO. 2

COMPLETION DATE: 8/7/12
JOB NUMBER: 8979-002*1D

SURFACE ELEVATION: +1,344 ft (±)

WATER LEVEL: 2'
READING DATE: 8/7/12

DEPTH (ft.)	SAMPLES	N-VALUE	MOISTURE CONTENT (%)	SYMBOL	DESCRIPTION	DEPTH (ft.)
	S1	13			6" Topsoil FILL - Brown fine to medium sand, some silt, some roots and wood	
	S2	5	23.0		FILL - Brown fine sand, and silt	
5	S3	16	29.9	OL	Dark brown organic clayey silt, trace roots (moist)(stiff) - organic matter = 6.5% @ 5'	5
	S4	33		SM	Red-brown fine to medium sand, some clayey silt, some fine to coarse gravel (wet)(dense)	
10	S5	36		SM	Red-brown fine to coarse sand, some silt, some fine to coarse gravel, occasional cobbles and boulders (wet)(dense)	10
15	S6	19		SM	Red-brown fine to coarse sand, little to some silt, some fine to coarse gravel (wet)(medium dense to very dense)	15
	S7	100/4"				
20					Boring completed @ 18'-4" Groundwater encountered @ 2'	20
25						25

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH
2. INDICATES THE NUMBER OF BLOWS TO ADVANCE A 2" OD SAMPLER A DISTANCE OF 12 INCHES USING A 140 POUND WEIGHT FALLING 30 INCHES

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: jhb/mh 8/12

Sheet: 1 of 1 PLATE: 3B

MELICK-TULLY AND ASSOCIATES, P.C.
Geotechnical Engineers and Environmental Consultants

LOG OF BORING

BORING NO. 3

COMPLETION DATE: 8/7/12
JOB NUMBER: 8979-002*1D

SURFACE ELEVATION: +1,355.5 ft (±)

WATER LEVEL: *
READING DATE: 8/7/12

DEPTH (ft.)	SAMPLES	N-VALUE	MOISTURE CONTENT (%)	SYMBOL	DESCRIPTION	DEPTH (ft.)
					6" Topsoil	
	S1	22	16.0	SM	Red-brown fine to coarse sand, some silt, some fine to coarse gravel (moist)(medium dense)	
	S2	86			Highly fractured weathered shale	
5	S3	75/3"				5
	S4	100/3"			- auger refusal @ 8'-9" atop shale bedrock	
10						10
15					Boring completed @ 8'-9" Faint mottling observed @ 4' *Groundwater not encountered	15
20						20
25						25

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH
2. INDICATES THE NUMBER OF BLOWS TO ADVANCE A 2" OD SAMPLER A DISTANCE OF 12 INCHES USING A 140 POUND WEIGHT FALLING 30 INCHES

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: jhb/mh 8/12

Sheet 1 of 1 PLATE 3C

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LOG OF BORING

BORING NO. 4

COMPLETION DATE: 8/7/12
JOB NUMBER: 8979-002*1D

SURFACE ELEVATION: +1,358 ft (±)

WATER LEVEL: 10.5'
READING DATE: 8/7/12

DEPTH (ft.)	SAMPLES	N-VALUE	MOISTURE CONTENT (%)	SYMBOL	DESCRIPTION	DEPTH (ft.)
0	S1	11	10.1		6" Topsoil FILL - Red-brown fine to coarse sand, and silt, little fine gravel	0
	S2	17	17.0	SM	Red-brown fine to coarse sand, little silt, and shale fragments (moist)(medium dense to very dense)	
5	S3	99				5
10	S4	100/6"			Highly fractured weathered shale	10
15	S5	80/6"				15
20					Boring completed @ 17' Mottling observed @ 4' Groundwater encountered @ 10'-6"	20
25						25

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH
2. INDICATES THE NUMBER OF BLOWS TO ADVANCE A 2" OD SAMPLER A DISTANCE OF 12 INCHES USING A 140 POUND WEIGHT FALLING 30 INCHES

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: jhb/mh 8/12

Sheet: 1 of 1 PLATE: 3D

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LOG OF BORING

BORING NO. 5

COMPLETION DATE: 8/6/12
JOB NUMBER: 8979-002*1D

SURFACE ELEVATION: +1,350.5 ft (±)

WATER LEVEL: 4'
READING DATE: 8/6/12

DEPTH (ft.)	SAMPLES	N-VALUE	MOISTURE CONTENT (%)	SYMBOL	DESCRIPTION	DEPTH (ft.)
	S1	8	62.9		FILL - Topsoil with layers of fine to coarse sand - organic matter = 13.0% @ 12"	
	S2	27				
5	S3	16		SM	Brown fine to medium sand, little silt (wet)(medium dense)	5
					Red-brown clayey silt, and fine sand (wet)(stiff to very stiff)	
10	S4	8		ML		10
15	S5	10				15
20	S6	17				20
					Boring completed @ 22' Groundwater encountered @ 4'	
25						25

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH
2. INDICATES THE NUMBER OF BLOWS TO ADVANCE A 2" OD SAMPLER A DISTANCE OF 12 INCHES USING A 140 POUND WEIGHT FALLING 30 INCHES

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: jhb/mh 8/12

Sheet: 1 of 1 PLATE: 3E

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LOG OF BORING

BORING NO. 6

COMPLETION DATE: 8/6/12 | SURFACE ELEVATION: +1,350 ft (±) | WATER LEVEL: 6'-6"

JOB NUMBER: 8979-002*1D | READING DATE: 8/6/12

DEPTH (ft.)	SAMPLES	N-VALUE	MOISTURE CONTENT (%)	SYMBOL	DESCRIPTION	DEPTH (ft.)
					4" Topsoil	
	S1	14	9.2		FILL - Red-brown fine to coarse sand, little silt, some fine to coarse gravel	
	S2	22			Gray fine to medium sand, little silt, trace fine to coarse gravel, with occasional silty clay layers (moist to wet)(medium dense)	
5	S3	18				5
10	S4	10		SM		10
15	S5	9				15
20	S6	12				20
					Boring completed @ 22'	
					Motting observed @ 6'-6"	
					Groundwater encountered @ 4'	
25						25

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH
2. INDICATES THE NUMBER OF BLOWS TO ADVANCE A 2" OD SAMPLER A DISTANCE OF 12 INCHES USING A 140 POUND WEIGHT FALLING 30 INCHES

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: jhb/mh 8/12

Sheet: 1 of 1 PLATE: 3F

MELICK-TULLY AND ASSOCIATES, P.C.
Geotechnical Engineers and Environmental Consultants

LOG OF BORING

BORING NO. 7

COMPLETION DATE: 8/6/12
JOB NUMBER: 8979-002*1D

SURFACE ELEVATION: +1,344 ft (±)

WATER LEVEL: 4'
READING DATE: 8/6/12

DEPTH (ft.)	SAMPLES	N-VALUE	MOISTURE CONTENT (%)	SYMBOL	DESCRIPTION	DEPTH (ft.)
					5" Topsoil	
	S1	14	37.1		Red-brown fine sand, and clayey silt, with occasional silt layers (moist to wet)(medium dense)	
	S2	14	24.8		- organic matter = 12.5% @ 0.3'	
5	S3	11				5
	S4	15		SM		
	S5	9				
10	S6	21				10
					Red-brown fine to coarse sand, some silt, some fine to coarse gravel, occasional cobbles (wet)(medium dense)	
15	S7	21		SM		15
20	S8	65				20
					Boring completed @ 22'	
					Motting observed @ 2'	
					Groundwater encountered @ 4'	
25						25

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH
2. INDICATES THE NUMBER OF BLOWS TO ADVANCE A 2" OD SAMPLER A DISTANCE OF 12 INCHES USING A 140 POUND WEIGHT FALLING 30 INCHES

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: jhb/mh 8/12

Sheet: 1 of 1 PLATE: 3G

MELICK-TULLY AND ASSOCIATES, P.C.
Geotechnical Engineers and Environmental Consultants

LOG OF TEST PIT

TEST PIT NO: 1

COMPLETION DATE: 7/31/12
JOB NUMBER: 8979-002*1D

SURFACE ELEVATION: +1,338 ft (±)

WATER LEVEL: 6'
READING DATE: 7/31/12

DEPTH	SAMPLES (1)	MOISTURE CONTENT (%)	SYMBOL	DESCRIPTION	DEPTH
	S1	154.1		6" Topsoil - Organic root mat, with fine to medium sand, trace silt - organic matter = 34.1%, bulk density = 116.4 pcf 0"-8"	
	S2	23.6			
	S3	79.2		FILL - Brown fine to medium sand, and silt - organic matter = 5.6%, bulk density = 101.4 pcf 8"-16"	
	S4	249.6	PT	FILL - Gray-brown topsoil and wood, intermixed with fine to coarse sand, some silt, trace fine gravel - organic matter = 7.6%, bulk density = 63.5 pcf 16"-24"	
				Black peat, with fine to medium sand layers, little organic silt - organic matter = 37.5%	
5				Red-brown fine to coarse sand, and silt, some fine to coarse gravel, occasional cobbles and boulders (moist)(very dense)	5
	S5		SM		
	S6				
10				Test pit completed @ 8'-6" Mottling observed @ 4' Slight groundwater seepage encountered @ 6'	10
15					15

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: jhb/mh 8/12

Sheet: 1 of 1 PLATE: 4A

MELICK-TULLY AND ASSOCIATES, P.C.
Geotechnical Engineers and Environmental Consultants

LOG OF TEST PIT

TEST PIT NO: 2

COMPLETION DATE: 7/31/12 | SURFACE ELEVATION: +1,341 ft (±) | WATER LEVEL: 5'

