Kenney Geotechnical Services

Kenney Geotechnical Engineering Services PLLC

Preliminary Geotechnical Evaluation Report

Rome Business Park
Ellsworth Road
Rome, New York

Christopher M. Kenney, P.E.
2-27-2020

CONTENTS

INTRODUCTION

This report presents the results of the preliminary geotechnical investigation performed for the Rome Business Park in Rome, New York. This geotechnical report presents the data developed during the subsurface investigation and provides analysis and recommendations for the proposed construction.

No environmental services are included in this study. No conclusions have been drawn regarding environmental conditions of the site, potential contaminants, potential special treatment or disposal of site materials, or other environmental considerations.

AUTHORIZATION

Our services for this project was authorized by Terry Horst, President of Terry Horst Landscape Architecture on February 10th, 2020.

PROJECT DESCRIPTION

The purpose of this investigation is to provide a preliminary understanding of the subsurface conditions at the site. This study is not specific to any building or structure and additional borings may be necessary in the future.

DESIGN CRITERIA

No design specifications were given at the time of this report.

The following ASTM Standards were utilized during this study:

- ASTM D1586 "Penetration Test and Split-Barrel Sampling of Soils"
- ASTM D2487 "Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System)"
- ASTM D5434 "Standard Guide for Field Logging of Subsurface Exploration of Soil and Rock"

Local geotechnical practice was followed in the performance of this study. We assumed a tolerable foundation settlement of one inch in our analysis. Frost depth was assumed to be 48 inches for this analysis.

SITE CONDITIONS

The project site is a 16.6-acre open field to the southeast of Griffiss International Airport in Rome, New York. The site slopes to the east with surface elevations ranging from approximately 476 feet to 472 feet.

The site is located within the Mohawk River Valley physiographic province. Major topographic and geologic features in this area were formed during the last glacial advance and retreat, which ended approximately 12,000 years ago. Regional surficial geologic mapping suggests that natural soils in the site vicinity generally consist of lacustrine sand. Bedrock mapping suggests that Utica Shale underlies soil in the areas.

FIELD STUDY

The subsurface investigation performed at the site included four soil borings (B-1 to B-4, respectively) and two infiltration tests (IT-1 and IT-2). The site investigation was performed on February 24th, 2020. The boring locations were selected and field located by Kenney Geotechnical Engineering Services personnel. Test borings were performed with a track-mounted Geoprobe 7822DT. Hollow stem augers were utilized to advance the borehole. Standard penetration testing (SPT) (ASTM D1586) was performed with an automatic hammer to obtain soil samples. Test borings were advanced to depths of 20 feet or practical refusal. Practical refusal occurs when augers cannot be advanced or consecutive standard penetration test "N" values exceed 50 blows per foot.

Infiltration testing was performed by installing a temporary four-inch diameter PVC casing into a cleaned borehole to the depth of five feet below the ground surface. After sealing the borehole annulus, the test locations were pre-soaked for twenty-four hours. Testing was performed the day following presoaking. Stabilized infiltration readings are summarized in the attached tables at the end of this report.

Soil samples obtained during the subsurface investigation were classified by a Geotechnical Engineer using the Unified Soil Classification System. Boring logs documenting the subsurface conditions encountered are attached. The boring logs and related information depict subsurface conditions only at the specific locations and times indicated. Subsurface conditions and water levels at other locations may differ from conditions at the locations where sampling was conducted. The passage of time also may result in changes in the conditions interpreted to exist at the locations where sampling was performed.

LABORATORY TESTING

Laboratory testing performed for this project included Natural Moisture Content Testing (ASTM D-2216) and Particle Size Analysis (ASTM D-422). Testing was performed in Kenney Geotechnical Services laboratory. Test results are attached to this report and are summarized below.

Boring	Depth	Natural Moisture Content (%)	Grain Size Distribution				Classification (USCS)
			Gravel* (%)	Sand** (%)	Silt*** (%)	Clay*** (%)	
B-1	2-4	14.6	-	-	-	-	-
B-1	4-6	15.0	1.8	81.6	16.6		SM
B-1	6-8	16.5	-	-	-	-	-
B-1	13-15	33.6	-	-	-	-	-
B-1	18-20	33.1	-	-	-	-	-
B-2	2-4	20.4	-	-	-	-	-
B-2	6-8	9.6	1.9	65.9	32.2		SM
B-2	8-10	15.9	-	-	-	-	-
B-3	2-4	12.7	-	-	-	-	-
B-3	4-6	15.6	-	-	-	-	-
B-3	6-8	16.9	-	-	-	-	-
B-3	8-10	22.1	0	6.1	93.9		ML
B-3	13-15	37.8	-	-	-	-	-
B-3	18-20	12.4	-	-	-	-	-

B-4	4-6	31.3	-	-	-	-	-
B-4	6-8	28.7	-	-	-	-	-
B-4	8-10	27.8	-	-	-	-	-
B-4	13-15	26.2	-	-	-	-	-
B-4	18-20	29.2	-	-	-	-	-

* Material passing 3 inch sieve opening and retained by No. 4 sieve.
** Material passing No.4 sieve and retained by No. 200 sieve.
*** Material passing No. 200 sieve

SUBSURFACE CONDITIONS ENCOUNTERED

The following presents our interpretation of the subsurface conditions encountered during exploration and is based on our review of the recovered samples, the boring logs, drilling observations, and our professional experience.

In general, the subsurface conditions encountered consisted of lacustrine sand with silt or gravel. The following table summarizes the results of Standard Penetration Testing performed during the advancement of the test borings.

Stratum	From	To	USCS Classifications	"N" Values (Uncorrected)			Condition	Plasticity	Interpretation
	Feet BGS	Feet BGS		Low	High	Average			
A	0	0.2	Topsoil	-	-	-	-	-	Topsoil
B	0.2	20	SW, SWG, and SM	5	100	25	Loose to Very Dense	Nonplastic	Lacustrine Sand

Borings were advanced to the planned exploration depth (20 feet bgs) without encountering refusal conditions.

GROUNDWATER CONDITIONS ENCOUNTERED

Water levels were measured within the augers during advancement and from the open borehole after the augers were removed. The following table summarizes the water levels measured at the time of the subsurface investigation.

Boring Location	Depth of Water While Drilling (ft)	Depth of Water Within the Augers (ft)	Depth of Water in Open Borehole (ft)	Depth of Cave in Open Borehole (ft)
B-1	14.0	14.5	Dry	Caved to 9.90
B-2	14.0	Dry	9.50	Caved to 9.70
B-3	14.0	19.0	8.5	Caved to 9.00
B-4	14.0	11.5	Dry	Caved to 9.00

Groundwater depths and seepage rates will vary with the seasons and changes in precipitation patterns and may be higher during the wetter seasons. No long-term groundwater data was generated during this study and the range of possible groundwater elevation is unknown.

