REPORT

16-1136 S
Addendum No. 1

December 20, 2019

Additional Explorations and Geotechnical Services

Proposed Medical Office building
Congress Street
Portland, Maine

S.W.COLE ENGINEERING, INC.

- *Geotechnical Engineering*
- *Construction Materials Testing and Special Inspections*
- *GeoEnvironmental Services*
- *Test Boring Explorations*

www.swcole.com

Prepared For:
Maine Medical Center
Attention: Dennis Morelli, AIA – Director of Facilities Development
22 Bramhall Street
Portland, Maine 04102

Prepared By:
S. W. Cole Engineering, Inc.
286 Portland Road
Gray, Maine 04039
T: 207-657-2866

TABLE OF CONTENTS

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December 20, 2019

Maine Medical Center
Attention: Dennis Morelli, AIA – Director of Facilities Development
22 Bramhall Street
Portland, ME 04102

Subject: Addendum No. 1
Additional Explorations and Geotechnical Services
Proposed Congress Street Medical Office Building
Maine Medical Center Facility
Portland, Maine

Dear Dennis:

In accordance with our contract Addendum No. 1, dated September 21, 2017, we have performed additional subsurface explorations for the subject project. This report summarizes our findings and its contents are subject to the limitations set forth in Appendix A.

1.0 INTRODUCTION

1.1 Scope and Purpose

The purpose of our geotechnical services was to perform additional test boring explorations at the site in order to obtain subsurface soils information, perform laboratory soils testing and update the subsurface soil profiles provided in our February 20, 2017 report. Our scope of services included test boring explorations, geotechnical laboratory testing and preparation of generalized subsurface profiles. The test boring logs, laboratory testing results and updated soil profiles were provided on January 24, 2018. This report summarizes the information already submitted.

1.2 Site and Proposed Construction

The site of the proposed Congress Street Medical Office Building (CSMOB) is situated at the easterly corner of the intersection of Congress and Gilman Streets. We understand the existing multi-level parking garage will be razed in favor of the proposed construction. We understand the CSMOB will have a wedge-shaped footprint with sidewalls on the order of 350 feet along Congress Street, 165 feet along Gilman Street and about 90 feet on the easterly end. We understand the proposed structure will be multi-story and the lowest level will be at about elevation 38 feet.

General existing site conditions are shown on the "Exploration Location Plan" attached in Appendix B.

2.0 EXPLORATION AND TESTING

2.1.1 Current Explorations

Fifteen test borings (B-17-1 through B-17-15) were made at the site during the period of October 31, 2017 through November 8, 2017. Borings B-17-1 through B-17-8 were made outside the existing parking garage on the northwesterly side of the site. Borings B-17-9 through B-17-15 were made inside of the existing parking garage.

The outside test borings were made by S. W. Cole Explorations and the inside test borings were made by New England Boring Contractors, Inc.; both under subcontract to S. W. Cole Engineering, Inc. (S.W.COLE). The inside test borings were made using low headroom drilling equipment. The exploration locations were selected by Simpson Gumpertz & Heger (SGH) and located by S.W.COLE based on measurements. Some of the borings were shifted from the originally proposed locations due to existing subsurface utilities or site obstructions.

The approximate locations of the explorations are shown on the "Exploration Location Plan" attached in Appendix B. Logs of the explorations and a key to the notes and symbols used on the logs are attached in Appendix C. The ground surface elevations at the outside borings were estimated based on the topographic information shown on the "Exploration Location Plan". Slab elevations at the inside borings were estimated based on the exterior topographic information and measurements from site features.

2.1.2 Prior Explorations

Nine test borings (B-16-1 through B-16-9) were made from November 21 through December 9, 2016 by S. W. Cole Explorations, Inc. for the formerly proposed Parking Garage between Congress and A Streets and the proposed Congress Street MOB. Borings B-16-1 throughB-16-4 were made for the formerly proposed parking garage on the westerly side of Gilman Street. A separate draft report was provided for this site, but the boring logs are included in this report for reference. Borings B-16-5 through B-16-9 were made for the proposed Medical Office Building site. These borings were made outside the footprint of the existing garage area. Due to the low head room in the garage, no borings were made within the garage footprint during the 2016 investigation. The exploration locations were selected by SGH based on concept information and located by S. W. Cole Engineering (S.W.COLE) using measurements and considering available locations for drilling. Logs for test borings B-16-1 through B-16-9 are attached in Appendix C. Updated piezometer readings are also noted on these logs.

Several test borings were made for the existing newer parking garage (circa 2002). Two borings (B-96-15 and B-96-16) were made near the easterly side of the proposed Medical Office Building site. Additionally boring B-02-1, made in the northwest corner of the existing Central Utility Plant is shown on the exploration location plan. The approximate locations of these test borings are shown on the Exploration Location Plan in Appendix B. The logs for these three borings are attached in Appendix C. Logs of other borings and test pits made for nearby sites can be found in previous geotechnical reports.

2.2 Field Testing

The test borings were drilled using hollow-stem auger and cased, wash-boring techniques. The soils were sampled at 2 to 5 foot intervals using a split spoon sampler and Standard Penetration Testing (SPT) methods. SPT blow counts are shown on the logs. Pocket Penetrometer Tests (PPT) were performed where stiffer cohesive soils were encountered. SPT blow counts and PPT results are shown on the logs.

2.3 Laboratory Testing

Soil samples obtained from the recent explorations were returned to our laboratory for further classification and testing. Moisture content test results are noted on the logs. The results of soil gradation tests are attached in Appendix D.

3.0 SUBSURFACE CONDITIONS

3.1 Soil and Bedrock

Below the existing concrete pavement and topsoil, the recent explorations generally encountered a soil profile generally consisting of granular fill overlying outwash sands, overlying layered glaciomarine silty clay and sands with gravel overlying glacial till. The principal strata encountered at borings B-17-1 through B-17-9 are summarized below. The soils encountered in the 2017 boring locations were generally consistent with the findings at the 2016 boring locations. Generalized subsurface soil profiles A through J were updated to include these recent test borings and are attached in Appendix B. Refer to the attached boring logs in Appendix C for more detailed subsurface information. Not all the strata were encountered at each of the explorations.

Topsoil: Borings B-17-1 through B-17-8, made outside the existing parking garage, encountered about 6 inches of topsoil.

Pavement: Borings B-17-9 through B-17-15, made inside the existing parking garage, encountered about 5 to 7 inches of concrete pavement.

Uncontrolled Fill: Below the topsoil or concrete pavement, the explorations generally encountered loose to medium dense granular fill varying from several feet thick to about 10 feet in thickness. The fills appeared thickest at borings B-17-12 through B-17-15, made inside the parking garage.

Outwash Sands and Glaciomarine Clays: Below the fill, the explorations encountered layered soils generally consisting of loose to medium dense silty sands and varved silts, sands and clays, stiffer brown silty clay with sand layers, medium to soft gray silty clay and loose to medium dense sands with varying amounts of silt, gravel and clay. The layered sands, silts, clays and sands with clay, silt and gravel extend to depths varying from about 28 to 43 feet below the ground surface or concrete pavement at these borings.

Glacial Till: Below the layered soils of outwash sands and glaciomarine clays, the explorations encountered medium dense to very dense glacial till generally consisting of sand and silt with varying amounts of gravel with zones having a trace to some clay. The depths to glacial till varied from about 28 to 43 feet below the surface at these borings.

Cobbles were encountered occasionally during drilling. The glacial till may also contain some boulders. These borings were terminated in dense to very dense glacial till at depths varying from about 32 to 52 feet below the existing surface.

Refusal Surfaces: Refusal surfaces were not encountered within the depths explored at these borings.

Refer to the attached logs for more detailed subsurface information.

3.2 Groundwater

The soils were generally moist from the ground surface. The explorations were cased wash-borings which water was introduced obscuring groundwater observations during drilling. In general, it appears the soils were wet to saturated at depths of about 5 to 15 feet at most of the borings, but deeper at several of the borings. Groundwater piezometers were installed at prior borings B-16-8 and B-16-9 during the 2016 investigation. Depths to water in the piezometers were measured soon after installation in 2016 and early 2017 (see exploration logs for water depth information at that time). The water depths were measured again during this investigation on December 8, 2017. The depths to water were measured at about 20 and 11 feet below the ground surface at these two borings, respectively.