JOB NUMBER: 8979-002*1D | READING DATE: 7/31/12

DEPTH	SAMPLES (1)	MOISTURE CONTENT (%)	SYMBOL	DESCRIPTION	DEPTH
	S1	46.1		6" Topsoil - fine to coarse sand, some silt, trace fine gravel - organic matter = 12.1%, bulk density = 99.4 pcf 0"-8"	
	S2	27.3			
	S3	23.7	SM	FILL - Gray fine to medium sand, and silt, trace fine gravel little roots - organic matter = 3.1%, bulk density = 102.6 pcf 8"-16"	
				Light brown fine to medium sand, and silt (wet)(medium dense) - organic matter = 1.7%, bulk density = 114.3 pcf 16"-24"	
				Red-brown fine to coarse sand, and silt, some fine to coarse gravel, occasional cobbles (moist to wet)(dense)	
5	S4		SM		5
	S5				
10				Test pit completed @ 8'-0" Rapid groundwater seepage encountered @ 5'	10
15					15

NOTES FOR COLUMNS:

1. SAMPLE AT AVERAGE SAMPLING DEPTH

SOIL DESCRIPTION MODIFIERS:

TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: jhb/mh 8/12

Sheet: 1 of 1 PLATE: 4B

MELICK-TULLY AND ASSOCIATES, P.C.
Geotechnical Engineers and Environmental Consultants

LOG OF TEST PIT

TEST PIT NO: 3

COMPLETION DATE: 7/31/12 | SURFACE ELEVATION: +1,341 ft (±) | WATER LEVEL: 4'-6"

JOB NUMBER: 8979-002*1D | READING DATE: 7/31/12

DEPTH	SAMPLES (1)	MOISTURE CONTENT (%)	SYMBOL	DESCRIPTION	DEPTH
	S1	21.4		6" Topsoil - fine to medium sand, some silt - organic matter = 5.0%, bulk density = 107.5 pcf 0"-8"	
	S2	18.9			
	S3	14.0		FILL - Gray fine to medium sand, and silt, trace roots - organic matter = 2.8%, bulk density = 113.2 pcf 8"-16"	
			ML	FILL - Gray clayey silt, intermixed with topsoil - organic matter = 6.9%, bulk density = 135.4 pcf 16"-24"	
				Gray clayey silt, some fine to medium sand (moist)(very stiff)	
	S4		SM	Red-brown fine to coarse sand, and silt, some fine to coarse gravel (moist)(very dense)	
5				Red-brown fine to coarse sand, some silt, little fine to coarse gravel (wet)(very dense)	5
	S5		SM		
10				Test pit completed @ 8' Mottling observed @ 18" Moderate groundwater seepage encountered @ 4'-6"	10
15					15

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: jhb/mh 8/12

Sheet: 1 of 1 PLATE: 4C

MELICK-TULLY AND ASSOCIATES, P.C.
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LOG OF TEST PIT

TEST PIT NO: 4

COMPLETION DATE: 7/31/12
JOB NUMBER: 8979-002*1D

SURFACE ELEVATION: +1,340 ft (±)

WATER LEVEL: 6'-0"
READING DATE: 7/31/12

DEPTH	SAMPLES (1)	MOISTURE CONTENT (%)	SYMBOL	DESCRIPTION	DEPTH
	S1	11.3		4" Topsoil - fine to medium sand, some silt, trace fine gravel - organic matter = 11.1%, bulk density = 128.1 pcf 0"-8"	
	S2 S3	13.0		FILL - Red-brown fine to coarse sand, and silt, little fine gravel - organic matter = 1.5%, bulk density = 119.8 pcf 8"-16"	
	S4				
	S5		SM	Light brown fine to medium sand, and silt (wet)(medium dense)	
5	S6	228.8	PT	Black organic fibrous peat, with fine to coarse sand, little silt (moist)(soft) - organic matter = 57.1%	5
	S7		ML	Gray clayey silt, some fine to medium sand (moist)(very stiff)	
	S8		ML	Red-brown silt, some fine to medium sand, trace fine to coarse gravel (wet)(very stiff)	
10				Test pit completed @ 8'-6" Slight groundwater seepage encountered @ 6'-0"	10
15					15

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: jhb/mh 8/12

Sheet: 1 of 1 PLATE: 4D

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LOG OF TEST PIT

TEST PIT NO: 5

COMPLETION DATE: 8/2/12
JOB NUMBER: 8979-002*1D

SURFACE ELEVATION: +1,340 ft (±)

WATER LEVEL: 3'-0"
READING DATE: 8/2/12

DEPTH	SAMPLES (1)	MOISTURE CONTENT (%)	SYMBOL	DESCRIPTION	DEPTH
	S1	22.9		12" Topsoil - fine to medium sand, some silt, trace fine gravel - organic matter = 4.4%, bulk density = 100.7 pcf 0"-8"	
	S2	34.6		FILL - Black fine to coarse sand, and silt, little fine gravel, intermixed with topsoil pockets - organic matter = 20.7%, bulk density = 93.3 pcf 8"-16", bulk density = 88.0 pcf 16"-24"	
	S3	88.1			
				FILL - Black fine to medium sand, topsoil, roots and stumps	
5					5
	S4				
10				Test pit completed @ 10'-0"	10
				Rapid groundwater seepage encountered @ 3'-0"	
15					15

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: jhb/mh 8/12

Sheet: 1 of 1 PLATE: 4E

MELICK-TULLY AND ASSOCIATES, P.C.
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LOG OF TEST PIT

TEST PIT NO: 6

COMPLETION DATE: 8/2/12
JOB NUMBER: 8979-002*1D

SURFACE ELEVATION: +1,340 ft (±)

WATER LEVEL: 4'-0"
READING DATE: 8/2/12

DEPTH	SAMPLES (1)	MOISTURE CONTENT (%)	SYMBOL	DESCRIPTION	DEPTH
	S1	29.6		8" Topsoil - fine to medium sand, and silt, trace fine gravel - organic matter = 11.9%, bulk density = 115.2 pcf 0"-8"	
	S2	15.2		FILL - Red-brown silt, and fine to medium sand, trace fine gravel - organic matter = 1.0%, bulk density = 108.8 pcf 8"-16"	
	S3	18.3		FILL - Gray-brown fine to medium sand, and silt, little fine gravel, trace roots - organic matter = 2.1%, bulk density = 125.5 pcf 16"-24"	
	S4	21.0		Red-brown fine to medium sand, and silt, trace fine gravel (wet)(medium dense to dense), bulk density = 142.3 pcf 48"-58"	
5			SM		5
	S5				
10				Test pit completed @ 10'-0" Mottling observed @ 3'-6" Slight groundwater seepage encountered @ 4'-0" Modified double ring infiltrometer test performed at a depth of 1'-0". Measured infiltration rate = 0.25 in/hr	10
15					15

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: jhb/mh 8/12

Sheet: 1 of 1 PLATE: 4F

MELICK-TULLY AND ASSOCIATES, P.C.
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LOG OF TEST PIT

TEST PIT NO: 7

COMPLETION DATE: 8/2/12
JOB NUMBER: 8979-002*1D

SURFACE ELEVATION: +1,340 ft (±)

WATER LEVEL: 3'-6"
READING DATE: 8/2/12

DEPTH	SAMPLES (1)	MOISTURE CONTENT (%)	SYMBOL	DESCRIPTION	DEPTH
	S1	46.5		7" Topsoil - fine to medium sand, some silt, trace fine gravel - organic matter = 13.7%, bulk density = 96.8 pcf 0"-8"	
	S2	16.0		FILL - Brown fine to coarse sand, some silt, little fine gravel, trace roots - organic matter = 5.3%, bulk density = 136.1 pcf 8"-16"	
	S3	20.9	ML	Red-brown silt, some fine sand, trace fine gravel (wet)(stiff) - organic matter = 0.5%, bulk density = 127.4 pcf 16"-24"	
	S4				
5			SM	Red-brown fine to medium sand, and silt, trace fine gravel (moist to wet)(medium dense to dense)	5
	S5				
	S6				
10				Test pit completed @ 10'-0" Mottling observed @ 1'-6" Moderate groundwater seepage encountered @3'-6" Modified double ring infiltrometer test performed @ a depth of 16" Measured infiltration rate = 0.5 in/hr	10
15					15

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: jhb/mh 8/12

Sheet: 1 of 1 PLATE: 4G

MELICK-TULLY AND ASSOCIATES, P.C.
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LOG OF TEST PIT

TEST PIT NO: 8

COMPLETION DATE: 8/1/12
JOB NUMBER: 8979-002*1D

SURFACE ELEVATION: +1,339 ft (±)

WATER LEVEL: 3'-6"
READING DATE: 8/1/12

DEPTH	SAMPLES (1)	MOISTURE CONTENT (%)	SYMBOL	DESCRIPTION	DEPTH
	S1	28.8		18" Topsoil - fine to medium sand, some silt - organic matter = 7.1%, bulk density = 105.3 pcf 0"-8"	
	S2	109.1	PT	Black organic peat, with fine to medium sand, and silt - organic matter = 20.1%, bulk density = 103.8 pcf 16"-24"	
	S3		SM	Gray-brown fine to coarse sand, some silt, trace fine gravel (wet)(medium dense)	
	S4				
5					5
	S5		SM	Red-brown fine sand, and silt (wet)(medium dense)	
10				Test pit completed @ 7'-6" Rapid groundwater seepage encountered @ 3'-6"	10
15					15

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: jhb/mh 8/12

Sheet: 1 of 1 PLATE: 4H

MELICK-TULLY AND ASSOCIATES, P.C.
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LOG OF TEST PIT

TEST PIT NO: 9

COMPLETION DATE: 8/1/12
JOB NUMBER: 8979-002*1D

SURFACE ELEVATION: +1,339 ft (±)