RECOMMENDATIONS AND CONCLUSIONS

A. Geotechnical Analysis

In general the site appears to have acceptable geotechnical aspects for development. The sand encountered to a depth of 20 feet below the ground surface layer is capable of supporting a shallow foundation system for buildings up to three stories in height. The sand layer should provide good infiltration for stormwater management features. Groundwater was encountered at a depth of 14 feet, beyond typical excavation depths. Additional preliminary recommendations are presented below.

B. Site Preparation and Earthwork

Earthwork must be performed using methods that will result in a stable excavations and fills. Typical temporary earthwork measures such as temporary drainage swales, stabilized haul roads, and the use of protective layers of crushed stone can be employed at this site. It is recommended that earthwork is observed by geotechnical personnel.

We anticipate earthwork will be performed as follows:

- Divert stormwater from the work area;
- Dewater as necessary to work in the dry; Install subsurface drainage as necessary to prevent water from ponding in subsurface structures.
- Strip existing pavement, fill, topsoil, stumps, roots and organics from all areas that will receive new construction to establish subgrade.
- Create stable level benches for the placement of fill on sideslopes. Provide drainage at each bench level.
- Temporary slopes (less than one week duration) should not be steeper than 1.5H:1V unless approved by geotechnical personnel. Final slopes should not be steeper than 3H:1V unless a slope stability analysis is performed to confirm acceptability.

- Proof-roll subgrade with a fully loaded dump truck, or accepted alternative equipment, under the observation of geotechnical personnel. Areas that rut, weave, or deflect should be over-excavated and replaced with compacted structural fill (see below for structural fill characteristic requirements).
- Utilize structural fill to raise site grades to the desired elevation. Structural fill should consist of imported granular material conforming to NYSDOT Subbase Course (2" minus) or approved equal. Existing on-site soil can be re-utilized as structural fill pending field review by geotechnical personnel.
- Field moisture contents for structural fill should be maintained within 2 percentage points of the optimum moisture content established by laboratory testing to provide adequate compaction. All fill should be placed in level lifts having a loose thickness no greater than 12 inches and should be compacted to at least the following minimum percentages of the Modified Proctor (ASTM D-1557) maximum dry density:

  - Below footings: 95%
  - Beneath slab-on-grade or pavements: 95%
  - Utility trench backfill: 95%
  - Beneath landscape areas: 90%
  - Beneath sidewalks and exterior slabs: 95%

  Bulk samples of proposed structural fill materials should be delivered to our testing laboratory at least two weeks prior to the initiation of earthwork. In-place density testing should be performed at a frequency of one test per 500 square feet per lift in open areas and one test per 25 feet per lift in trenches.
- If the structure is to be constructed during the winter months or if the building interiors will be subjected to freezing temperatures after footer construction, adequate frost cover and protection must be provided. Earthwork cannot be performed with frozen material.
- Permanent slopes should be graded no steeper than 3 horizontal: 1 vertical unless they are reinforced or otherwise stabilized.

In utility trenches, or other confined areas, small compaction equipment may be necessary such as a vibratory plate, jumping jack or walk-behind vibratory roller.

In-place density testing should be performed at a frequency of one test per 25 feet per lift in trenches. Utility trench fill should be placed in level lifts no greater than 8 inches in thickness and should be compacted to at least 95%the Modified Proctor (ASTM D-1557) maximum dry density. Structural fill should consist of imported granular material such as NYSDOT Subbase (2" minus) or approved equal. Adequate frost cover and protection must be provided during winter weather construction. Earthwork cannot be performed with frozen material.

C. Excavation and Earth Support

We anticipate conventional earthmoving equipment will be capable of performing the site excavation. Temporary excavation slopes must be evaluated by the Contractor's on-site Responsible Person. We anticipate on-site soil will be classified as Type C soil. Type C materials must be graded to slopes no greater than 1.5:1 (horizontal to vertical) unless shoring is utilized. The Contractors on-site Responsible Person should periodically review excavations for signs of movement or distress. Excavation sidewalls should be periodically raked to remove loose particles.

Site grading and shoring must consider the loads imposed by existing structures. The design of shoring and underpinning elements is beyond the scope of this report.

Design of subsurface walls subjected to lateral earth pressure must consider the type of wall, degree of restraint against wall rotation, and other factors. We suggest the following lateral earth pressure parameters:

- Ka = 0.33
- Kp = 3.00
- Ko = 0.5
- Coefficient of friction = 0.4

Any water pressure or surcharges from equipment, material stockpiles, or adjacent structures must be added to the suggested lateral pressure.

It is recommended that drainage is provided for all walls to reduce hydrostatic wall loading and possible frost action. Backfill against any walls should consist of a relatively well-graded free-draining granular material having no more than 10% passing the No. 200 sieve. The granular backfill zone behind walls should be at least one foot wide as measured horizontally from the face of the wall. Backfill against

walls should be placed in loose lifts no greater than 6 inches in thickness. A nonwoven geotextile filter should be placed between the granular backfill and insitu soil to prevent the migration of fine-grained soil.

D. Construction Dewatering

Groundwater was generally encountered below a depth of 14 feet during the subsurface investigation. Dewatering may be necessary for excavations that extend beyond this depth. Surface water must be diverted from the construction area. Ponding water should not be permitted above slopes or on earth surfaces that will support foundations, compacted fill, or earth retention structures. All fill surfaces should be sloped or crowned to prevent water ponding and sealed with a smooth-drum roller at the end of each shift to reduce infiltration. Smooth rolled surfaces must be scarified before placing subsequent lifts of fill.

Storm events and other factors can affect groundwater and seepage during construction. All dewatering discharge should be transported to a temporary dewatering basin constructed consistent with NYDEC construction stormwater and/or dewatering treatment Best Management Practices (BMPs).

E. Foundations

An allowable bearing pressure of 3,000 pounds per square foot (psf) is recommended for the design of shallow foundations bearing on medium dense sand. Foundation bearing grade must be reviewed by geotechnical personnel to verify the strength of the soil. Any disturbed or saturated soil must be removed from below foundation bearing grade. Proper management of the soil will be critical during foundation construction and earthwork.

Geotechnical personnel must review the bearing grade to ensure that the assumptions made based upon the findings of the subsurface conditions are consistent with the ground conditions exposed during foundation excavation. Additional undercutting may be necessary where the bearing material is considered unacceptable by on-site geotechnical personnel. All exterior footings should bear at least 48 inches below finished exterior grade for frost protection unless an insulated frost protection system is installed.

We estimate that foundations designed as recommended herein and properly managed during construction will undergo total settlements of less than one inch.

F. Interior Concrete Slabs on Grade

All topsoil, pavement, organic matter, building debris, etc. must be removed from beneath the concrete slab on grade subgrade. All subgrade areas should be proof-rolled as discussed in the Earthwork recommendations. A preliminary subgrade modulus of 250 pci is suggested for design; however, this modulus value assumes subgrade is protected from disturbance by over-excavation or saturation during construction. If necessary for grading, place structural fill over stripped ground in order to achieve new floor slab elevations. Structural fill placed to establish floor slab subgrade should conform to the recommendations for materials and compaction presented in the Earthwork recommendations.