It should be noted that the groundwater depth measured in the piezometer at boring B-16-9 rose substantially from a depth of about 31 feet up to about 11 feet below the concrete surface. Based on the moisture content test results, the layered soils including the silty clays are saturated with depth and the underlying glacial till is at or near saturation.

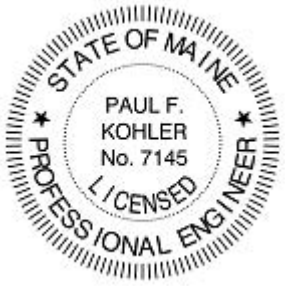
Long-term groundwater levels were not determined. It should be anticipated that groundwater will be perched atop silty and clayey soils as well as the underlying glacial till. Groundwater levels should be expected to fluctuate, particularly in response to periods of snowmelt and precipitation, as well as changes in site use.

5.0 CLOSURE

It has been a pleasure to be of assistance to you with this phase of the project. We look forward to working with you during future phases.

Sincerely,

S. W. Cole Engineering, Inc.



Paul F. Kohler, P.E.
Senior Geotechnical Engineer

PFK:tjb

APPENDIX A
Limitations

This report has been prepared for the exclusive use of Maine Medical Center for specific application to the proposed Medical Office Building on Congress Street in Portland, Maine. Information provided in this report from the formerly proposed Gilman Street Parking Garage site between Congress and A Streets or other past projects is included for informational purposes. S. W. Cole Engineering, Inc. (S.W.COLE) has endeavored to conduct our services in accordance with generally accepted soil and foundation engineering practices. No warranty, expressed or implied, is made.

The soil profiles described in the report are intended to convey general trends in subsurface conditions. The boundaries between strata are approximate and are based upon interpretation of exploration data and samples.

The analyses performed during this investigation and recommendations presented in this report are based in part upon the data obtained from subsurface explorations made at the site. Variations in subsurface conditions may occur between explorations and may not become evident until construction. If variations in subsurface conditions become evident after submission of this report, it will be necessary to evaluate their nature and to review the recommendations of this report.

Observations have been made during exploration work to assess site groundwater levels. Fluctuations in water levels will occur due to variations in rainfall, temperature, and other factors.

S.W.COLE's scope of services has not included the investigation, detection, or prevention of any Biological Pollutants at the project site or in any existing or proposed structure at the site. The term "Biological Pollutants" includes, but is not limited to, molds, fungi, spores, bacteria, and viruses, and the byproducts of any such biological organisms.

Recommendations contained in this report are based substantially upon information provided by others regarding the proposed project. In the event that any changes are made in the design, nature, or location of the proposed project, S.W.COLE should review such changes as they relate to analyses associated with this report. Recommendations contained in this report shall not be considered valid unless the changes are reviewed by S.W.COLE.

APPENDIX B

Figures

CONGRESS STREET
(FKA MAINE STREET)
76 FEET WIDE

CONGRESS STREET
(FKA MAINE STREET)
66 FEET WIDE

VALLEY STREET
(FORMERLY B STREET)

GILMAN STREET
60 FEET WIDE

A STREET

CRESCENT STREET

BRASS PLUG
#PLS2239

8" x 8" GRANITE MONUMENT WITH BRASS PLUG IN HANDHOLE

8" x 8" GRANITE MONUMENT WITH BRASS PLUG (HELD AS 3 FOOT OFFSET)

N66°22'23"E 89.56'

N63°11'56"E 91.95'

N71°32'36"E 70.95'

S63°11'56"W 44.95'

S69°22'22"W 150.85'

S12°34'47"E 285.10'

N20°41'10"W 285.10'

1/2" DRILL HOLE

SEE NOTE 8

1" IRON PIPE FLUSH

SEE NOTE 7

5/8" REBAR 1" HIGH

5/8" REBAR FLUSH W/ WORN ALUMIN. CAP

EXISTING BUILDING

EXISTING PARKING GARAGE

MAINE MEDICAL CENTER

COMMUNICATION BOX ON CONC. PAD

GRANITE BENCH / RETAINING WALL

WOOD GUARDRAIL

CONC. PAD

ELEVATOR

MISC. LANDSCAPE

TRANSFORMER PAD

METAL BULKHEAD

REMAINS OF PAVED PARKING

REMAINS OF OLD CONCRETE CENTER BLOCK WALL

REMAINS OF CONC. PAD

A/C UNIT

OVERHANG

COLUMNS (TYPICAL) SECOND FLOOR

THIRD FLOOR

CONC. ENTRANCE / EXIT TO PARKING GARAGE

RAMP UP

RAMP DOWN

ELEVATOR / STAIRWELL

APPROXIMATE LOCATION OF EXPOSED FOUNDATION WALL

STAIRWAY

CONC. RETAINING WALL

CRUSHED STONE

TRANSFORMER PAD

CENTRAL UTILITY PLANT

BOLLARD (TYPICAL)

CONC PAD WITH GAS VALVE AND METER

6" x 6" GRANITE MONUMENT FLUSH

PAVED APRON

PAVED WALK

LAWN

B-16-1 B-16-2 B-16-3 B-16-4 B-16-5 B-16-6 B-16-7 B-16-8 (MW) B-16-9 (MW)

B-17-1 B-17-2 B-17-3 B-17-4 B-17-5 B-17-6 B-17-7 B-17-8 B-17-9 B-17-10 B-17-11 B-17-12 B-17-13 B-17-14 B-17-15

B-96-3 B-96-14 B-96-15 B-96-16

TP-04-1 TP-04-5 TP-04-7 TP-04-8

B-02-1 B-02-101 B-02-4

C 1.2 D 1.2 E 1.3 F 1.4 G 1.5 H 1.8 J 1.7 A 1.1 B 1.1

0 20 40 FEET

LEGEND:

- APPROXIMATE BORING LOCATION
- (MW) APPROXIMATE BORING LOCATION WITH PIEZOMETER INSTALLED
- APPROXIMATE HISTORIC BORING LOCATION
- APPROXIMATE HISTORIC TEST PIT LOCATION

NOTES:

1. EXPLORATION LOCATION PLAN WAS PREPARED FROM A 1"=20' SCALE PLAN OF THE SITE ENTITLED "EXISTING CONDITIONS SURVEY," PREPARED BY SEBAGO TECHNICS, DATED 10/23/2009, REVISED 12/23/2009.
2. THE BORINGS WERE LOCATED IN THE FIELD BY TAPED MEASUREMENTS FROM EXISTING SITE FEATURES.
3. THIS PLAN SHOULD BE USED IN CONJUNCTION WITH THE ASSOCIATED S. W. COLE ENGINEERING, INC. GEOTECHNICAL REPORT.
4. THE PURPOSE OF THIS PLAN IS ONLY TO DEPICT THE APPROXIMATE LOCATION OF THE EXPLORATIONS IN RELATION TO THE EXISTING CONDITIONS AND PROPOSED CONSTRUCTION AND IS NOT TO BE USED FOR CONSTRUCTION.

NO.	DATE	DESCRIPTION	BY
4	12/20/2019	ADDENDUM 1 REPORT SUBMITTAL	CEM
3	12/29/2017	ADD 2017 BORINGS, PROFILES G, H AND J, DRAFT SUBMISSION	CEM
2	02/20/2017	MEDICAL OFFICE BLDG PROFILES	CEM
1	01/12/2017	ADD GEOLOGIC PROFILE LINES	CEM
0	01/06/2017	PRELIMINARY FINDINGS SUBMISSION	CEM

S.W.COLE ENGINEERING, INC.