WATER LEVEL: 4'
READING DATE: 8/1/12

DEPTH	SAMPLES (1)	MOISTURE CONTENT (%)	SYMBOL	DESCRIPTION	DEPTH
	S1	41.4		5" Topsoil - fine to medium sand, and silt	
	S2	38.7		- organic matter = 10.8%, bulk density = 110.5 pcf 0"-8"	
	S3	26.1	ML	Gray silt, and fine to medium sand, trace roots (moist)(stiff) - organic matter = 2.9%, bulk density = 119.5 pcf 8"-16", bulk density = 108.7 pcf 16"-24"	
	S4				
	S5		SM	Gray-brown fine to medium sand, some silt, little fine gravel (wet)(medium dense)	
5	S6				5
	S7				
10				Test pit completed @ 10'	10
				Rapid groundwater seepage encountered @ 4'	
15					15

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: jhb/mh 8/12

Sheet: 1 of 1 PLATE: 4l

MELICK-TULLY AND ASSOCIATES, P.C.
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LOG OF TEST PIT

TEST PIT NO: 10

COMPLETION DATE: 8/1/12
JOB NUMBER: 8979-002*1D

SURFACE ELEVATION: +1,337 ft (±)

WATER LEVEL: 5'
READING DATE: 8/1/12

DEPTH	SAMPLES (1)	MOISTURE CONTENT (%)	SYMBOL	DESCRIPTION	DEPTH
	S1	10.8		4" Topsoil - fine to coarse sand, little silt, little fine gravel - organic matter = 1.8%, bulk density = 128.4 pcf 0"-8"	
	S2	27.4		FILL - Red-brown fine to coarse sand, little silt, some fine gravel	
	S3	27.2		- organic matter = 1.5%, bulk density = 115.6 pcf 8"-16"	
	S4		SM	Gray fine to coarse sand, and silt, trace fine gravel (moist)(medium dense), bulk density = 108.2 pcf 16"-24"	
	S5				
5	S6	10.0	OL	Black silt, and fine to medium sand, trace peat fragments (wet)(medium) - organic matter = 4.9%	5
	S7		SP/SM	Gray-brown fine to coarse sand, little silt, trace fine gravel (wet)(medium dense)	
	S8		SM	Red-brown fine sand, and silt (wet)(dense)	
10				Test pit completed @ 10'	10
				Mottling observed @ 1'-6"	
				Rapid groundwater seepage encountered @ 5'	
15					15

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: jhb/mh 8/12

Sheet: 1 of 1 PLATE: 4J

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LOG OF TEST PIT

TEST PIT NO: 11

COMPLETION DATE: 8/1/12
JOB NUMBER: 8979-002*1D

SURFACE ELEVATION: +1,338 ft (±)

WATER LEVEL: 5'
READING DATE: 8/1/12

DEPTH	SAMPLES (1)	MOISTURE CONTENT (%)	SYMBOL	DESCRIPTION	DEPTH
	S1	23.8		FILL - Brown fine to medium sand, and silt, trace fine gravel, intermixed with topsoil	
	S2	138.5		- organic matter = 6.4%, bulk density = 109.0 pcf 0"-8"	
	S3	55.0	SM	FILL - Brown fine to coarse sand, and silt, intermixed with topsoil - organic matter = 35.3%, bulk density = 72.3 pcf 8"-16"	
	S4		ML	Gray fine to medium sand, some silt (moist)(medium dense) - organic matter = 3.5%, bulk density = 99.0 pcf 16"-24"	
				Gray clayey silt, some fine to medium sand (moist)(stiff)	
	S5	457.1	PT	Organic peat, with gray fine to medium sand, and silt seams (wet)(loose) - organic matter = 75.4%	
5					5
	S6		ML	Red-brown clayey silt (wet)(medium dense)	
10				Test pit completed @ 8'-6" Groundwater seepage encountered @ 5'	10
15					15

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: jhb/mh 8/12

Sheet: 1 of 1 PLATE: 4K

MELICK-TULLY AND ASSOCIATES, P.C.
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LOG OF TEST PIT

TEST PIT NO: 12

COMPLETION DATE: 8/1/12
JOB NUMBER: 8979-002*1D

SURFACE ELEVATION: +1,338 ft (±)

WATER LEVEL: 2'
READING DATE: 8/1/12

DEPTH	SAMPLES (1)	MOISTURE CONTENT (%)	SYMBOL	DESCRIPTION	DEPTH
	S1			11" Topsoil	
	S2	17.6	ML	Gray clayey silt, little fine sand (moist)(very stiff) - bulk density = 125.4 pcf 8"-12" - bulk density = 125.0 pcf 12" to 24"	
	S3	18.2	SM	Gray fine to coarse sand, little silt, little fine to coarse gravel (moist to wet)(medium dense)	
5			SM	Red-brown fine to medium sand, and silt (wet)(dense)	5
	S4				
10				Test pit completed @ 10' Mottling observed @ 1' Moderate groundwater seepage encountered @ 2'	10
15					15

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: jhb/mh 8/12

Sheet: 1 of 1 PLATE: 4L

MELICK-TULLY AND ASSOCIATES, P.C.
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LOG OF TEST PIT

TEST PIT NO: 13

COMPLETION DATE: 8/1/12
JOB NUMBER: 8979-002*1D

SURFACE ELEVATION: +1,338 ft (±)

WATER LEVEL: 2'
READING DATE: 8/1/12

DEPTH	SAMPLES (1)	MOISTURE CONTENT (%)	SYMBOL	DESCRIPTION	DEPTH
	S1	55.0		24" Topsoil - fine to medium sand, and silt - organic matter = 11.4% @ 6", bulk density = 89.3 pcf 0"-8" - organic matter = 7.5% @ 12", bulk density = 82.2 pcf 8"-16" - organic matter = 0.6% bulk density = 83.7 pcf 16"-24"	
	S2	52.2			
	S3	25.0		FILL - Brown fine to medium sand, trace silt	
	S4		SM	Gray-brown fine to coarse sand, little silt (wet)(medium dense)	
5			SM	Red-brown fine to medium sand, and silt (wet)(medium dense)	5
	S5				
10				Test pit completed @ 9'-6" Rapid groundwater seepage encountered @ 2'-0"	10
15					15

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: jhb/mh 8/12

Sheet: 1 of 1 PLATE: 4M

MELICK-TULLY AND ASSOCIATES, P.C.
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LOG OF TEST PIT

TEST PIT NO: 14

COMPLETION DATE: 7/31/12 | SURFACE ELEVATION: +1,349 ft (±) | WATER LEVEL: *

JOB NUMBER: 8979-002*1D | READING DATE: 7/31/12

DEPTH	SAMPLES (1)	MOISTURE CONTENT (%)	SYMBOL	DESCRIPTION	DEPTH
	S1	16.8		5" Topsoil - fine to medium sand, some silt, trace fine gravel	
	S2	9.1		- organic matter = 5.1%, bulk density = 83.3 pcf 0"-8"	
			SM	Gray fine to medium sand, some silt, trace fine gravel (moist)(loose)	
	S3	14.1		- organic matter = 6.1% 8"-16"	
	S4			- organic matter = 4.1%, bulk density = 117.2 pcf 16"-24"	
			SM	Yellow-brown fine to coarse sand, some silt (moist)(medium dense)	
				Brown fine to coarse sand, some silt, little fine to coarse gravel, occasional cobbles and boulders (moist)(medium dense to dense)	
5			SM		5
	S5				
				- backhoe refusal encountered atop boulders @ 7'	
				Test pit completed @ 7'-0"	
				Mottling observed @ 4'-6"	
				*Groundwater not encountered	
				Modified double ring infiltrometer	
				test peformed @ 2'-0"	
				Measured infiltration rate = 12 in/hr	
10					10
15					15

NOTES FOR COLUMNS:

1. SAMPLE AT AVERAGE SAMPLING DEPTH

SOIL DESCRIPTION MODIFIERS:

TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: jhb/mh 8/12

Sheet: 1 of 1 PLATE: 4N

MELICK-TULLY AND ASSOCIATES, P.C.
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LOG OF TEST PIT

TEST PIT NO: 15

COMPLETION DATE: 7/31/12 | SURFACE ELEVATION: +1,339 ft (±) | WATER LEVEL: 5'

JOB NUMBER: 8979-002*1D | READING DATE: 7/31/12

DEPTH	SAMPLES (1)	MOISTURE CONTENT (%)	SYMBOL	DESCRIPTION	DEPTH
	S1 S2	13.3 10.2		7" Topsoil - fine to coarse sand, some silt, little fine gravel - organic matter = 4.3%, bulk density = 140.2 pcf 0"-8"	
	S3	8.1	SM	Brown fine to medium sand, and silt (moist)(medium dense) - organic matter = 1.4%, bulk density = 154.4 pcf 8"-16"	
	S4		SM	Brown fine to coarse sand, little silt, little fine to coarse gravel (moist)(very dense)	
5	S5		SM	Red-brown fine to coarse sand, some silt, some fine to coarse gravel, occasional cobbles and boulders (wet)(very dense) - backhoe refusal atop boulders encountered @ 7'	5
10				Test pit completed @ 7'-0" Mottling observed @ 1' Groundwater seepage encountered @ 5'	10
15					15

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: jhb/mh 8/12

Sheet: 1 of 1 PLATE: 4O

MELICK-TULLY AND ASSOCIATES, P.C.
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MAJOR DIVISIONS			LETTER SYMBOL	TYPICAL DESCRIPTIONS
COARSE GRAINED SOILS More than 50% of material is LARGER than No. 200 Sieve	GRAVEL & GRAVELLY SOILS More than 50% of coarse fraction RETAINED on No. 4 Sieve	CLEAN GRAVELS (Little or no fines)	GW	Well-graded gravels, gravel-sand mixtures, little or no fines.
			GP	Poorly-graded gravels, gravel-sand mixtures, little or no fines
		GRAVELS WITH FINES (Appreciable amount of fines)	GM	Silty gravels, gravel-sand-silt mixtures.
			GC	Clayey gravels, gravel-sand-clay mixtures.
	SAND AND SANDY SOILS More than 50% of coarse fraction PASSING a No. 4 Sieve	CLEAN SAND (Little or no fines)	SW	Well-graded sands, gravelly sands, little or no fines.
			SP	Poorly-graded sands, gravelly sands, little or no fines.
		SANDS WITH FINES (Appreciable amount of fines)	SM	Silty sands, sand-silt mixtures
			SC	Clayey sands, sand-clay mixtures.
FINE GRAINED SOILS More than 50% of material is SMALLER than No. 200 Sieve.	SILTS AND CLAYS	Liquid limit LESS than 50	ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity.
			CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays.
			OL	Organic silts and organic silty clays of low plasticity.
	SILTS AND CLAYS	Liquid limit GREATER than 50	MH	Inorganic silts, micaceous or diatomaceous fine sand or silty soils.
			CH	Inorganic clays of high plasticity, fat clays.
			OH	Organic clays of medium to high plasticity, organic silts.
HIGHLY ORGANIC SOILS			PT	Peat, humus, swamp soils with high organic contents

NOTE: DUAL SYMBOLS ARE USED TO INDICATE BORDERLINE SOIL CLASSIFICATIONS.