The subbase for the slab-on-grade should consist of a minimum of 6 inches of gravel or crushed stone conforming to NYSDOT specifications for Item 304-2.02 Type 2 or 4. Follow compaction requirements presented for earthwork.

G. Exterior Concrete Slabs on Grade (Sidewalks, Curbs, Gutters, Misc.)

Earthwork for exterior slabs should be performed as discussed in Section D. Type I/II cement is sufficient for use in the concrete for the sidewalks.

H. Seismic Hazard Concerns, Liquefaction, Seismicity, and Faulting

The subsurface conditions encountered and "N" values recorded during the subsurface investigation suggest that seismic **Site Class D** is appropriate for this site. The estimated design spectral response acceleration parameters are $\mathbf{S_{DS} = 0.184g}$ and $\mathbf{S_{D1} = 0.111g}$. Liquefaction, surface rupture from faulting or lateral spreading is estimated to have a low probability of occurrence given the soil conditions encountered and typical regional seismicity.

LIMITATIONS

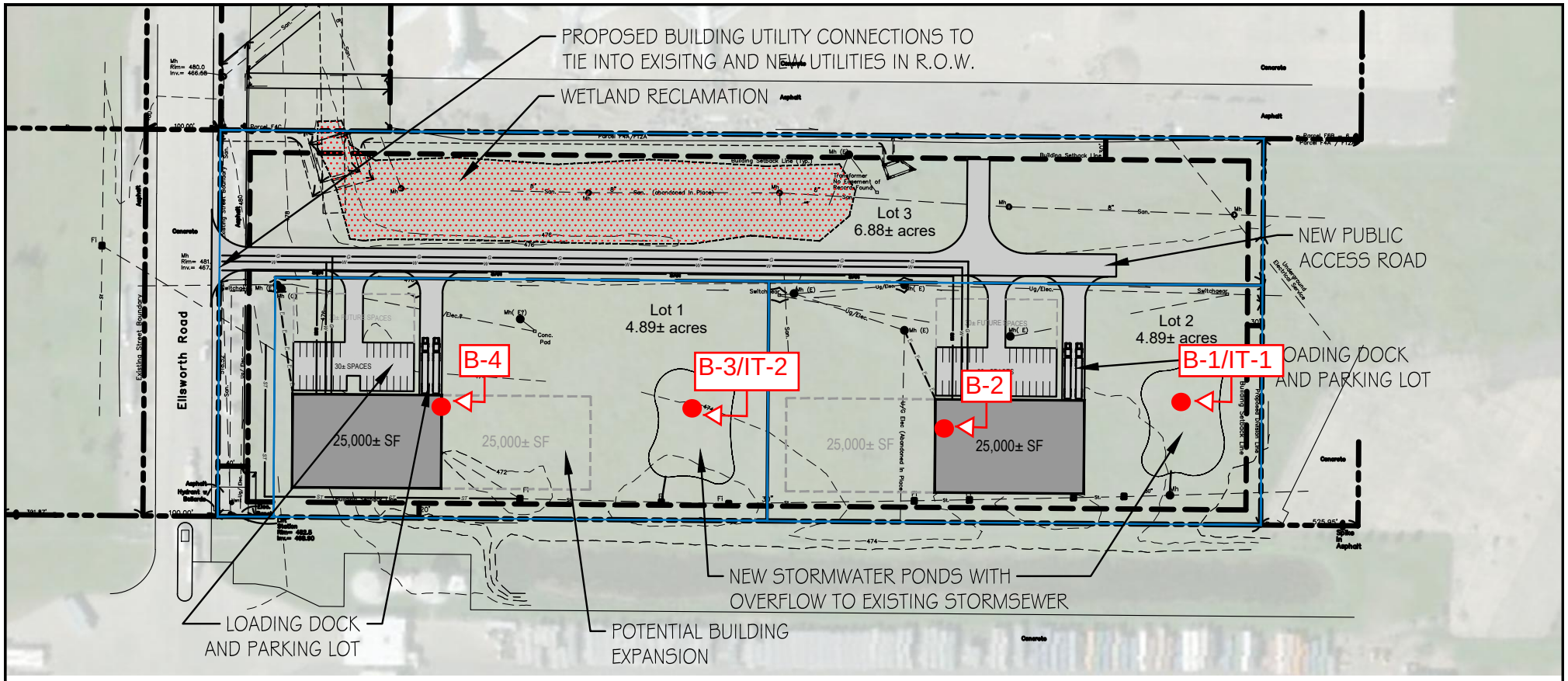
This report was prepared for the Rome Business Park should not construed as instruction to the Contractor. Detailed design information was not available at the time of preparing this report. Kenney Geotechnical Engineering Services shall be afforded the opportunity to complete a thorough review of the final facility design as it relates to foundations and earthworks to verify our assumptions, and to confirm that our recommendations are appropriate. If not given this opportunity, Kenney Geotechnical Engineering services cannot assume liability for omissions, misinterpretations, or deficiencies.

The recommendations presented in this report are predicated on the performance of construction observation and testing by qualified geotechnical personnel. We request continued involvement with this project so that we may assess subsurface conditions exposed during construction to determine if modifications to our recommendations are necessary.

REFERENCES

"Surficial Geologic Map of New York – Hudson Mohawk Sheet", New York State Museum, 1986.

"Bedrock Map of New York – Hudson Mohawk Sheet", New York State Museum, 1970.



LEGEND

EXISTING CONTOUR	427
PROPERTY LINE	
NEW GAS LINE	G
EXISTING WATER LINE	W
NEW WATER LINE	W
EXISTING ELECTRICAL LINE	Ug/Elect.
NEW ELECTRICAL LINE	E
EXISTING SANITARY LINE	San
NEW SANITARY LINE	SAN
EXISTING STORM DRAIN	St
NEW STORM DRAIN	ST

GRAPHIC SCALE:

0' 100' 200' 400'

ENTERPRISE WAY LOT LAYOUT SCHEMATIC PLAN

DATE:02/19/2020

SCALE: 1" = 200'

DRAWN BY: AR

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VIP
ARCHITECTURE

Project: ROME BUSINESS PARK
Project Location: ROME, NEW YORK
Project Number: 2020-033

Key to Soil Symbols and Terms

TERMS DESCRIBING CONSISTENCY OR CONDITION

COARSE-GRAINED SOILS (major portions retained on No. 200 sieve): includes (1) clean gravel and sands and (2) silty or clayey gravels and sands. Condition is rated according to relative density as determined by laboratory tests or standard penetration resistance tests.