MAINE MEDICAL CENTER

EXPLORATION LOCATION PLAN

PROPOSED PARKING GARAGE AND
CONGRESS STREET BUILDING
GILMAN AND CONGRESS STREETS
PORTLAND, MAINE

Job No.: 16-1136 Scale: 1" = 20'
Date : 01/06/2017 Sheet: 1

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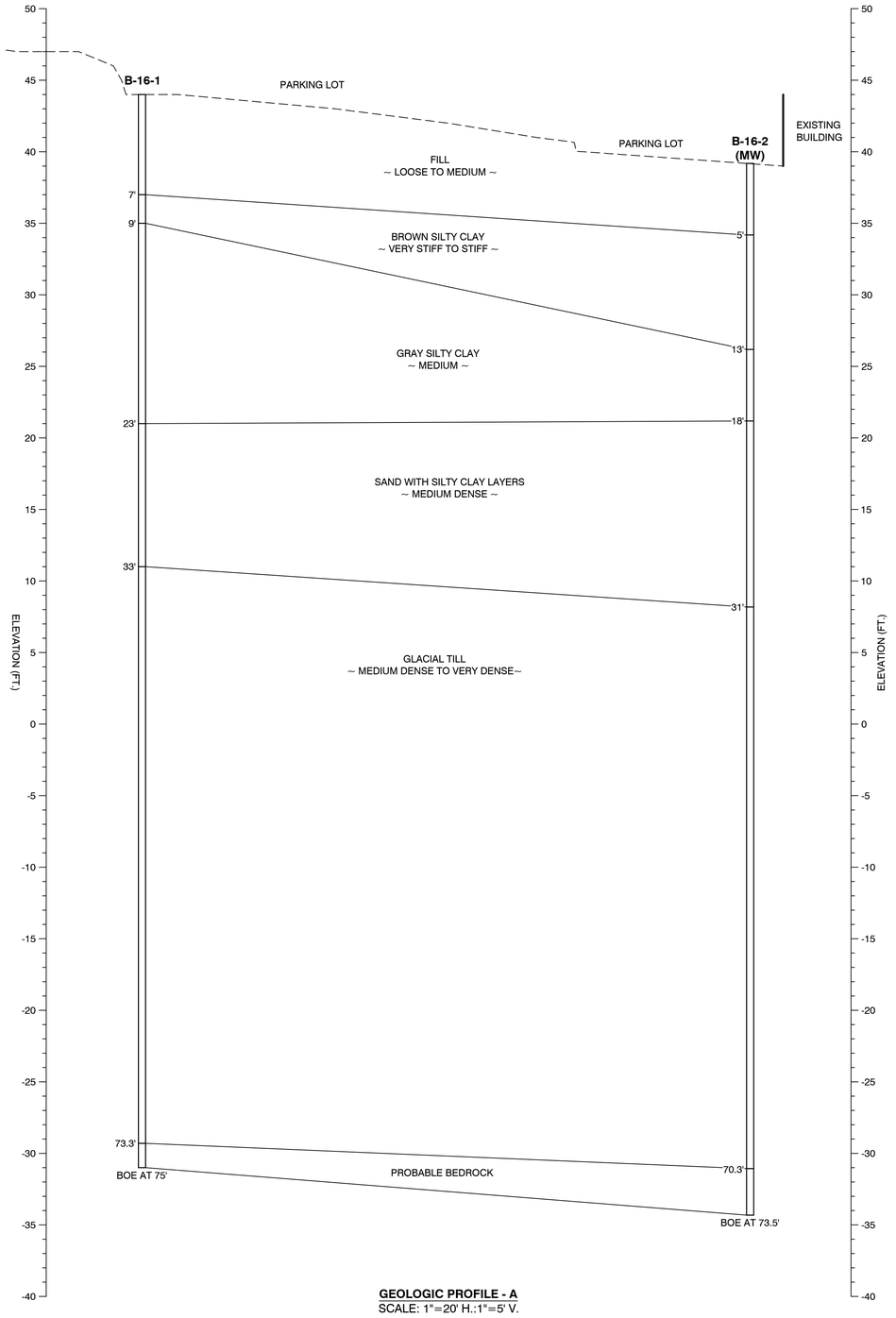

GEOLOGIC PROFILE - A
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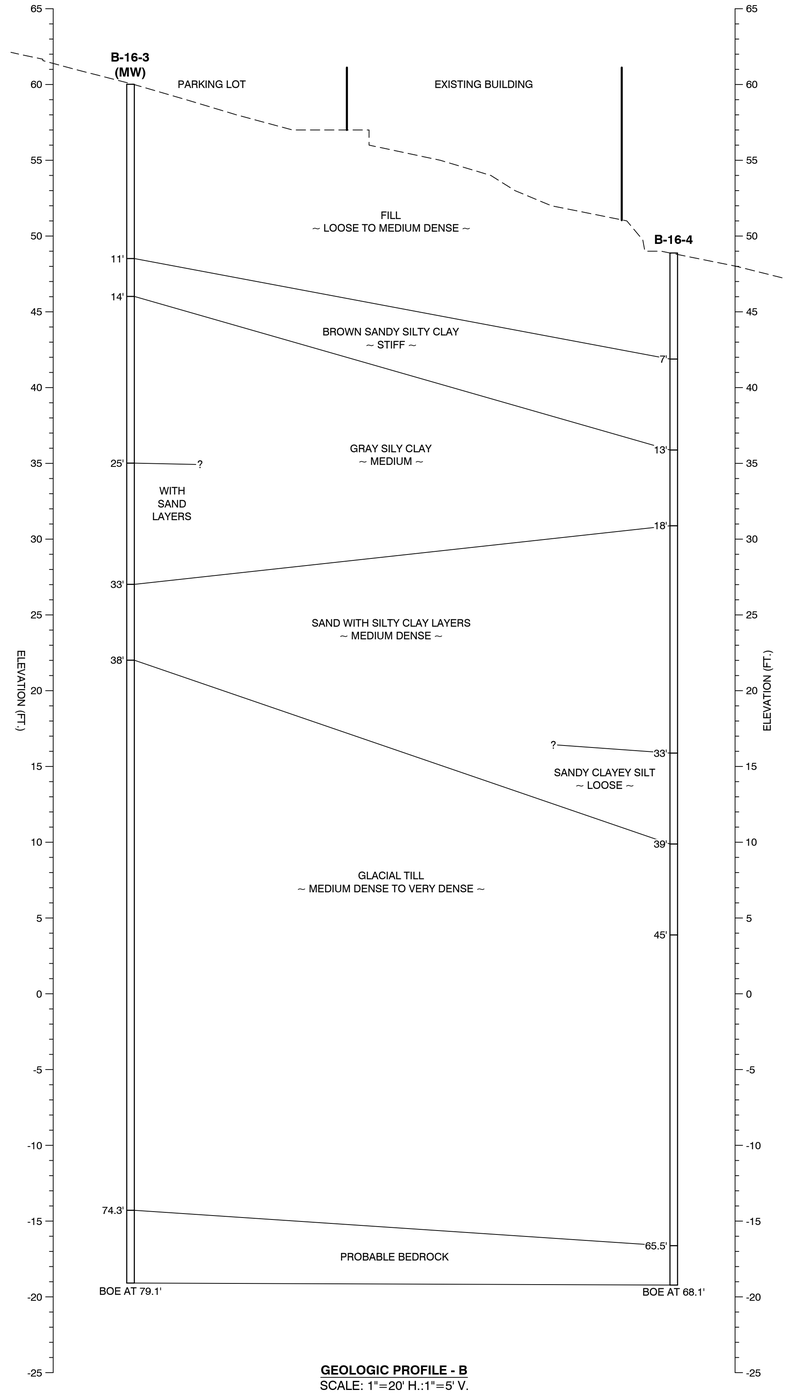

GEOLOGIC PROFILE - B
SCALE: 1"=20' H.:1"=5' V.