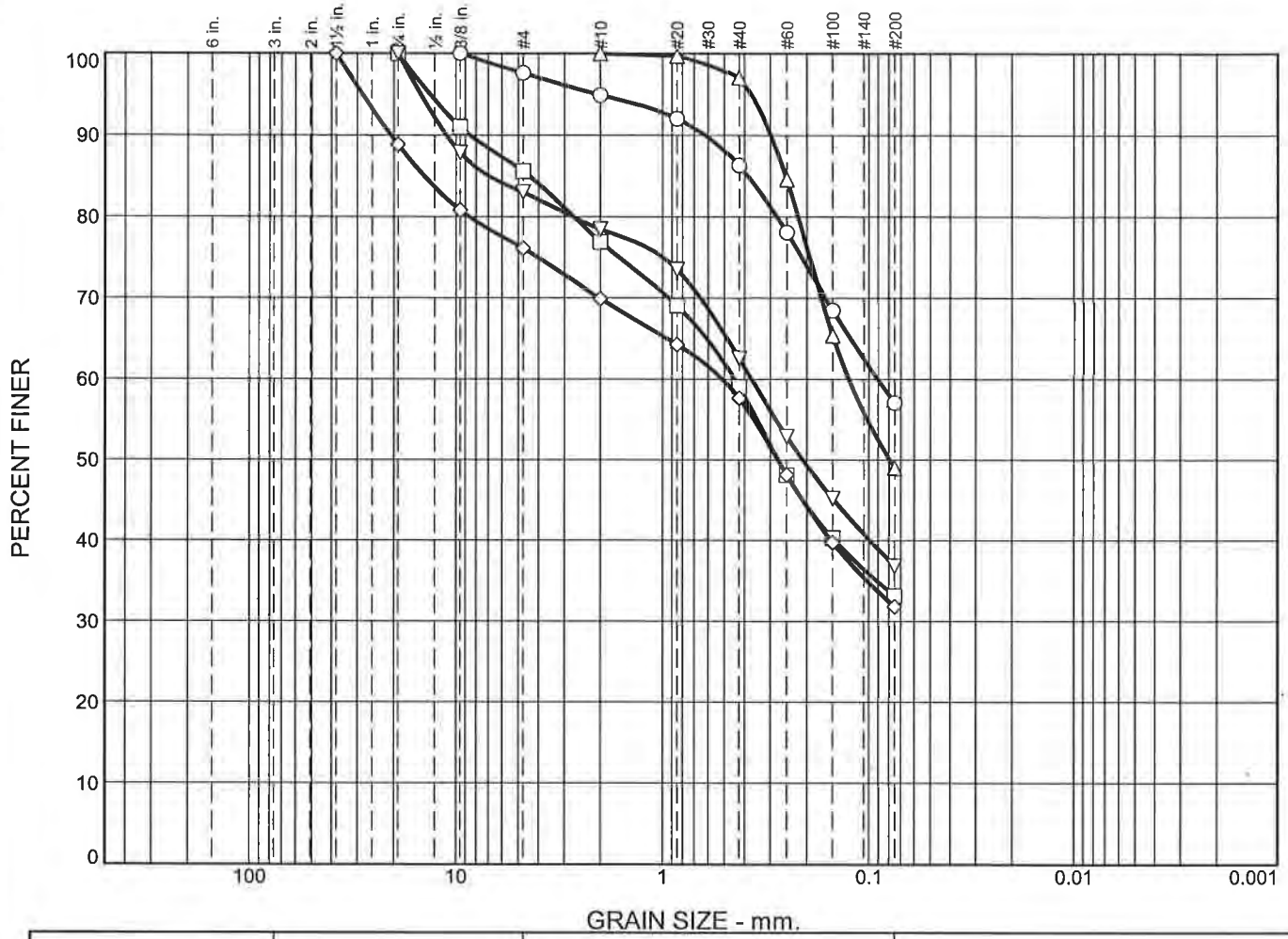
GRADATION*		COMPACTNESS* sand and/or gravel		CONSISTENCY* clay and/or silt	
% Finer by Weight		Relative Density		Range of Shearing Strength in Pounds per Square Foot	
Trace	0% to 10%	Loose	0% to 40%	Very Soft	less than 250
Little	10% to 20%	Medium Dense	40% to 70%	Soft	250 to 500
Some	20% to 35%	Dense	70% to 90%	Medium	500 to 1000
And	35% to 50%	Very Dense	90% to 100%	Stiff	1000 to 2000
				Very Stiff	2000 to 4000
				Hard	Greater than 4000

**Values are from laboratory or field test data, where applicable. When no testing was performed, values are estimated.*

UNIFIED SOIL CLASSIFICATION SYSTEM

SOIL CLASSIFICATION CHART

Gradation Curve(s)



	% Cobbles	% Gravel		% Sand			% Fines
		Coarse	Fine	Coarse	Medium	Fine	
○	0.0	0.0	2.4	2.7	8.6	29.2	57.1
□	0.0	0.0	14.4	8.7	17.9	25.9	33.1
△	0.0	0.0	0.0	0.0	3.0	48.0	49.0
◇	0.0	11.2	12.7	6.2	12.3	25.8	31.8
▽	0.0	0.0	17.0	4.6	15.9	25.7	36.8

SOIL DATA

SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	Material Description	USCS
○	B-1	S-1	0-2	Silt, and fine to medium Sand, trace fine Gravel. (MC=21.8%)	ML
□	B-1	S-2	2-4	Fine to coarse Sand, some Silt, little fine Gravel. (MC=10.3%)	Fill
△	B-2	S-2	2-4	Fine Sand, and Silt. (MC=23.0%)	Fill
◇	B-3	S-1	0-2	Fine to coarse Sand, some Silt, some f-c Gravel. (MC=16.0%)	SM
▽	B-4	S-1	0-2	Fine to coarse Sand, and Silt, little fine Gravel. (MC=10.1%)	Fill

Melick-Tully & Associates, P.C.

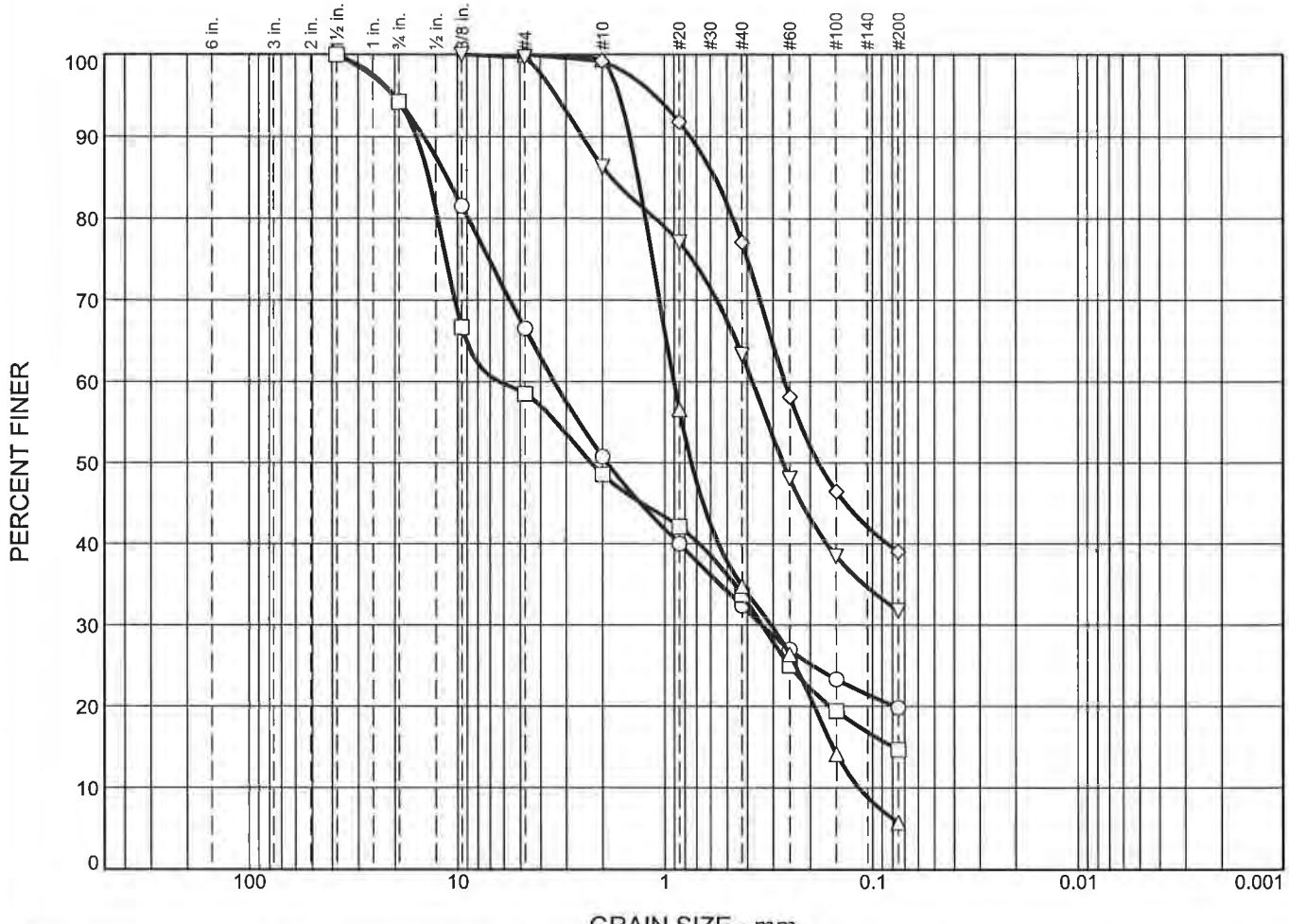
South Bound Brook, NJ

Client: Concord Resort Development

Project: Concord Resort Development, Thompson, NY

Project No.: 8979-002 **Plate** 6A

Gradation Curve(s)