Descriptive Terms	Relative Density	SPT Blow Count
Very loose	0 to 15 %	< 4
Loose	15 to 35 %	4 to 10
Medium dense	35 to 65 %	10 to 30
Dense	65 to 85 %	30 to 50
Very dense	85 to 100 %	> 50

FINE-GRAINED SOILS (major portions passing on No. 200 sieve): includes (1) inorganic and organic silts and clays, (2) gravelly, sandy, or silty clays, and (3) clayey silts. Consistency is rated according to shearing strength, as indicated by penetrometer readings, SPT blow count, or unconfined compression tests.

Descriptive Terms	Unconfined Compressive Strength kPa	SPT Blow Count
Very soft	< 25	< 2
Soft	25 to 50	2 to 4
Medium stiff	50 to 100	4 to 8
Stiff	100 to 200	8 to 15
Very stiff	200 to 400	15 to 30
Hard	> 400	> 30

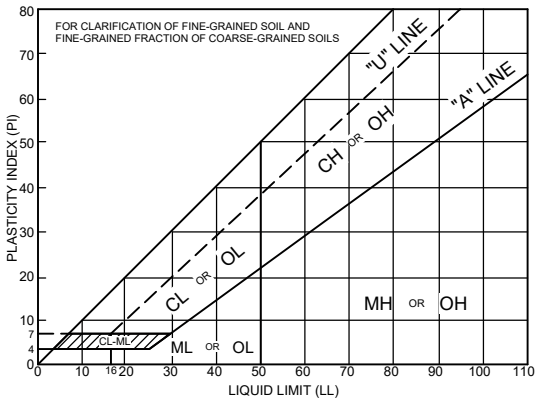
GENERAL NOTES

1. Classifications are based on the United Soil Classification System and include consistency, moisture, and color. Field descriptions have been modified to reflect results of laboratory tests where deemed appropriate.

2. Surface elevations are based on topographic maps and estimated locations.

3. Descriptions on these boring logs apply only at the specific boring locations and at the time the borings were made. They are not guaranteed to be representative of subsurface conditions at other locations or times.

Major Divisions			Group Symbols	Typical Names	Laboratory Classification Criteria		
Coarse-Grained soils (More than half the material is larger than No. 200 sieve size)	Gravels (More than half of coarse fraction is larger than No. 4 sieve size)	Clean gravel (Little or no fines)	GW	Well-graded gravels, gravel-sand mixtures, little or no fines	Determine percentages of sand and gravel from grain size curve, Depending on percentage of fines (fraction smaller than No. 200 sieve) coarse-grained soils are classified as follows: Less than 5 percent..... GW, GP, SW, SP; More than 12 percent..... GM, GC, SM, SC; 6 to 12 percent..... Borderline case4s requiring dual symbols**	$C_U = \frac{D_{60}}{D_{10}}$ greater than 4; $C_C = \frac{(D_{30})^2}{D_{10} \times D_{60}}$ between 1 and 3	
			GP	Poorly-graded gravels, gravel-sand mixtures, little or no fines		Not meeting all gradation requirements for GW	
		Gravel with fines (Appreciable amount of fines)	GM* d u	Silty gravels, gravel-sand-silt mixtures		Atterberg limits below "A" line or P.I. less than 4	Above "A" line with P.I. between 4 and 7 are borderline cases requiring use of dual symbols
			GC	Clayey gravels, gravel-sand-silt mixtures		Atterberg limits above "A" line or P.I. greater than 7	
	Sands (More than half of coarse fraction is smaller than No. 4 sieve size)	Clean sands (Little or no fines)	SW	Well-graded sands, gravelly sands, little or no fines		$C_U = \frac{D_{60}}{D_{10}}$ greater than 6; $C_C = \frac{(D_{30})^2}{D_{10} \times D_{60}}$ between 1 and 3	
			SP	Poorly-graded sands, gravelly sands, little or no fines		Not meeting all gradation requirements for SW	
		Sands with fines (Appreciable amount of fines)	SM* d u	Silty sands, sand-silt mixtures		Atterberg limits below "A" line or P.I. less than 4	Above "A" line with P.I. between 4 and 7 are borderline cases requiring use of dual symbols
			SC	Clayey sands, sand-clay mixtures		Atterberg limits above "A" line or P.I. greater than 7	
Fine-Grained soils (More than half the material is smaller than No. 200 sieve size)	Silts and Clays (Liquid limit less than 60)		ML	Inorganic silts and very fine sands, rock floor, 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 60)		MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, organic silts			
			CH	Inorganic clays of high plasticity, fat clays			
			OH	Organic clays of medium to high plasticity, organic silts			
	Highly Organic Soils		Pt	Peat and other highly organic soils			



Plasticity Chart

Particle Size		
Sieve sizes	< #200	#200 to #40
		#40 to #10
		#10 to #4
mm	< 0.074	0.074 to 0.42
		0.42 to 2.00
		2.00 to 4.76
Material	Silt or clay	Sand: Fine, Medium, Coarse

Particle Size		
Sieve	#4 to 3/4 in.	4.76 to 19.1
	3/4 in. to 3 in.	19.1 to 76.2
	3 in. to 12 in.	76.2 to 304.8
	12 in. to 36 in.	304.8 to 914.4
mm		
Material	Gravel: Fine, Coarse	Cobble	Boulders

* Division of GM and SM groups into subdivisions of d and u are for roads and airfields only. Subdivision is based on Atterberg Limits: suffix d used when L.L. is 23 or less and the P.I. is 6 or less; the suffix is used when L.L. is greater than 26.

** Borderline classifications used for soils possessing characteristics of two groups are designated by combinations of groups symbols. For example; GW-GC, well-graded gravel-sand mixture with clay binder.

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KEY TO SYMBOLS

CLIENT TERRY HORST LANDSCAPE ARCHITECTURE
PROJECT NAME ROME BUSINESS PARK
PROJECT NUMBER 2020-033
PROJECT LOCATION ROME, NEW YORK

LITHOLOGIC SYMBOLS
(Unified Soil Classification System)

ML: USCS Silt

SM: USCS Silty Sand

SW: USCS Well-graded Sand

SWG: USCS Well-graded Gravelly Sand

TOPSOIL: Topsoil

SAMPLER SYMBOLS

Standard Penetration Test

WELL CONSTRUCTION SYMBOLS

ABBREVIATIONS

LL - LIQUID LIMIT (%)
PI - PLASTIC INDEX (%)
W - MOISTURE CONTENT (%)
DD - DRY DENSITY (PCF)
NP - NON PLASTIC
-200 - PERCENT PASSING NO. 200 SIEVE
PP - POCKET PENETROMETER (TSF)