LEGEND

B-16-4 (MW)	BORING NUMBER PIEZOMETER INSTALLED
	APPROXIMATE EXISTING GROUND SURFACE
7'	STRATA CHANGE
SILT	STRATA DEFINITION
BOE	BOTTOM OF EXPLORATION

NOTES:

1. THE DEPTH AND THICKNESS OF THE SUBSURFACE STRATA INDICATED ON THE SECTION WERE GENERALIZED FROM AND INTERPOLATED BETWEEN EXPLORATION LOCATIONS. THE TRANSITION BETWEEN MATERIALS MAY BE MORE OR LESS GRADUAL THAN INDICATED. INFORMATION ON ACTUAL SUBSURFACE CONDITIONS EXISTS ONLY AT THE SPECIFIC LOCATIONS INDICATED AND AT THE TIME OF EXPLORATION. SEE BORING LOGS FOR MORE DETAILED INFORMATION.

NO.	DATE	DESCRIPTION	BY
2	12/20/2019	ADDENDUM 1 REPORT SUBMISSION	CEM
1	12/19/2017	DRAFT SUBMISSION	CEM
0	01/12/2017	PRELIMINARY FINDINGS SUBMISSION	CEM

S.W.COLE ENGINEERING, INC.

MAINE MEDICAL CENTER

INTERPRETIVE GEOLOGIC PROFILES A & B

PROPOSED PARKING GARAGE AND
CONGRESS STREET BUILDING
GILMAN AND CONGRESS STREETS
PORTLAND, MAINE

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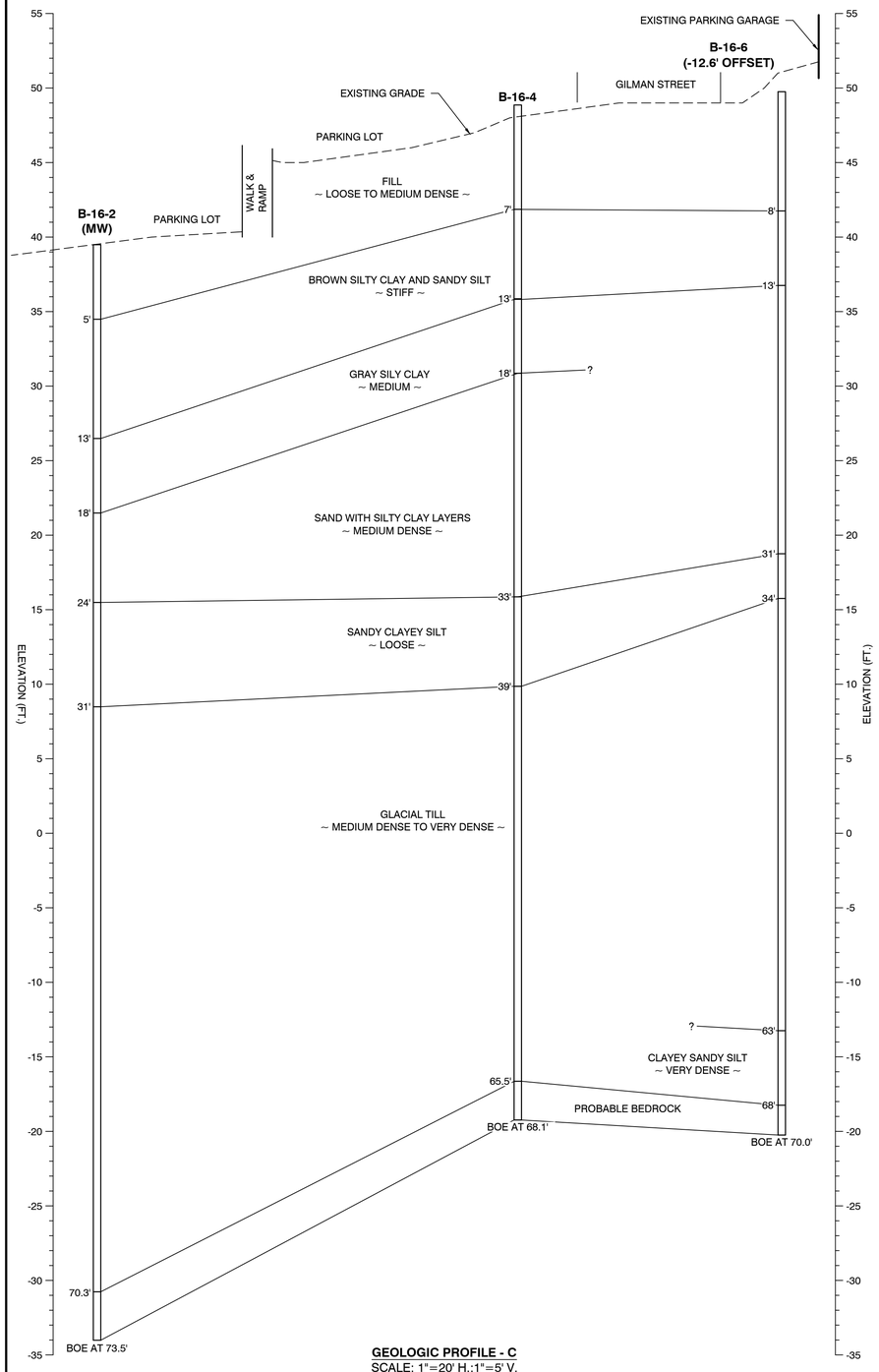

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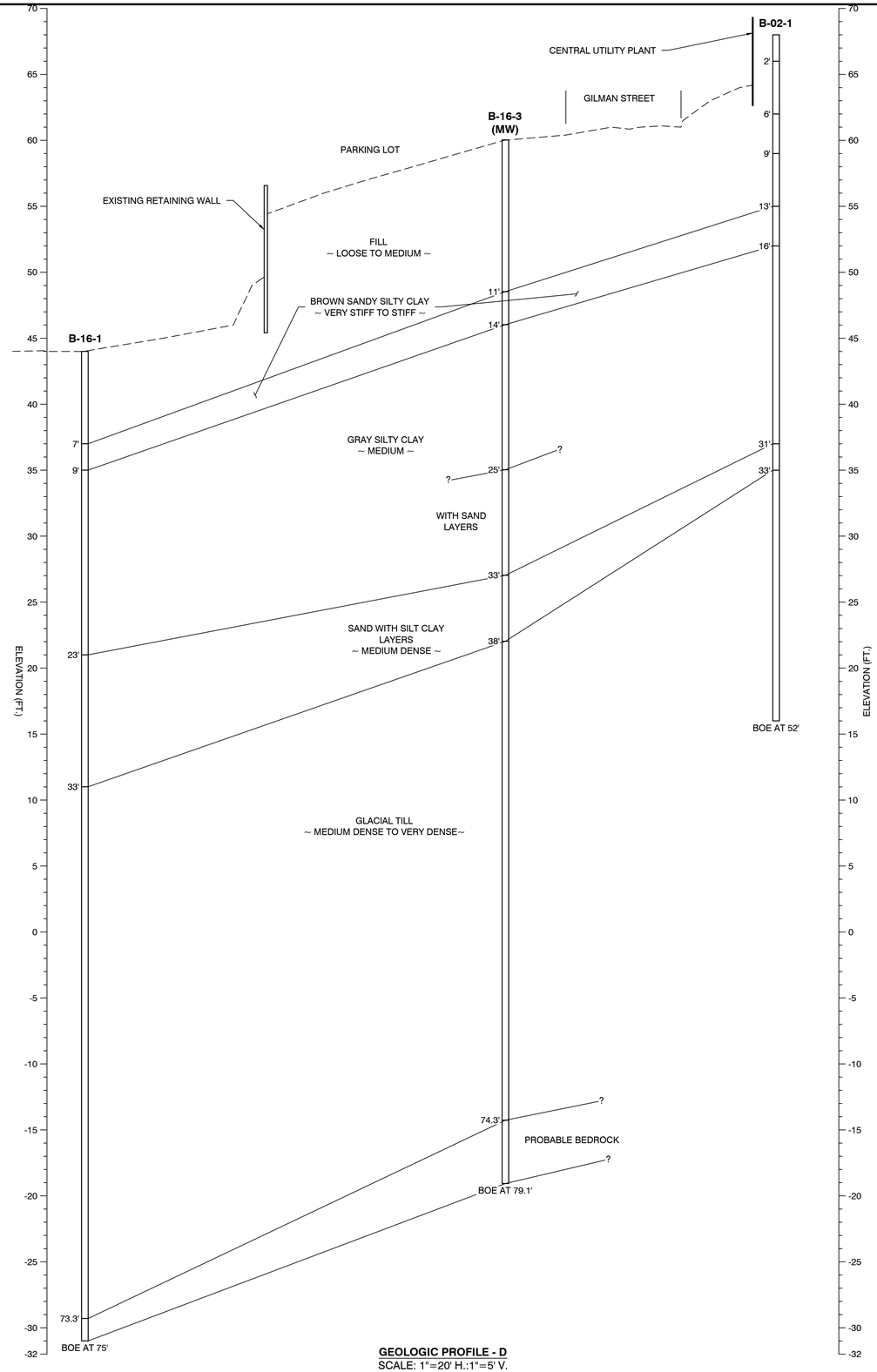

GEOLOGIC PROFILE - D
SCALE: 1"=20' H.:1"=5' V.