	% Cobbles	% Gravel		% Sand			% Fines
		Coarse	Fine	Coarse	Medium	Fine	
○	0.0	5.7	27.8	15.8	18.4	12.5	19.8
□	0.0	5.8	35.7	10.0	14.8	19.1	14.6
△	0.0	0.0	0.0	0.6	64.6	29.1	5.7
◇	0.0	0.0	0.0	0.8	22.1	38.1	39.0
▽	0.0	0.0	0.3	13.4	23.0	31.5	31.8

SOIL DATA

SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	Material Description	USCS
○	B-4	S-2	2-4	Fine to coarse Sand, some f-c Gravel, little Silt. (MC=17.0%)	SM
□	B-6	S-1	0-2	Fine to coarse Sand, and f-c Gravel, little Silt. (MC=9.2%)	Fill
△	TP-1	S-1	0.3	Topsoil/Fine to medium Sand, trace Silt. (MC=154.1%)	SP-SM
◇	TP-1	S-2	1.1	Fine to medium Sand, and Silt. (MC=23.6%)	Fill
▽	TP-1	S-3	1.7	Fine to coarse Sand, some Silt, trace fine Gravel. (MC=38.3%)	Fill

Melick-Tully & Associates, P.C.

South Bound Brook, NJ

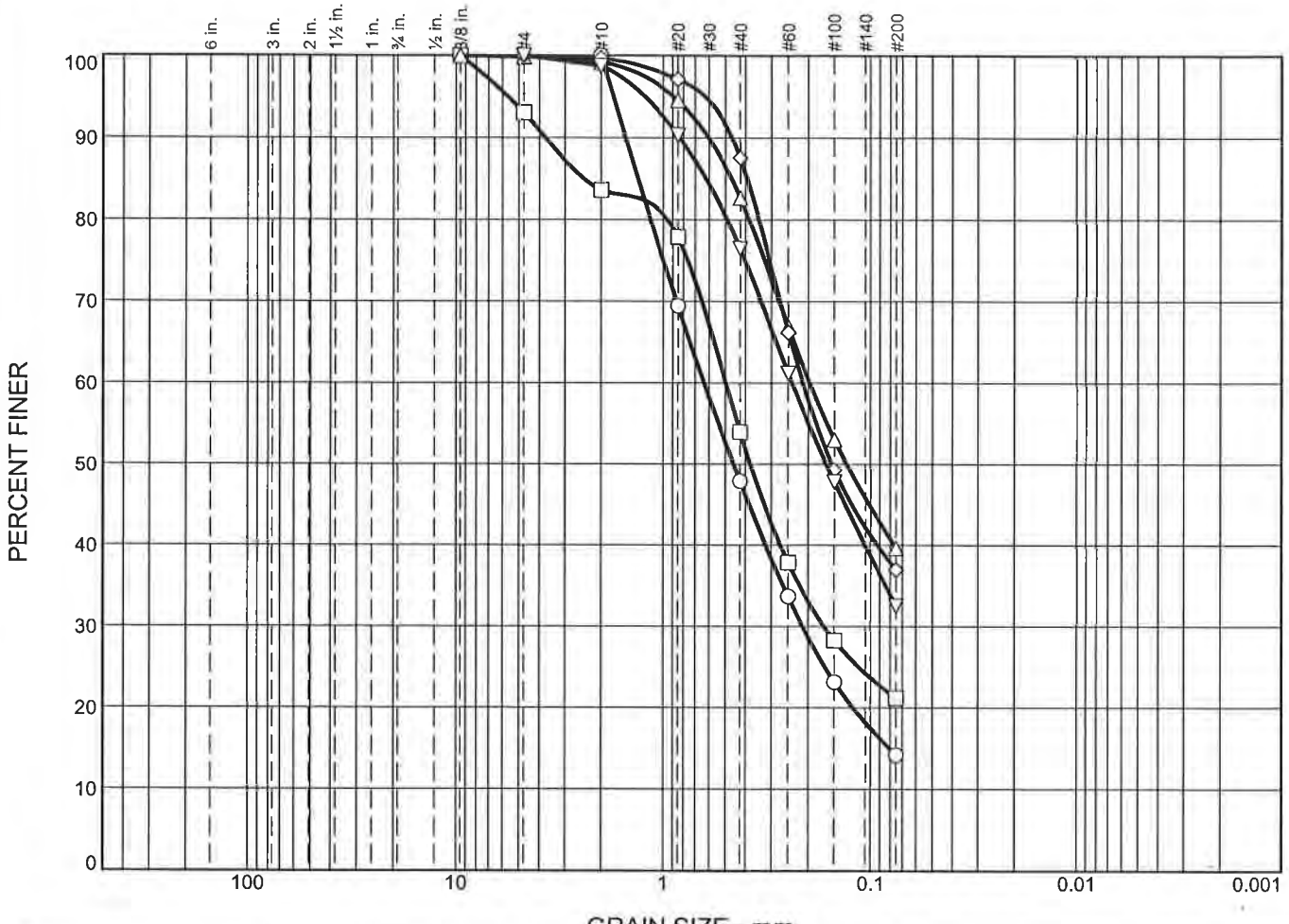
Client: Concord Resort Development

Project: Concord Resort Development, Thompson, NY

Project No.: 8979-002

Plate 6B

Gradation Curve(s)



	% Cobbles	% Gravel		% Sand			% Fines
		Coarse	Fine	Coarse	Medium	Fine	
○	0.0	0.0	0.0	0.0	52.1	33.7	14.2
□	0.0	0.0	7.0	9.4	29.7	32.7	21.2
△	0.0	0.0	0.2	0.6	16.5	43.0	39.7
◇	0.0	0.0	0.0	0.3	12.2	50.6	36.9
▽	0.0	0.0	0.0	1.3	22.2	44.0	32.5

SOIL DATA

SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	Material Description	USCS
○	TP-1	S-4	3	Peat with fine to medium Sand, little Silt. (MC=249.6%)	PT/SM
□	TP-2	S-1	0.3	Fine to coarse Sand, some Silt, trace fine Gravel. (MC=46.1%)	Fill
△	TP-2	S-2	0.7	Fine to medium Sand, and Silt, trace fine Gravel. (MC=18.5%)	Fill
◇	TP-2	S-3	1.6	Fine to medium Sand, and Silt. (MC=23.7%)	SM
▽	TP-3	S-1	0.25	Fine to medium Sand, some Silt. (MC=21.4%)	Fill

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South Bound Brook, NJ

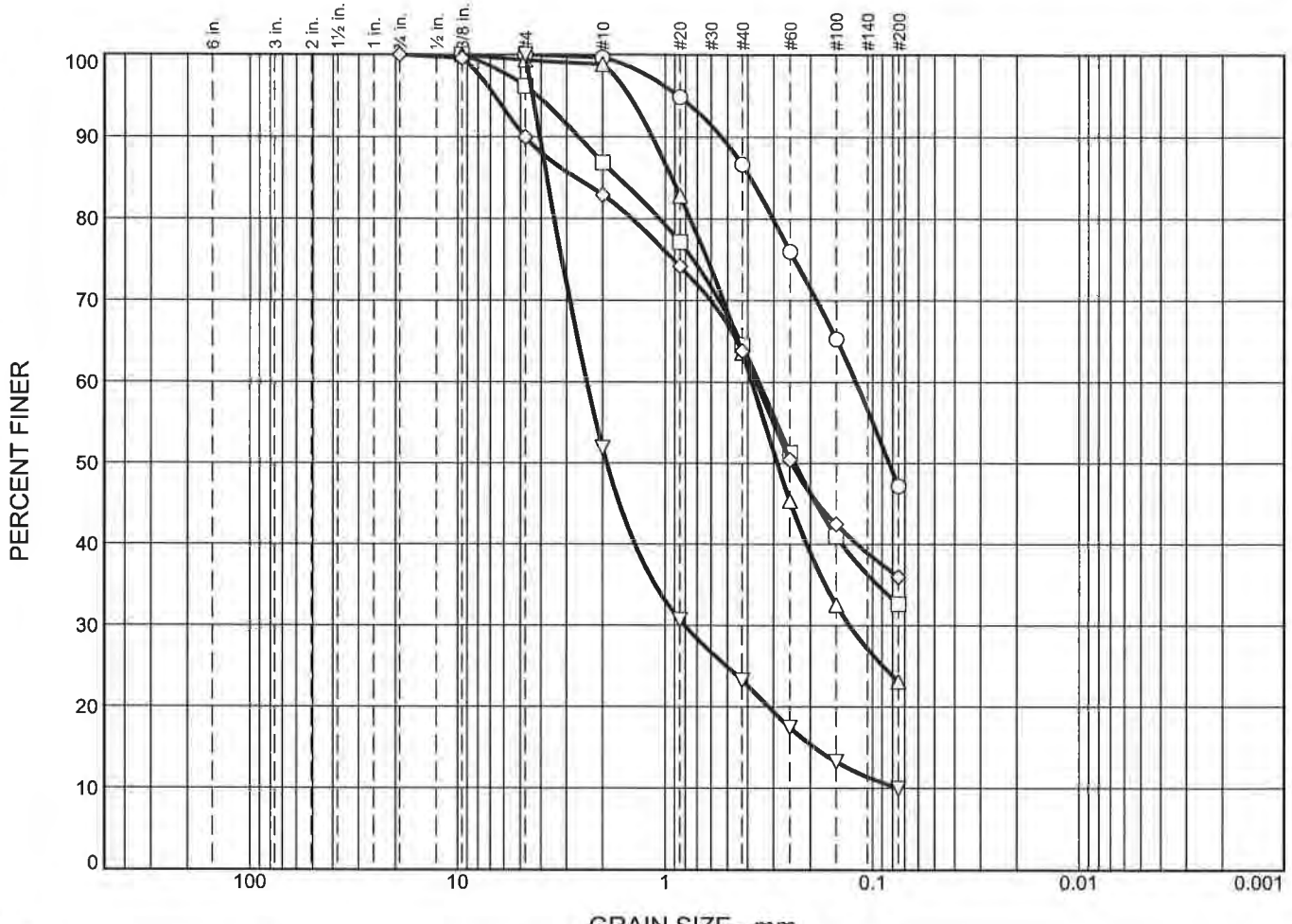
Client: Concord Resort Development

Project: Concord Resort Development, Thompson, NY

Project No.: 8979-002

Plate 6C

Gradation Curve(s)