TV - TORVANE
PID - PHOTOIONIZATION DETECTOR
UC - UNCONFINED COMPRESSION
ppm - PARTS PER MILLION

Water Level at Time Drilling, or as Shown

Water Level at End of Drilling, or as Shown

Water Level After 24 Hours, or as Shown

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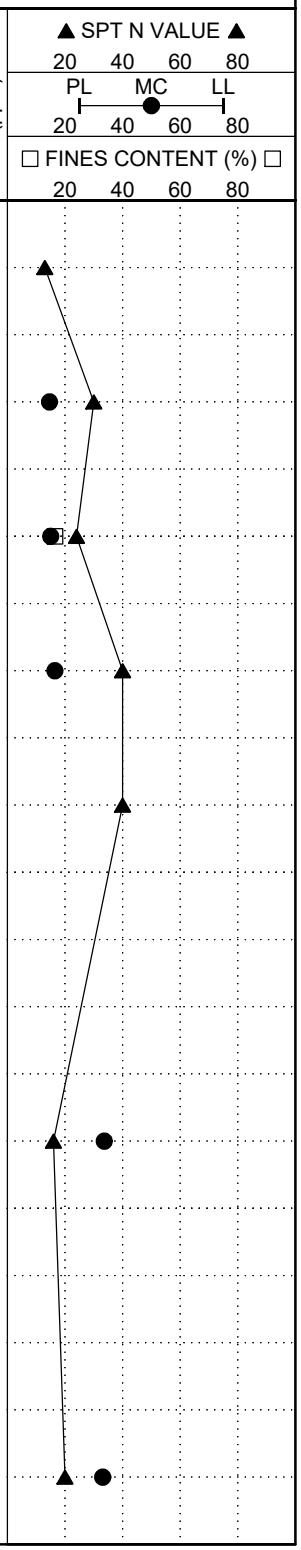
BORING NUMBER B-1

CLIENT TERRY HORST LANDSCAPE ARCHITECTURE
PROJECT NAME ROME BUSINESS PARK
PROJECT NUMBER 2020-033
PROJECT LOCATION ROME, NEW YORK
DATE STARTED 2/24/20 **COMPLETED** 2/24/20
GROUND ELEVATION 473 ft **HOLE SIZE** 8"
DRILLING CONTRACTOR KENNEY GEOTECHNICAL SERVICES
GROUND WATER LEVELS:
DRILLING METHOD 3.25" HSA
AT TIME OF DRILLING 14.00 ft / Elev 459.00 ft
LOGGED BY RS **CHECKED BY** CMK
AT END OF DRILLING 14.50 ft / Elev 458.50 ft
NOTES
AFTER DRILLING --- DRY: CAVED TO 9.90 FEET

DEPTH (ft)	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	VOC (ppm)
0	TOPSOIL, MOIST					
	(SW) BROWN MEDIUM DENSE SILTY SAND, MOIST	SPT 1	75	3-6-7-4 (13)		
		SPT 2	75	6-12-18-18 (30)		
5		SPT 3	90	8-12-12-24 (24)		
	(SW) BROWN DENSE WELL-GRADED SAND WITH GRAVEL, MOIST TO WET	SPT 4	90	19-19-21-25 (40)		
		SPT 5	90	30-21-19-18 (40)		
10						
	(SM) BROWN MEDIUM DENSE SILTY SAND, WET	SPT 6	90	7-7-9-8 (16)		
15						
		SPT 7	90	12-12-8-9 (20)		
20						



Bottom of borehole at 20.0 feet.

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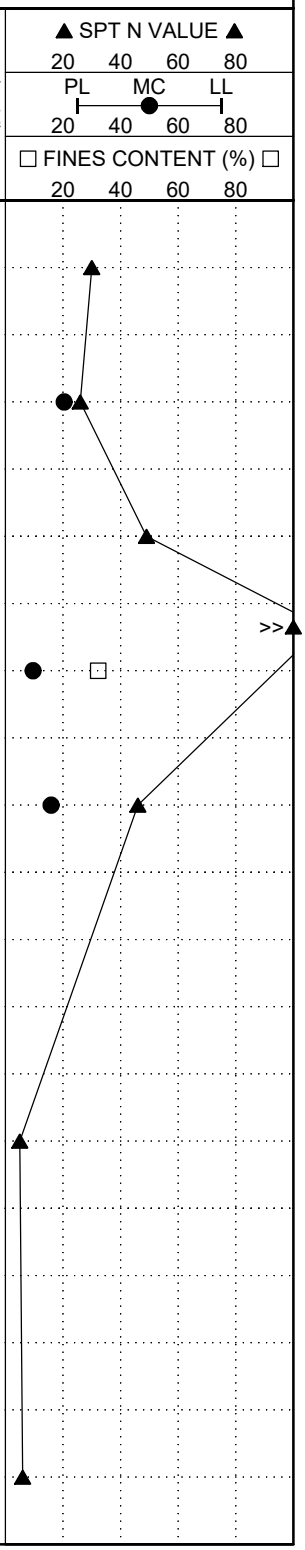
BORING NUMBER B-2

CLIENT TERRY HORST LANDSCAPE ARCHITECTURE
PROJECT NAME ROME BUSINESS PARK
PROJECT NUMBER 2020-033
PROJECT LOCATION ROME, NEW YORK
DATE STARTED 2/24/20 **COMPLETED** 2/24/20
GROUND ELEVATION 474 ft **HOLE SIZE** 8"
DRILLING CONTRACTOR KENNEY GEOTECHNICAL SERVICES
GROUND WATER LEVELS:
DRILLING METHOD 3.25" HSA
AT TIME OF DRILLING 14.00 ft / Elev 460.00 ft
LOGGED BY RS **CHECKED BY** CMK
AT END OF DRILLING --- DRY
NOTES
AFTER DRILLING 9.50 ft / Elev 464.50 ft : CAVED TO 9.70 FEET

DEPTH (ft)	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	VOC (ppm)
0	TOPSOIL, MOIST					
	(SW) BROWN MEDIUM DENSE TO DENSE WELL-GRADED SAND WITH GRAVEL, MOIST	SPT 1	75	7-10-20-22 (30)		
		SPT 2	90	14-14-12-17 (26)		
5		SPT 3	63	50-24-25-26 (49)		
	(SM) BROWN VERY DENSE TO DENSE SILTY SAND WITH GRAVEL, MOIST POSSIBLE BOULDER AT 6.70 FEET	SPT 4	71	49-50/2"		
10		SPT 5	90	20-22-24-25 (46)		
	(SM) BROWN LOOSE SILTY SAND, MOIST TO WET					
15		SPT 6	75	9-3-2-2 (5)		
20		SPT 7	75	2-3-3-5 (6)		



Bottom of borehole at 20.0 feet.