LEGEND

B-16-4 (MW)	BORING NUMBER PIEZOMETER INSTALLED
	APPROXIMATE EXISTING GROUND SURFACE
7'	STRATA CHANGE
SILT	STRATA DEFINITION
BOE	BOTTOM OF EXPLORATION

NOTES:

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2. THIS PROFILE SHOULD BE USED IN CONJUNCTION WITH THE ASSOCIATED S. W. COLE ENGINEERING, INC. GEOTECHINCAL REPORT AND IS NOT TO BE USED FOR CONSTRUCTION.

NO.	DATE	DESCRIPTION	BY
2	12/20/2019	ADDENDUM 1 REPORT SUBMISSION	CEM
1	12/19/2017	DRAFT SUBMISSION	CEM
0	01/12/2017	PRELIMINARY FINDINGS SUBMISSION	CEM

S.W.COLE ENGINEERING, INC.

MAINE MEDICAL CENTER

INTERPRETIVE GEOLOGIC PROFILES C & D

PROPOSED PARKING GARAGE AND
CONGRESS STREET BUILDING
GILMAN AND CONGRESS STREETS
PORTLAND, MAINE

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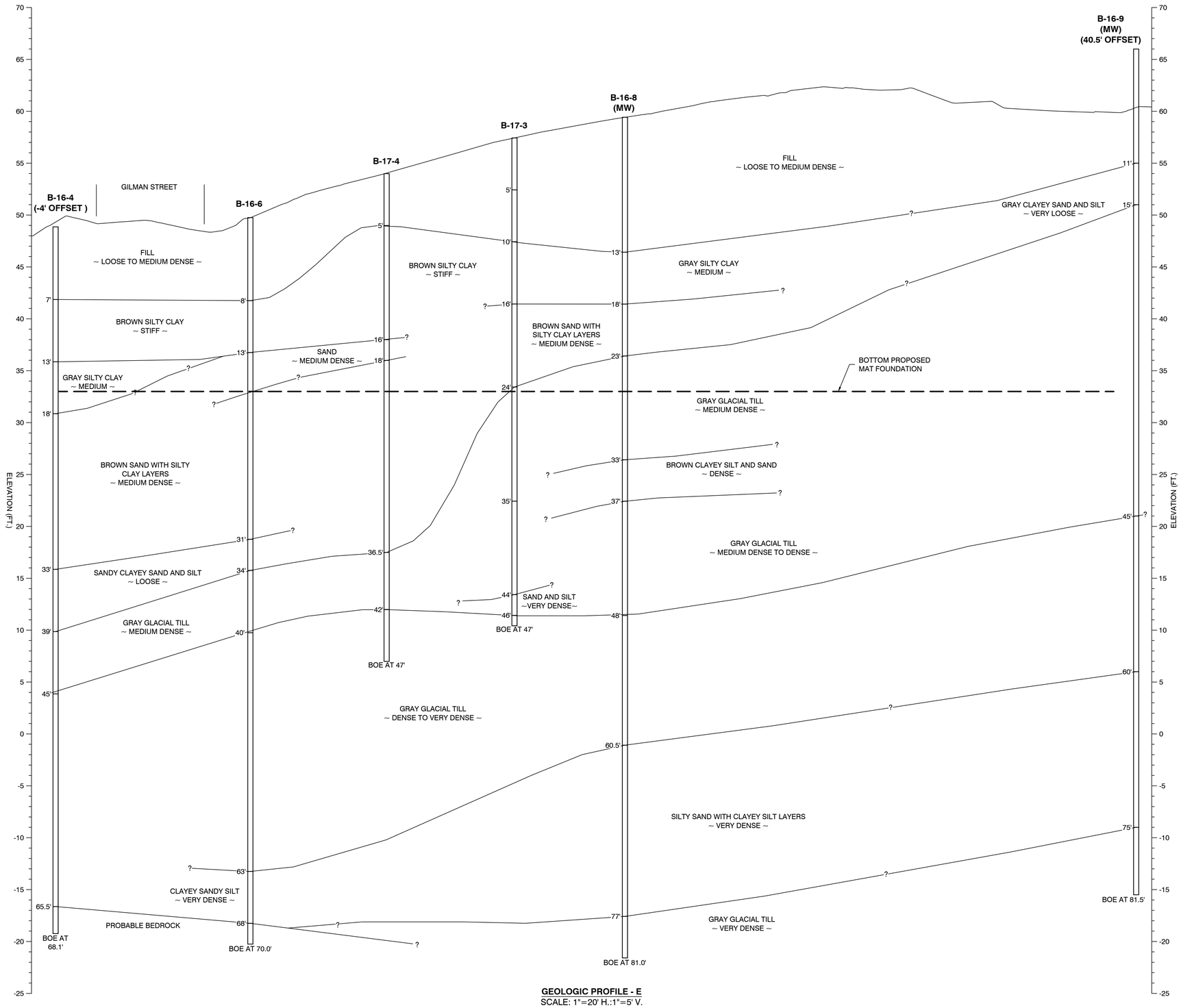

GEOLOGIC PROFILE - E
SCALE: 1"=20' H.:1"=5' V.

LEGEND

B-16-4 (MW)	BORING NUMBER PIEZOMETER INSTALLED
	APPROXIMATE EXISTING GROUND SURFACE
7'	STRATA CHANGE
SILT	STRATA DEFINITION
BOE	BOTTOM OF EXPLORATION

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NO.	DATE	DESCRIPTION	BY
2	12/20/2019	ADDENDUM 1 REPORT SUBMISSION	CEM
1	12/29/2017	ADD BORINGS B-17-3 AND B-17-4	CEM
0	02/20/2017	PRELIMINARY FINDINGS SUBMISSION	CEM

S.W.COLE ENGINEERING, INC.