	% Cobbles	% Gravel		% Sand			% Fines
		Coarse	Fine	Coarse	Medium	Fine	
○	0.0	0.0	0.0	0.4	13.0	39.4	47.2
□	0.0	0.0	3.8	9.3	22.4	31.9	32.6
△	0.0	0.0	0.7	0.5	35.3	40.4	23.1
◇	0.0	0.0	10.0	7.1	19.1	27.8	36.0
▽	0.0	0.0	0.0	48.1	28.7	13.2	10.0

SOIL DATA

SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	Material Description	USCS
○	TP-3	S-2	0.7	Fine to medium Sand, and Silt. (MC=18.9%)	Fill
□	TP-3	S-3	1.3	Fine to coarse Sand, some Silt, trace fine Gravel. (MC=27.4%)	Fill
△	TP-4	S-1	0.2	Fine to medium Sand, some Silt, trace fine Gravel. (MC=43.4%)	Fill
◇	TP-4	S-3	1.3	Fine to coarse Sand, and Silt, little fine Gravel. (MC=13.0%)	Fill
▽	TP-4	S-6	5	Peat/Fine to coarse Sand, little Silt. (MC=228.8%)	SP-SM/PT

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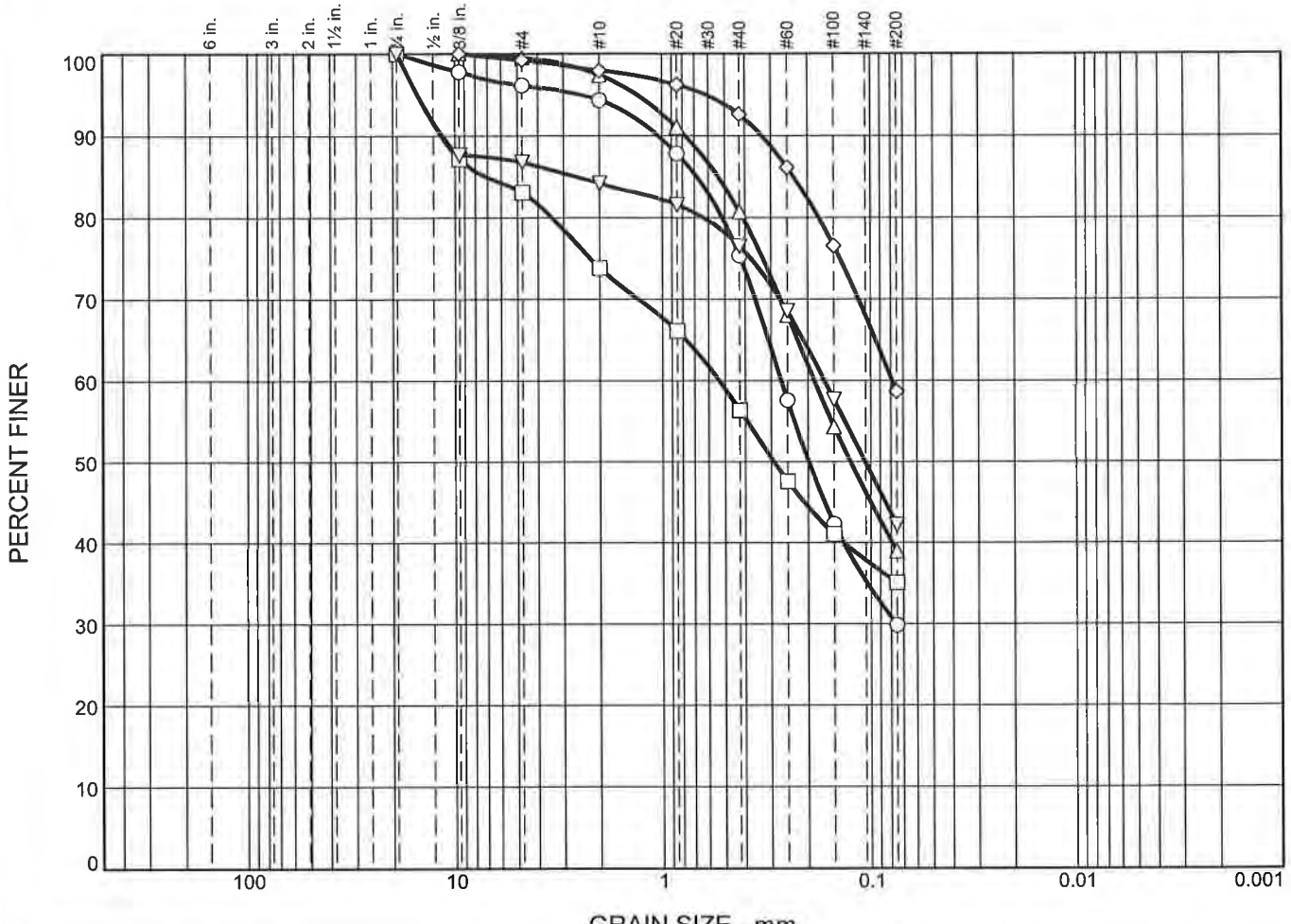
Plate 6D

Gradation Curve(s)



	% Cobbles	% Gravel		% Sand			% Fines
		Coarse	Fine	Coarse	Medium	Fine	
○	0.0	0.0	3.9	1.8	19.0	45.5	29.8
□	0.0	0.0	16.9	9.3	17.5	21.2	35.1
△	0.0	0.0	0.5	2.1	16.7	41.7	39.0
◇	0.0	0.0	0.8	1.3	5.3	33.9	58.7
▽	0.0	0.0	13.2	2.6	7.7	34.3	42.2

SOIL DATA

SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	Material Description	USCS
○	TP-5	S-1	0.3	Fine to medium Sand, some Silt, trace fine Gravel. (MC=22.9%)	SM
□	TP-5	S-3	2	Fine to coarse Sand, and Silt, little fine Gravel. (MC=88.1%)	SM
△	TP-6	S-1	0.3	Topsoil/F-m Sand, and Silt, trace fine Gravel. (MC=29.6%)	SM
◇	TP-6	S-2	0.7	Silt, and fine to medium Sand, trace fine Gravel. (MC=15.2%)	ML
▽	TP-6	S-3	1.5	Fine to medium Sand, and Silt, little fine Gravel. (MC=18.3%)	SM

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Gradation Curve(s)

	% Cobbles	% Gravel		% Sand			% Fines
		Coarse	Fine	Coarse	Medium	Fine	
○	0.0	0.0	3.7	1.4	21.6	48.9	24.4
□	0.0	0.0	14.5	9.1	15.6	38.4	22.4
△	0.0	0.0	0.2	0.2	1.2	24.7	73.7
◇	0.0	0.0	0.0	0.3	26.4	42.8	30.5
▽	0.0	0.0	0.0	0.9	25.9	36.4	36.8

SOIL DATA

SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	Material Description	USCS
○	TP-7	S-1	0.3	Fine to medium Sand, some Silt, trace fine Gravel. (MC=46.5%)	Fill
□	TP-7	S-2	0.67	Fine to coarse Sand, some Silt, little fine Gravel. (MC=27.6%)	Fill
△	TP-7	S-3	1.7	Silt, some fine Sand, trace fine Gravel. (MC=20.9%)	ML
◇	TP-8	S-1	0.5	Fine to medium Sand, some Silt. (MC=28.8%)	Fill
▽	TP-8	S-2	1.5	Peat with fine to medium Sand, and Silt. (MC=109.1%)	SM/PT

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South Bound Brook, NJ

Client: Concord Resort Development

Project: Concord Resort Development, Thompson, NY

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Plate 6F

Gradation Curve(s)

	% Cobbles	% Gravel		% Sand			% Fines
		Coarse	Fine	Coarse	Medium	Fine	
○	0.0	0.0	3.7	1.4	21.6	48.9	24.4
□	0.0	0.0	14.5	9.1	15.6	38.4	22.4
△	0.0	0.0	0.2	0.2	1.2	24.7	73.7
◇	0.0	0.0	0.0	0.3	26.4	42.8	30.5
▽	0.0	0.0	0.0	0.9	25.9	36.4	36.8

SOIL DATA

SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	Material Description	USCS
○	TP-7	S-1	0.3	Fine to medium Sand, some Silt, trace fine Gravel. (MC=46.5%)	Fill
□	TP-7	S-2	0.67	Fine to coarse Sand, some Silt, little fine Gravel. (MC=27.6%)	Fill
△	TP-7	S-3	1.7	Silt, some fine Sand, trace fine Gravel. (MC=20.9%)	ML
◇	TP-8	S-1	0.5	Fine to medium Sand, some Silt. (MC=28.8%)	Fill
▽	TP-8	S-2	1.5	Peat with fine to medium Sand, and Silt. (MC=109.1%)	SM/PT