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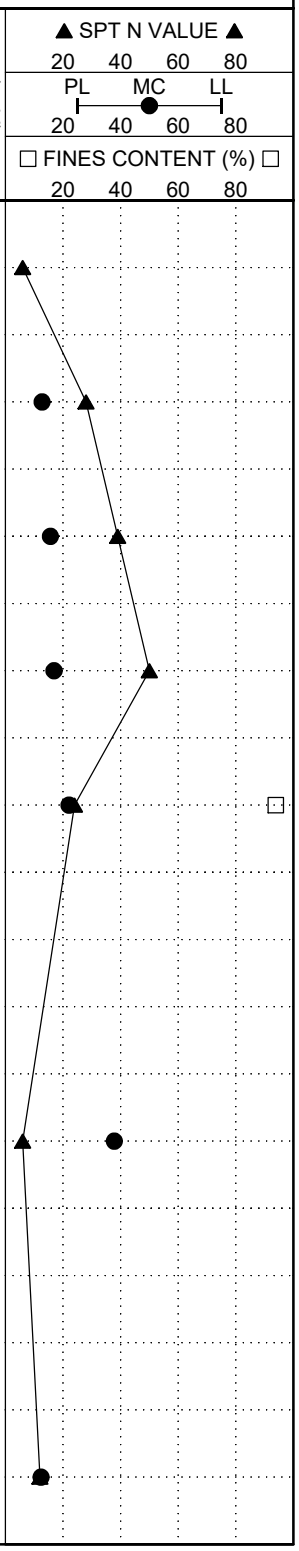
6901 Herman Road
Syracuse, NY 13209
315-638-2706

BORING NUMBER B-3

CLIENT TERRY HORST LANDSCAPE ARCHITECTURE
PROJECT NAME ROME BUSINESS PARK
PROJECT NUMBER 2020-033
PROJECT LOCATION ROME, NEW YORK
DATE STARTED 2/24/20 **COMPLETED** 2/24/20
GROUND ELEVATION 474 ft **HOLE SIZE** 8"
DRILLING CONTRACTOR KENNEY GEOTECHNICAL SERVICES
GROUND WATER LEVELS:
DRILLING METHOD 3.25" HSA
AT TIME OF DRILLING 14.00 ft / Elev 460.00 ft
LOGGED BY RS **CHECKED BY** CMK
AT END OF DRILLING 19.00 ft / Elev 455.00 ft
NOTES
AFTER DRILLING 8.50 ft / Elev 465.50 ft : CAVED TO 9.00 FEET

DEPTH (ft)	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	VOC (ppm)
0	TOPSOIL, MOIST					
	(SW) BROWN LOOSE WELL-GRADED SAND, MOIST	SPT 1	75	4-3-3-9 (6)		
	(SW) BROWN MEDIUM DENSE WELL-GRADED SAND, MOIST	SPT 2	50	12-12-16-25 (28)		
5	(SW) BROWN DENSE WELL-GRADED SAND, MOIST	SPT 3	90	19-19-20-21 (39)		
		SPT 4	75	24-25-25-19 (50)		
	(ML) BROWN MEDIUM DENSE SILT, MOIST	SPT 5	90	14-12-12-15 (24)		
10						
	(SM) BROWN LOOSE SILTY SAND, WET					
		SPT 6	75	3-3-3-3 (6)		
15						
	(SM) BROWN MEDIUM DENSE SILTY SAND WITH GRAVEL, WET					
		SPT 7	75	4-5-7-10 (12)		
20						



Bottom of borehole at 20.0 feet.

Kenney Geotechnical Engineering Services, PLLC
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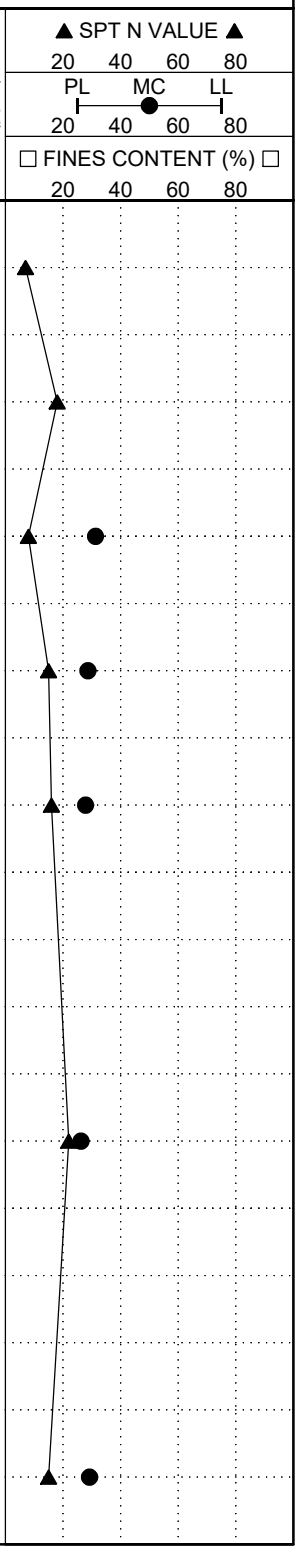
BORING NUMBER B-4

CLIENT TERRY HORST LANDSCAPE ARCHITECTURE
PROJECT NAME ROME BUSINESS PARK
PROJECT NUMBER 2020-033
PROJECT LOCATION ROME, NEW YORK
DATE STARTED 2/24/20 **COMPLETED** 2/24/20
GROUND ELEVATION 473 ft **HOLE SIZE** 8"
DRILLING CONTRACTOR KENNEY GEOTECHNICAL SERVICES
GROUND WATER LEVELS:
DRILLING METHOD 3.25" HSA
AT TIME OF DRILLING 14.00 ft / Elev 459.00 ft
LOGGED BY RS **CHECKED BY** CMK
AT END OF DRILLING 11.50 ft / Elev 461.50 ft
NOTES
AFTER DRILLING --- DRY: CAVED TO 9.00 FEET

DEPTH (ft)	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	VOC (ppm)
0	TOPSOIL, MOIST					
	(SM) BROWN LOOSE SILTY SAND, MOIST	SPT 1	75	2-2-5-10 (7)		
	(SM) BROWN MEDIUM DENSE SILTY SAND, MOIST	SPT 2	80	7-9-9-8 (18)		
5	(SM) BROWN LOOSE SILTY SAND, MOIST	SPT 3	75	2-4-4-3 (8)		
	(SM) BROWN MEDIUM DENSE SILTY SAND, MOIST TO WET	SPT 4	100	5-7-8-10 (15)		
10		SPT 5	100	6-8-8-11 (16)		
15		SPT 6	100	10-11-11-15 (22)		
20		SPT 7	100	7-8-7-17 (15)		



Bottom of borehole at 20.0 feet.