MAINE MEDICAL CENTER

INTERPRETIVE GEOLOGIC PROFILE E

PROPOSED PARKING GARAGE AND
CONGRESS STREET BUILDING
GILMAN AND CONGRESS STREETS
PORTLAND, MAINE

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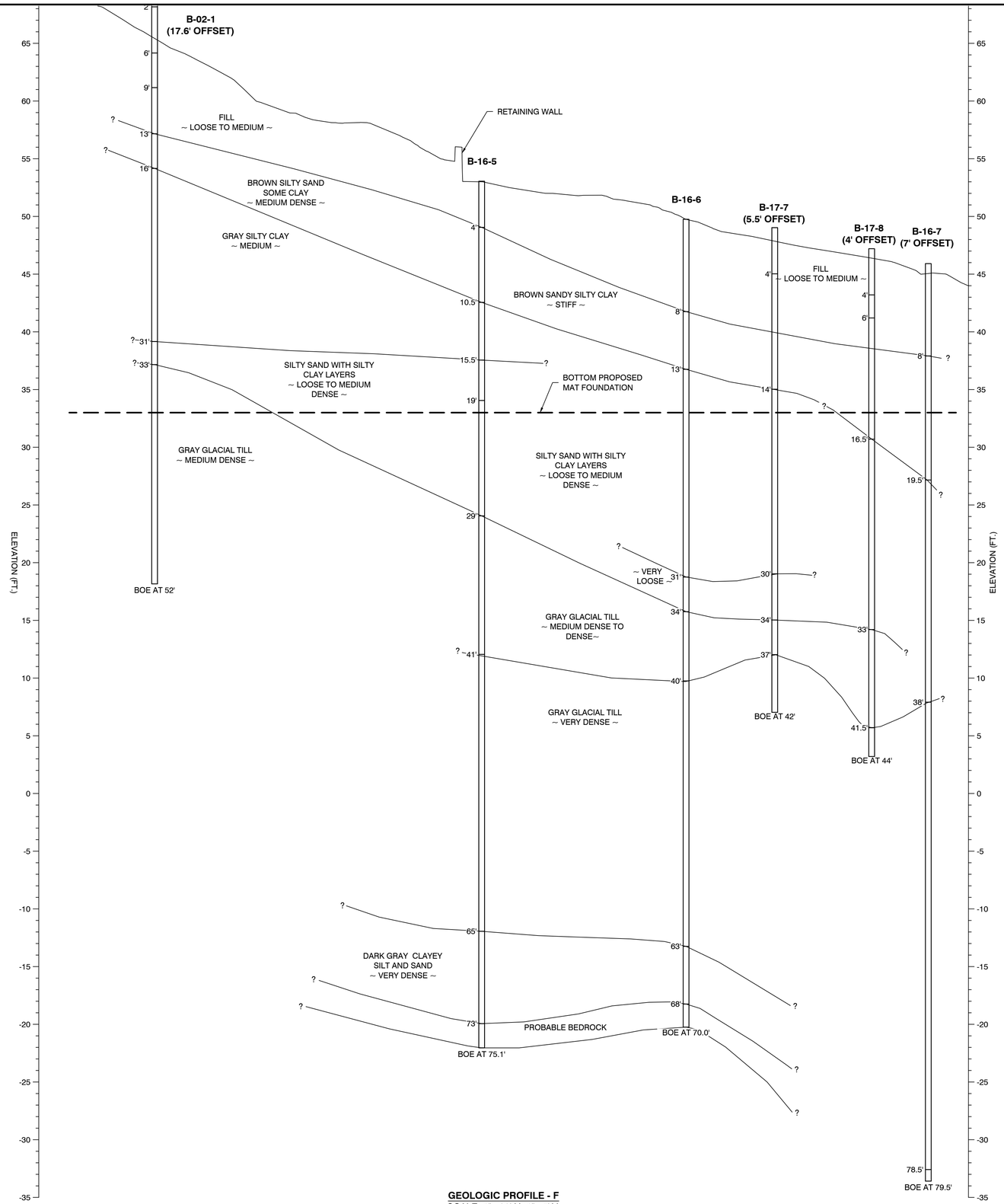

GEOLOGIC PROFILE - F
SCALE: 1"=20' H.:1"=5' V.

LEGEND

B-16-4 (MW)	BORING NUMBER PIEZOMETER INSTALLED
	APPROXIMATE EXISTING GROUND SURFACE
7'	STRATA CHANGE
SILT	STRATA DEFINITION
BOE	BOTTOM OF EXPLORATION

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2	12/20/2019	ADDENDUM 1 REPORT SUBMISSION	CEM
1	12/29/2017	ADD BORINGS B-17-7 AND B-17-8	CEM
0	02/20/2017	PRELIMINARY FINDINGS SUBMISSION	CEM

S.W.COLE ENGINEERING, INC.

MAINE MEDICAL CENTER

INTERPRETIVE GEOLOGIC PROFILE F

PROPOSED PARKING GARAGE AND
CONGRESS STREET BUILDING
GILMAN AND CONGRESS STREETS
PORTLAND, MAINE

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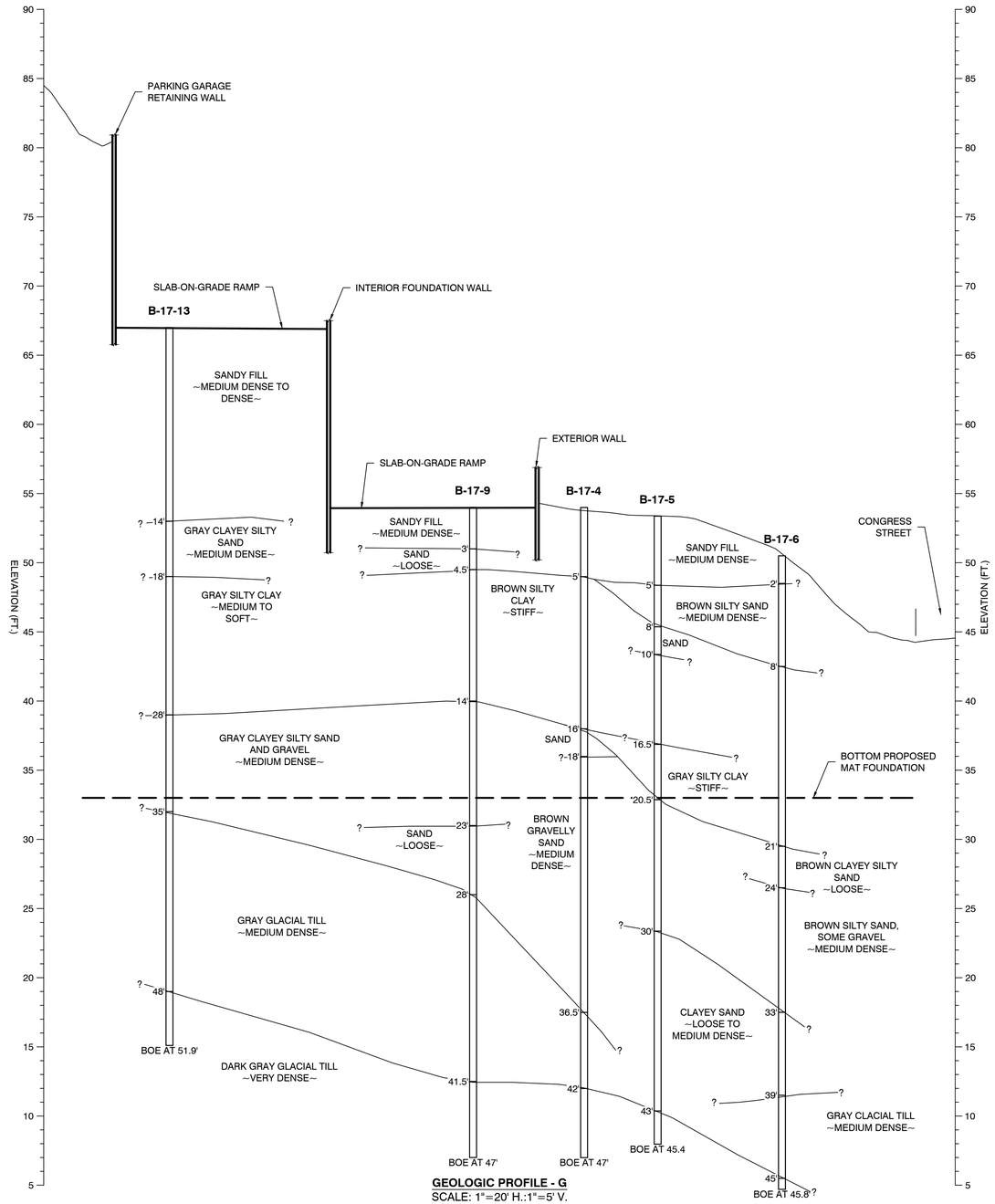

GEOLOGIC PROFILE - G
SCALE: 1"=20' H.:1"=5' V.

LEGEND

B-16-4 (MW)	BORING NUMBER PIEZOMETER INSTALLED
	APPROXIMATE EXISTING GROUND SURFACE
7'	STRATA CHANGE
SILT	STRATA DEFINITION
BOE	BOTTOM OF EXPLORATION

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S.W.COLE ENGINEERING, INC.