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South Bound Brook, NJ

Client: Concord Resort Development

Project: Concord Resort Development, Thompson, NY

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Plate 6F

Gradation Curve(s)

	% Cobbles	% Gravel		% Sand			% Fines
		Coarse	Fine	Coarse	Medium	Fine	
○	0.0	0.0	0.0	0.8	36.2	27.5	35.5
□	0.0	0.0	0.0	0.0	10.9	33.5	55.6
△	0.0	0.0	17.3	10.8	25.1	29.6	17.2
◇	0.0	0.0	27.9	10.8	20.5	25.6	15.2
▽	0.0	0.0	0.0	0.0	15.8	33.5	50.7

SOIL DATA

SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	Material Description	USCS
○	TP-9	S-1	0.25	Fine to medium Sand, and Silt. (MC=41.4%)	Fill
□	TP-9	S-3	1.5	Silt, and fine to medium Sand. (MC=26.1%)	ML
△	TP-10	S-1	0.25	Fine to coarse Sand, little Silt, little fine Gravel. (MC=10.8%)	Fill
◇	TP-10	S-2	1	Fine to coarse Sand, some fine Gravel, little Silt. (MC=7.7%)	Fill
▽	TP-10	S-6	5	Silt, and fine to medium Sand. (MC=10.0%)	ML

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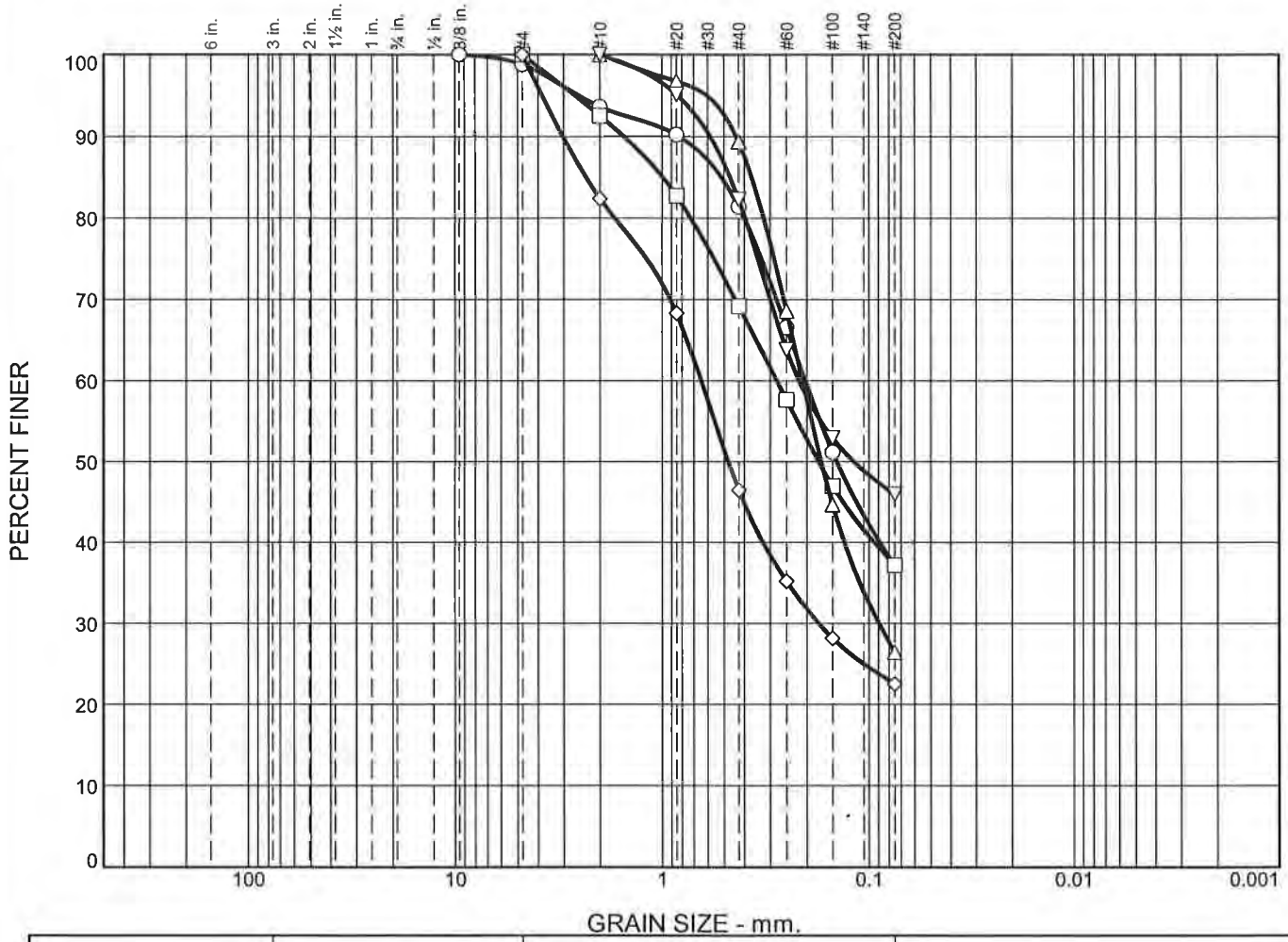
Plate 6G

Gradation Curve(s)



	% Cobbles	% Gravel		% Sand			% Fines
		Coarse	Fine	Coarse	Medium	Fine	
○	0.0	0.0	1.2	5.2	12.2	44.3	37.1
□	0.0	0.0	0.0	7.5	23.3	32.0	37.2
△	0.0	0.0	0.0	0.0	10.7	62.9	26.4
◇	0.0	0.0	0.0	17.6	35.9	24.0	22.5
▽	0.0	0.0	0.0	0.0	17.7	36.4	45.9

SOIL DATA

SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	Material Description	USCS
○	TP-11	S-1	0.5	Fine to medium Sand, and Silt, trace fine Gravel. (MC=23.8%)	Fill
□	TP-11	S-2	1	Fine to coarse Sand, and Silt. (MC=138.5%)	Fill
△	TP-11	S-3	2	Fine to medium Sand, some Silt. (MC=25.3%)	SM
◇	TP-11	S-5	4.5	Peat/Fine to coarse Sand, some Silt. (MC=457.1%)	PT/SM
▽	TP-13	S-1	,5	Fine to medium Sand, and Silt. (MC=55.0%)	Fill

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South Bound Brook, NJ

Client: Concord Resort Development

Project: Concord Resort Development, Thompson, NY

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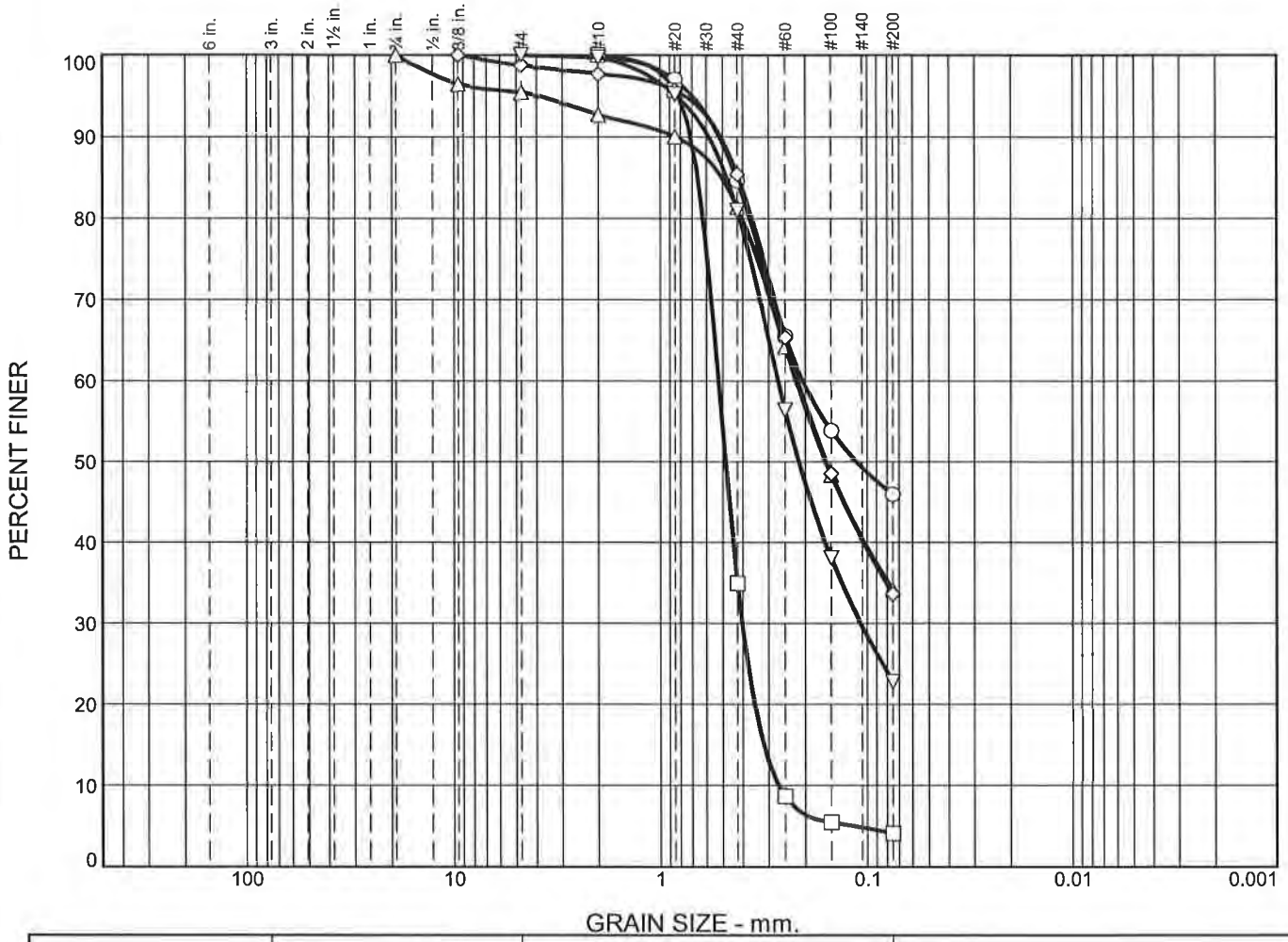
Plate 6H