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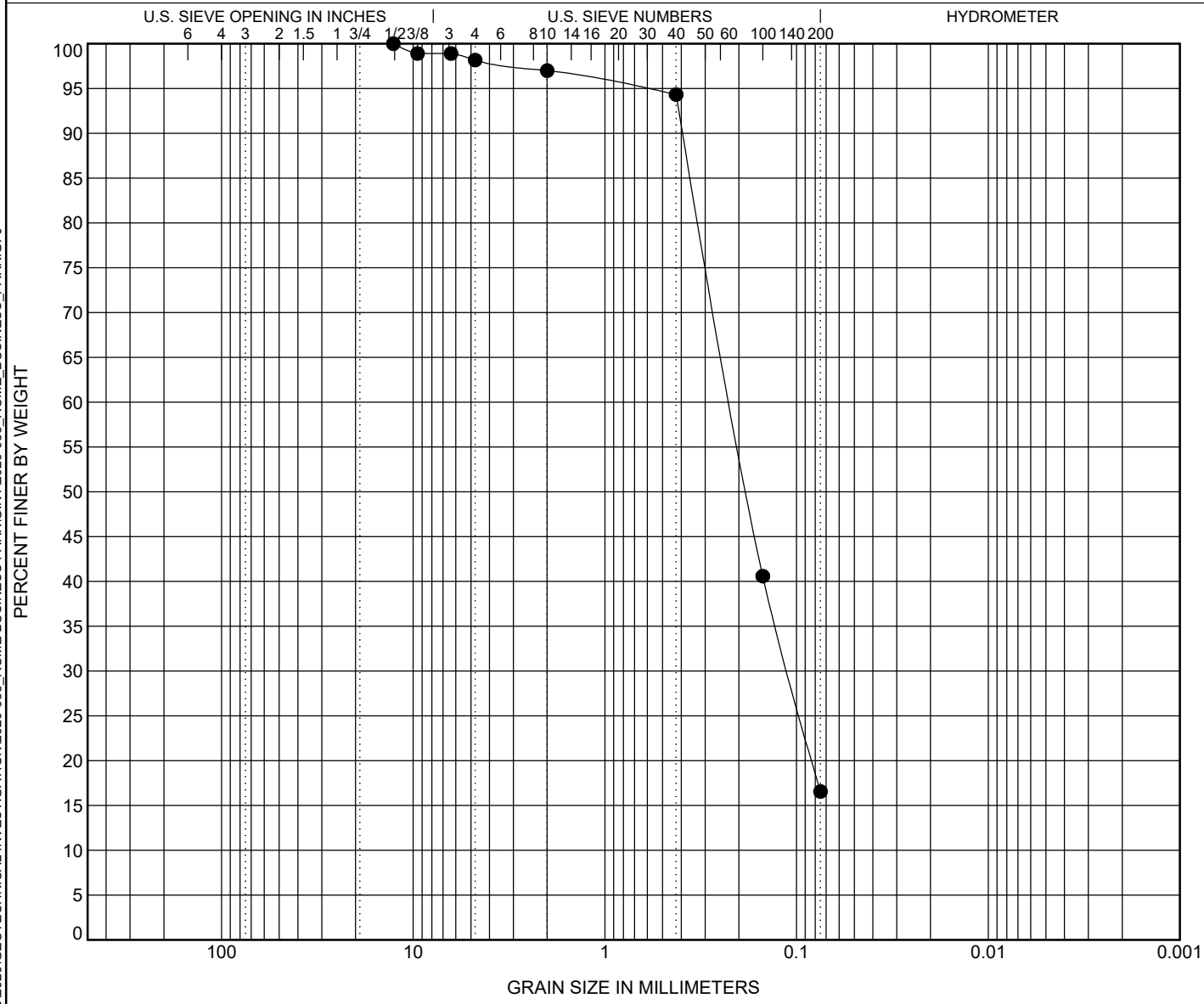
GRAIN SIZE DISTRIBUTION

CLIENT TERRY HORST LANDSCAPE ARCHITECTURE **PROJECT NAME** ROME BUSINESS PARK

PROJECT NUMBER 2020-033 **PROJECT LOCATION** ROME, NEW YORK



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen Identification		Classification	LL	PL	PI	Cc	Cu
● B-1	5.0						
⊠							
▲							
★							
⊙							

Specimen Identification		D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● B-1	5.0	12.7	0.219	0.111		1.8	81.6	16.6	
⊠									
▲									
★									
⊙									

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GRAIN SIZE DISTRIBUTION

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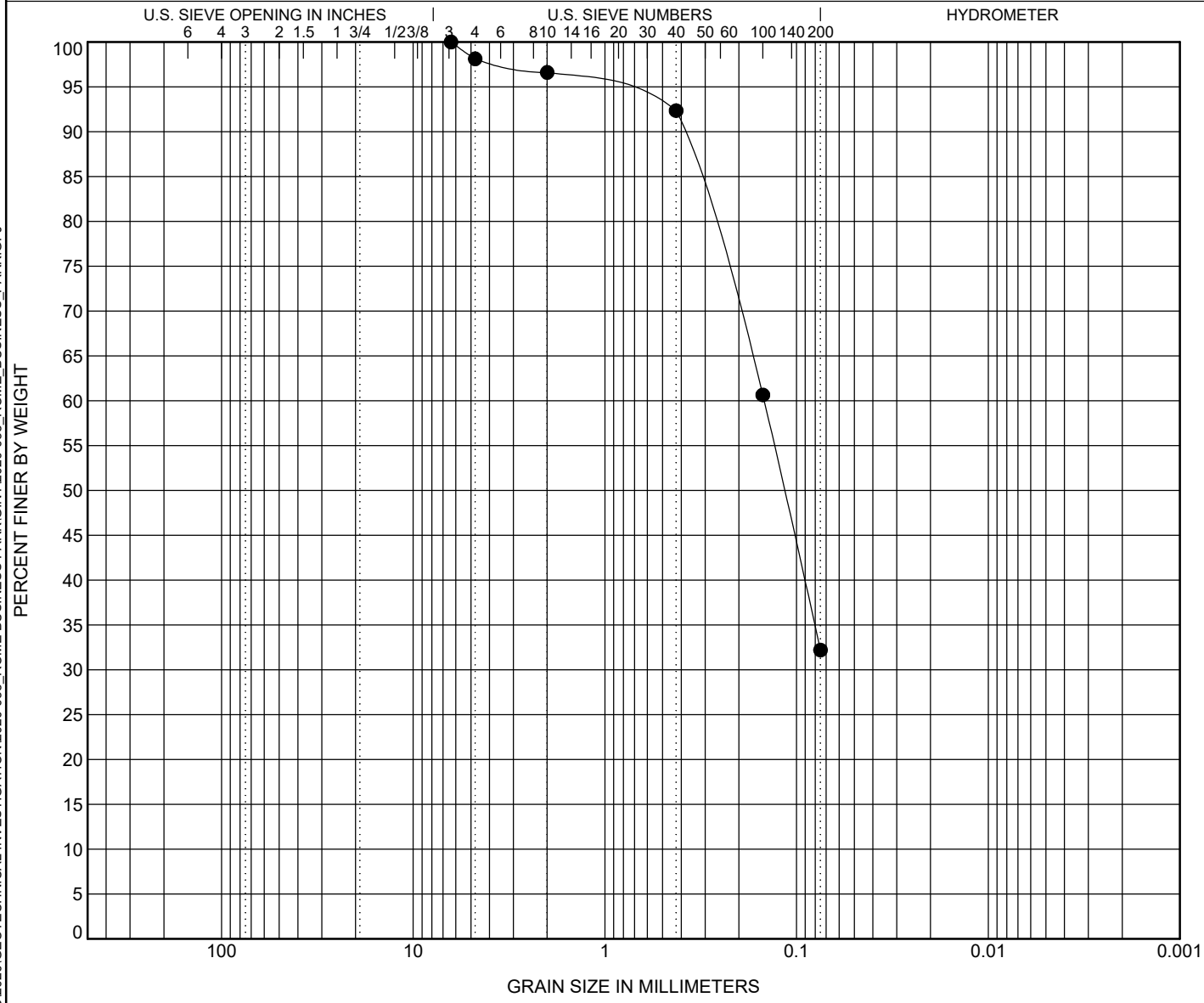
PROJECT NUMBER 2020-033 **PROJECT LOCATION** ROME, NEW YORK