MAINE MEDICAL CENTER

INTERPRETIVE GEOLOGIC PROFILE G

PROPOSED PARKING GARAGE AND
CONGRESS STREET BUILDING
GILMAN AND CONGRESS STREETS
PORTLAND, MAINE

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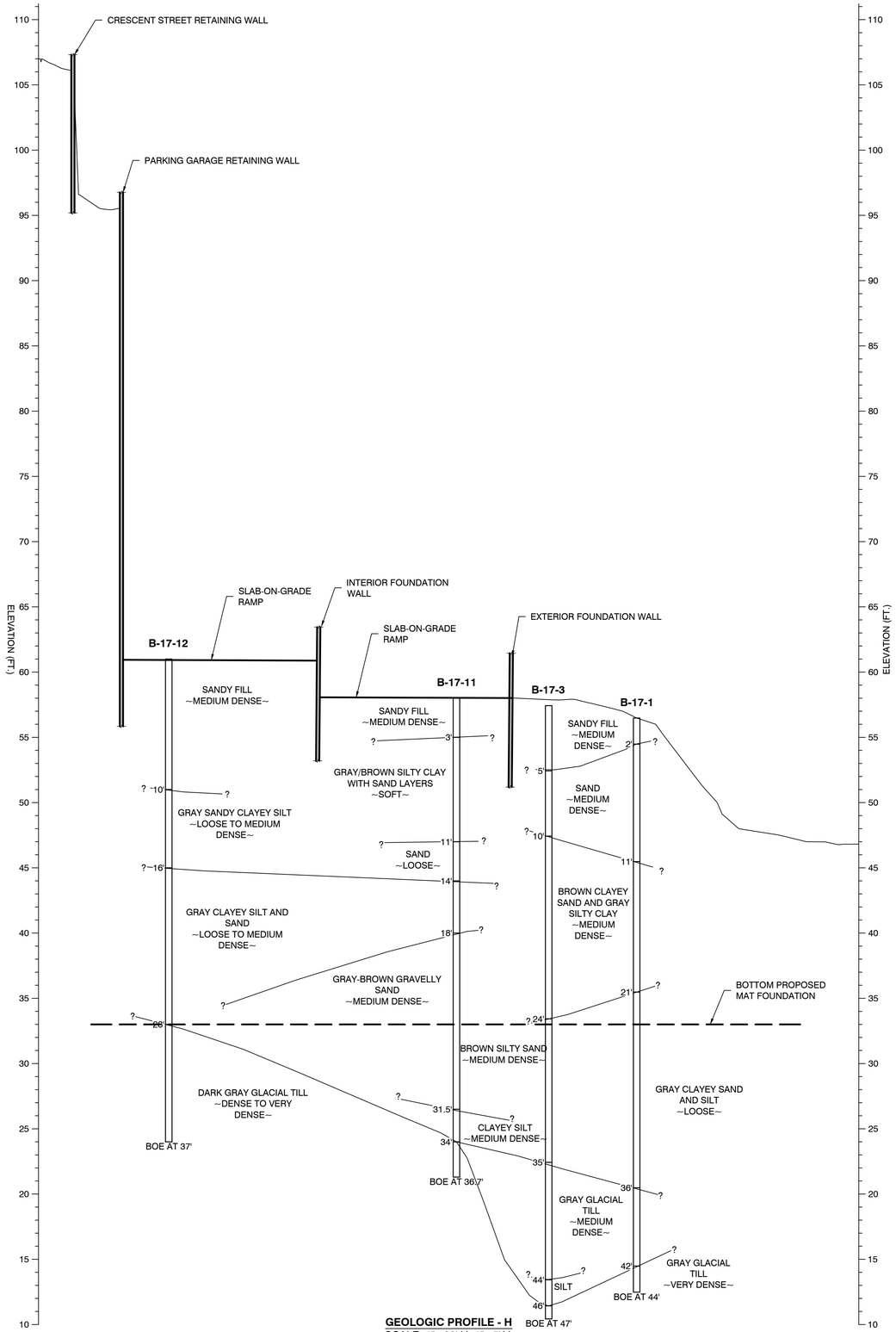


GEOLOGIC PROFILE - H
SCALE: 1"=20' H.:1"=5' V.

LEGEND

B-16-4 (MW)	BORING NUMBER PIEZOMETER INSTALLED
	APPROXIMATE EXISTING GROUND SURFACE
7'	STRATA CHANGE
SILT	STRATA DEFINITION
BOE	BOTTOM OF EXPLORATION

NOTES:

1. THE DEPTH AND THICKNESS OF THE SUBSURFACE STRATA INDICATED ON THE SECTION WERE GENERALIZED FROM AND INTERPOLATED BETWEEN EXPLORATION LOCATIONS. THE TRANSITION BETWEEN MATERIALS MAY BE MORE OR LESS GRADUAL THAN INDICATED. INFORMATION ON ACTUAL SUBSURFACE CONDITIONS EXISTS ONLY AT THE SPECIFIC LOCATIONS INDICATED AND AT THE TIME OF EXPLORATION. SEE BORING LOGS FOR MORE DETAILED INFORMATION.
2. THIS PROFILE SHOULD BE USED IN CONJUNCTION WITH THE ASSOCIATED S. W. COLE ENGINEERING, INC. GEOTECHINCAL REPORT AND IS NOT TO BE USED FOR CONSTRUCTION.

NO.	DATE	DESCRIPTION	BY
1	12/20/2019	ADDENDUM 1 REPORT SUBMISSION	CEM
0	12/29/2017	DRAFT SUBMISSION	CEM

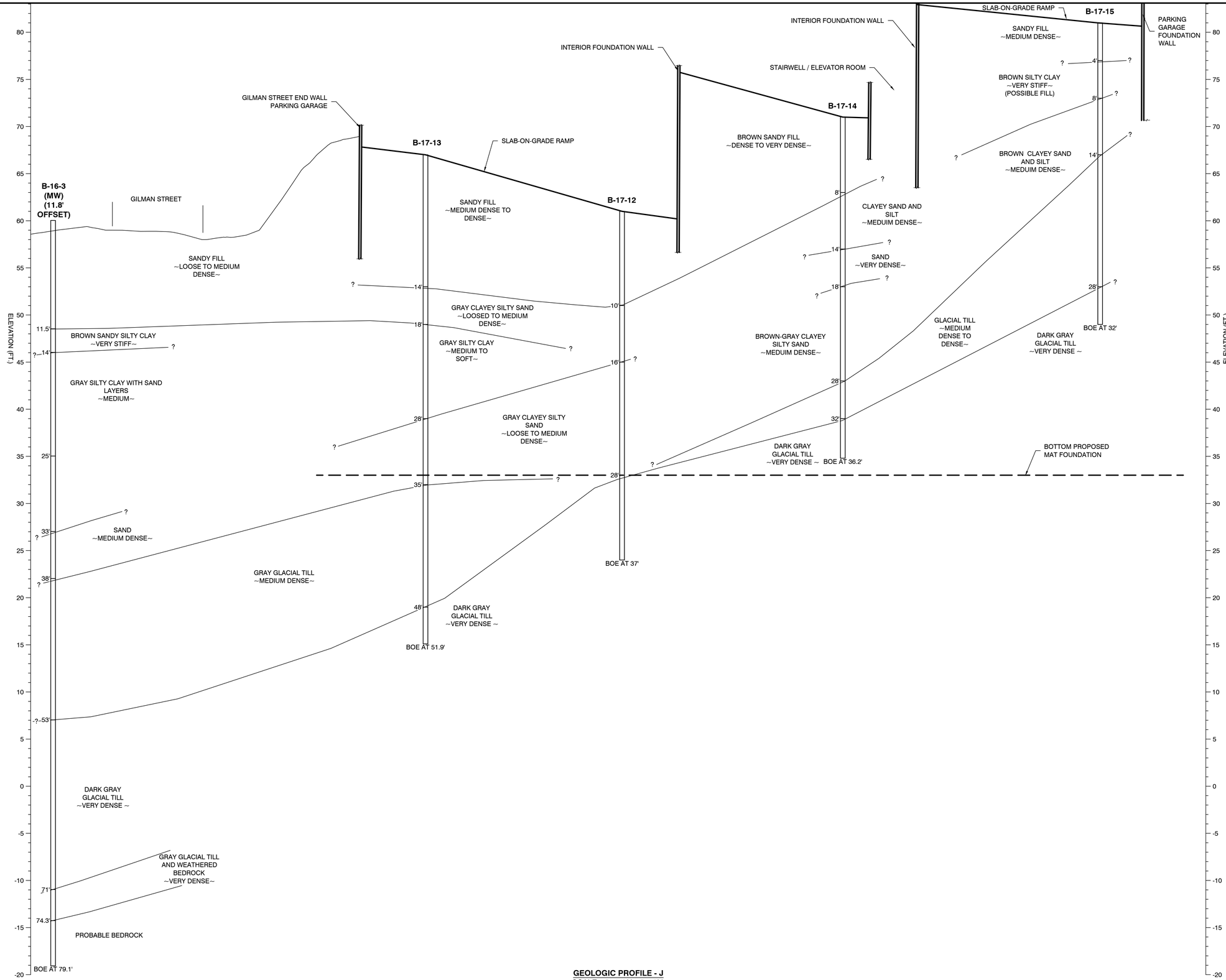
S.W.COLE ENGINEERING, INC.