Gradation Curve(s)



	% Cobbles	% Gravel		% Sand			% Fines
		Coarse	Fine	Coarse	Medium	Fine	
○	0.0	0.0	0.0	0.0	15.4	38.6	46.0
□	0.0	0.0	0.0	0.0	65.1	30.8	4.1
△	0.0	0.0	4.6	2.7	11.3	47.2	34.2
◇	0.0	0.0	1.3	1.0	12.3	51.8	33.6
▽	0.0	0.0	0.0	0.3	18.7	58.2	22.8

SOIL DATA

SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	Material Description	USCS
○	TP-13	S-2	1.5	Fine to medium Sand, and Silt. (MC=52.2%)	Fill
□	TP-13	S-3	2	Fine to medium Sand, trace Silt. (MC=25.0%)	Fill
△	TP-14	S-1	0.25	Fine to medium Sand, some Silt, trace fine Gravel. (MC=16.8%)	SM
◇	TP-14	S-2	0.5	Fine to medium Sand, some Silt, trace fine Gravel. (MC=9.1%)	SM
▽	TP-14	S-3	1.5	Fine to coarse Sand, some Silt. (MC=14.1%)	SM

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South Bound Brook, NJ

Client: Concord Resort Development

Project: Concord Resort Development, Thompson, NY

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Gradation Curve(s)

	% Cobbles	% Gravel		% Sand			% Fines
		Coarse	Fine	Coarse	Medium	Fine	
○	0.0	0.0	12.1	10.3	16.1	31.4	30.1
□	0.0	0.0	0.0	2.7	12.8	39.5	45.0

SOIL DATA

SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	Material Description	USCS
○	TP-15	S-1	0.25	Fine to coarse Sand, some Silt, little fine Gravel. (MC=13.3%)	Fill
□	TP-15	S-2	0.5	Fine to medium Sand, and Silt. (MC=10.2%)	SM

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South Bound Brook, NJ

Client: Concord Resort Development

Project: Concord Resort Development, Thompson, NY

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Plate 6J

DATA SUMMARY SHEET
Concord Resort Development
Thompson, New York

Explorations No.	Depth	Moisture Content (%)	Organic Matter (%)	Total Density (pcf)	Gradation Test	In-Place Permeability Test
B-1	0-2'	21.8	-	-	*	
B-1	2-4'	10.3	-	-	*	
B-1	4-6'	108.4	16.7	-		
B-2	2-4'	23.0	-	-	*	
B-2	4-5'	29.9	6.5	-		
B-3	0-2'	16.0	-	-	*	
B-4	0-2'	10.1	-	-	*	
B-4	2-4'	17.0	-	-	*	
B-5	0-2'	62.9	13.0	-		
B-6	0-2'	9.2	-	-	*	
B-7	0-2'	37.1	12.5	-		
B-7	2-4'	24.8	-	-		
TP-1	0-8"	154.1	34.1	116.4	*	
TP-1	8-16"	23.6	5.6	101.4	*	
TP-1	16-24"	79.2	7.6	63.5	*	
TP-1	3'	249.6	37.5	-	*	
TP-2	6-8"	46.1	12.1	99.4	*	
TP-2	8-16"	27.3	3.1	102.6	*	
TP-2	16-24"	23.7	1.7	114.3	*	
TP-3	0-8"	21.4	5.0	107.5	*	
TP-3	8-16"	18.9	2.8	113.2	*	
TP-3	16-24"	14.0	6.9	135.4	*	
TP-4	0-8"	11.3	11.1	128.1	*	
TP-4	8-16"	13.0	1.5	119.8	*	
TP-5	0-8"	22.9	4.4	100.7	*	
TP-5	8-16"	34.6	20.7	93.3		
TP-5	16-24"	88.1	-	88.0	*	
TP-6	0-8"	29.6	11.9	115.2	*	
TP-6	8-16"	15.2	1.0	108.8	*	*
TP-6	16-24"	18.3	2.1	125.4	*	
TP-7	0-8"	46.5	13.7	96.8	*	
TP-7	8-16"	16.0	5.3	136.1	*	
TP-7	16-24"	20.9	0.5	127.4	*	*
TP-8	0-16"	28.8	7.1	105.3	*	
TP-8	16-24"	109.1	20.1	103.8	*	

DATA SUMMARY SHEET
Concord Resort Development
Thompson, New York

Explorations No.	Depth	Moisture Content (%)	Organic Matter (%)	Total Density (pcf)	Gradation Test	In-Place Permeability Test
TP-9	0-8"	41.4	10.8	110.5	*	
TP-9	8-16"	38.7	2.9	119.5		
TP-9	16-24"	26.1	-	108.7	*	
TP-10	0-8"	10.8	1.8	128.4	*	
TP-10	8-16"	27.4	1.5	115.6	*	
TP-10	16-24"	27.2	-	108.2		
TP-10	5'	10.0	4.9	-	*	
TP-11	0-8"	23.8	6.4	109.0	*	
TP-11	8-16"	138.5	35.3	72.3	*	
TP-11	16-24"	55.0	3.5	99.0	*	
TP-11	4'-6"	457.1	75.4	-	*	
TP-12	8-12"	17.6	-	125.4		
TP-12	12-24"	18.2	-	125.0		
TP-13	0-8"	55.0	11.4	89.3	*	
TP-13	8-16"	52.2	7.5	82.2	*	
TP-13	16-24"	25.0	0.6	83.7	*	
TP-14	0-8"	16.8	5.1	83.3	*	
TP-14	8-16"	9.1	6.1	-	*	
TP-14	16-24"	14.1	4.1	117.2	*	*
TP-15	0-8"	13.3	4.3	140.2	*	
TP-15	8-16"	10.2	1.4	154.4	*	
TP-15	16-24"	8.1	-	-		

APPENDIX

APPENDIX

Limitations

A. Subsurface Information

Locations: The locations of the explorations were approximately determined by tape and compass measurement from untitled plans provided to us by AKRF. Elevations of the explorations were approximately determined by interpolation between contours shown on topographic plans provided to us by the site engineer. The locations and elevations of the explorations should be considered accurate only to the degree implied by the method used.

Interface of Strata: The stratification lines shown on the individual logs of the subsurface explorations represent the approximate boundaries between soil types, and the transitions may be gradual.

Field Logs/Final Logs: A field log was prepared for each exploration by a member of our staff. The field log contains factual information and interpretation of the soil conditions between samples. Our recommendations are based on the final logs as shown in this report and the information contained therein, and not on the field logs. The final logs represent our interpretation of the contents of the field logs, and the results of the laboratory observations and/or tests of the field samples.

Water Levels: Water level readings have been made in the explorations at times and under conditions stated on the individual logs. These data have been reviewed and interpretations made in the text of this report. However, it must be noted that fluctuations in the level of the groundwater will occur due to variations in rainfall, temperature, and other factors.

Pollution/Contamination: Unless specifically indicated to the contrary in this report, the scope of our services was limited only to investigation and evaluation of the geotechnical engineering aspects of the site conditions, and did not include any consideration of potential site pollution or contamination resulting from the presence of chemicals, metals, radioactive elements, etc. This report offers no facts or opinions related to potential pollution/contamination of the site.

Environmental Considerations: Unless specifically indicated to the contrary in this report, this report does not address environmental considerations which may affect the site development, e.g., wetlands determinations, flora and fauna, wildlife, etc. The conclusions and recommendations of this report are not intended to supersede any environmental conditions which should be reflected in the site planning.

B. Applicability of Report

This report has been prepared in accordance with generally accepted soils and foundation engineering practices for the exclusive use of The Concord Resort Development for specific application to the design of the proposed development. No other warranty, expressed or implied, is made.

A more detailed subsurface investigation should be performed at the site prior to proceeding with final design. This investigation should consider the final locations and design features of the proposed facilities and should serve to confirm and/or further define the subsurface conditions and recommendations discussed in this preliminary study.

C. Reinterpretation of Recommendations

Change in Location or Nature of Facilities: In the event that any changes in the nature, design or location of the facilities are planned, the conclusions and recommendations contained in this report shall not be considered valid unless the changes are reviewed and conclusions of this report modified or verified in writing.

Changed Conditions During Construction: The analyses and recommendations submitted in this report are based in part upon the data obtained from seven widely-spaced test borings and 15 test pit excavations performed for this study. The nature and extent of variations between the explorations may not become evident until construction. If variations then appear evident, it will be necessary to reevaluate the recommendations of this report.

Changes in State-of-the-Art: The conclusions and recommendations contained in this report are based upon the applicable standards of our profession at the time this report was prepared.

D. Use of Report by Prospective Bidders

This soil and foundation engineering report was prepared for the project by Melick-Tully and Associates, P.C. for design purposes and may not be sufficient to prepare an accurate bid. Contractors utilizing the information in the report should do so with the express understanding that its scope was developed to address design considerations. Prospective bidders should obtain the owner's permission to perform whatever additional explorations or data gathering they deem necessary to prepare their bid accurately.

E. Construction Observation

We recommend that Melick-Tully and Associates, P.C. be retained to provide on-site soils engineering services during the earthwork construction and foundation phases of the work. This is to observe compliance with the design concepts and to allow changes in the event that subsurface conditions differ from those anticipated prior to the start of construction.