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen Identification		Classification	LL	PL	PI	Cc	Cu
● B-2	7.0						
⊠							
▲							
★							
⊙							

Specimen Identification		D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● B-2	7.0	6.35	0.148			1.9	65.9	32.2	
⊠									
▲									
★									
⊙									

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GRAIN SIZE DISTRIBUTION

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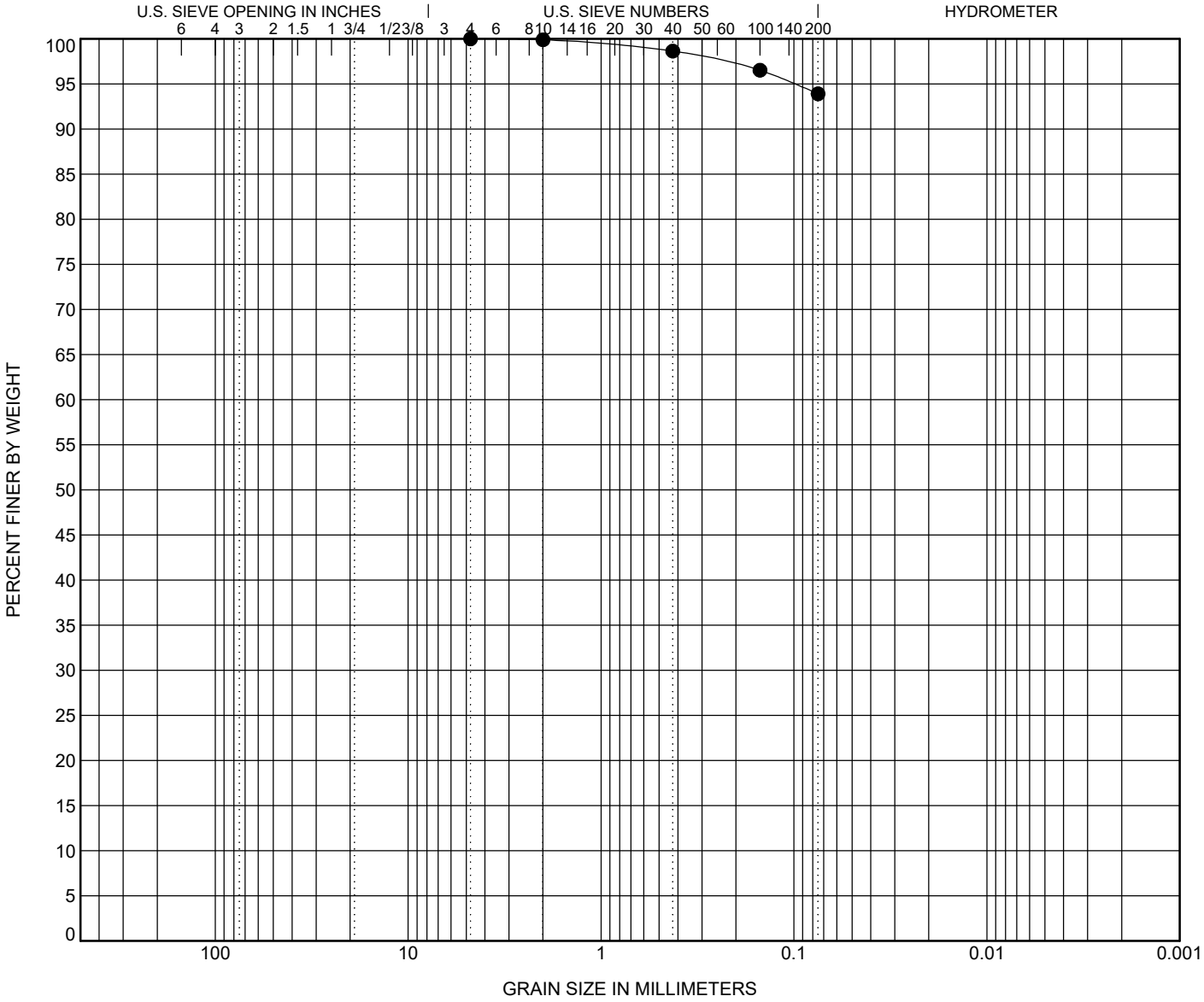
PROJECT NUMBER 2020-033 **PROJECT LOCATION** ROME, NEW YORK



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen Identification		Classification	LL	PL	PI	Cc	Cu
● B-3	9.0						
⊠							
▲							
★							
⊙							

Specimen Identification		D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● B-3	9.0	**4.75**				**0.0**	**6.1**	**93.9**	
⊠									
▲									
★									
⊙									

Kenney Geotechnical Engineering Services, PLLC
Office: 6901 Herman Road, Syracuse, NY 13209
Mail :P.O. Box 117 Warners, NY 13164
Phone: (315) 638-2706 Fax: (315) 638-1544

Kenney Geotechnical Services

INFILTRATION TESTING LOG						
PROJECT:	**Rome Business Park**					
PRESOAK:	2/24/2020		WEATHER:	Clear		
TEST:	2/27/2020		WEATHER:	Snow		
PERSONNEL:	MM		LOCATION:	**IT-1**		
TEST TYPE:	4" PVC AT 5'					
SOIL CONDITIONS:	Silty Sand					
RUN #	1	2	3	4	5	6
RATE (INCH/HOUR)	24	24	24			
STABILIZED (INCH/HR)	**24**					
NOTES:						

INFILTRATION TESTING LOG						
PROJECT:	**Rome Business Park**					
PRESOAK:	2/24/2020		WEATHER:	Clear		
TEST:	2/27/2020		WEATHER:	Snow		
PERSONNEL:	MM		LOCATION:	**IT-2**		
TEST TYPE:	4" PVC AT 5'					
SOIL CONDITIONS:	Well- Graded Sand					
RUN #	1	2	3	4	5	6
RATE (INCH/HOUR)	24	24	24			
STABILIZED (INCH/HR)	**24**					
NOTES:						