MAINE MEDICAL CENTER

INTERPRETIVE GEOLOGIC PROFILE H

PROPOSED PARKING GARAGE AND
CONGRESS STREET BUILDING
GILMAN AND CONGRESS STREETS
PORTLAND, MAINE

Job No.: 16-1136 Scale: 1" = 20'
Date : 12/29/2017 Sheet: 1.6



GEOLOGIC PROFILE - J
SCALE: 1"=20' H.:1"=5' V.

LEGEND

B-16-4 (MW)	BORING NUMBER PIEZOMETER INSTALLED
	APPROXIMATE EXISTING GROUND SURFACE
7'	STRATA CHANGE
SILT	STRATA DEFINITION
BOE	BOTTOM OF EXPLORATION

NOTES:

1. THE DEPTH AND THICKNESS OF THE SUBSURFACE STRATA INDICATED ON THE SECTION WERE GENERALIZED FROM AND INTERPOLATED BETWEEN EXPLORATION LOCATIONS. THE TRANSITION BETWEEN MATERIALS MAY BE MORE OR LESS GRADUAL THAN INDICATED. INFORMATION ON ACTUAL SUBSURFACE CONDITIONS EXISTS ONLY AT THE SPECIFIC LOCATIONS INDICATED AND AT THE TIME OF EXPLORATION. SEE BORING LOGS FOR MORE DETAILED INFORMATION.
2. THIS PROFILE SHOULD BE USED IN CONJUNCTION WITH THE ASSOCIATED S. W. COLE ENGINEERING, INC. GEOTECHINCAL REPORT AND IS NOT TO BE USED FOR CONSTRUCTION.

NO.	DATE	DESCRIPTION	BY
1	12/20/2019	ADDENDUM 1 REPORT SUBMISSION	CEM
0	12/29/2017	DRAFT SUBMISSION	CEM

S.W.COLE ENGINEERING, INC.

MAINE MEDICAL CENTER

INTERPRETIVE GEOLOGIC PROFILE J

PROPOSED PARKING GARAGE AND CONGRESS STREET BUILDING
GILMAN AND CONGRESS STREETS
PORTLAND, MAINE

Job No.: 16-1136 Scale: 1" = 20'
Date : 12/29/2017 Sheet: 1.7

APPENDIX C

Exploration Logs and Key

BORING LOG

CLIENT: Maine Medical Center
PROJECT: Maine Medical Center MOB
LOCATION: Congress Street, Portland, Maine

BORING NO.: B-17- 1
SHEET: 1 of 2
PROJECT NO. 16-1136
DATE START: 10/31/2017
DATE FINISH: 10/31/2017

Drilling Information

LOCATION: See Exploration Location Plan | **ELEVATION (FT):** 56.5' +/- | **TOTAL DEPTH (FT):** 44.0 | **LOGGED BY:** Paul Kohler
DRILLING CO.: S. W. Cole Explorations, LLC | **DRILLER:** Scott Hollabaugh | **DRILLING METHOD:** Cased Boring
RIG TYPE: Track Mounted Diedrich D-50 | **AUGER ID/OD:** N/A / N/A | **SAMPLER:** Standard Split-Spoon
HAMMER TYPE: Automatic | **HAMMER WEIGHT (lbs):** 140 / 300 | **CASING ID/OD:** 4 in / 4 1/2 in | **CORE BARREL:**
HAMMER EFFICIENCY FACTOR: | **HAMMER DROP (inch):** 30 / 16
WATER LEVEL ELEVATIONS (ft): Soils wet to saturated below 11 ft +/-
GENERAL NOTES:

KEY TO NOTES AND SYMBOLS: Water Level: ▽ At time of Drilling; ▼ At Completion of Drilling; ▼ After Drilling
D = Split Spoon Sample; U = Thin Walled Tube Sample; R = Rock Core Sample; V = Field Vane Shear
Pen. = Penetration Length; Rec. = Recovery Length; bpf = Blows per Foot; mpf = Minute per Foot
WOR = Weight of Rods; WOH = Weight of Hammer; RQD = Rock Quality Designation; PID = Photoionization Detector
S_v = Field Vane Shear Strength, kips/sq.ft.; q_u = Unconfined Compressive Strength, kips/sq.ft.; N/A = Not Applicable

Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD	Field / Lab Test Data	Graphic Log	Sample Description & Classification	H_20 Depth	Remarks
55			1D		0-2	24/16	2-3-2-2			0.5 Topsoil		
										Medium dense brown silty SAND, some roots		
			2D		2-4	24/14	5-9-9-8			2.0 (Fill)		
										Medium dense light brown gravelly silty SAND		
	5		3D		5-7	24/10	4-3-4-6					
50			4D		7-9	24/16	12-14-12-12			7.0 Medium dense brown SAND, some silt		
	10		5D		10-12	24/16	6-7-8-7					
45			6D		12-14	24/15	6-5-5-4	w =16.6 %		11.0 Medium dense brown clayey silty SAND		
	15		7D		15-17	24/24	1-1-2-1	q_p=0.8 ksf		15.0 Medium to soft gray silty CLAY, some sand seams		
40								w =31 %				
	20		8D		20-22	24/14	4-5-9-14			19.0 Loose to medium dense brown clayey silty SAND with sand layers		
35										21.0 Loose gray clayey SAND and silt, tace gravel		
	25		9D		25-27	24/20	4-4-5-8					
30												
	30		10D		30-32	24/12	7-6-6-7					
25								w =12.5 %				
	35		11D		35-37	24/16	8-17-25-20			36.0 Medium dense silty SAND, some gravel, some clay (Glacial Till)		
20												

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

(Continued Next Page)

BORING LOG

CLIENT: Maine Medical Center
PROJECT: Maine Medical Center MOB
LOCATION: Congress Street, Portland, Maine

BORING NO.: B-17- 1
SHEET: 2 of 2
PROJECT NO. 16-1136
DATE START: 10/31/2017
DATE FINISH: 10/31/2017

Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	SAMPLE INFORMATION: Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD	Field / Lab Test Data	Graphic Log	Sample Description & Classification	H_20 Depth	Remarks
15			12D		40-42	24/2	10-10-11-13					
			13D		42-44	24/10	17-25-39-40	w =13.3 %		42.0 Very dense gray SAND and silt, some gravel (Glacial Till)		
										44.0 Bottom of Exploration at 44.0 feet		

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

BORING LOG

CLIENT:	Maine Medical Center
PROJECT:	Maine Medical Center MOB
LOCATION:	Congress Street, Portland, Maine

BORING NO.:	B-17- 2
SHEET:	1 of 2
PROJECT NO.	16-1136
DATE START:	10/31/2017
DATE FINISH:	10/31/2017

Drilling Information

LOCATION: See Exploration Location Plan **ELEVATION (FT):** 58' +/- **TOTAL DEPTH (FT):** 42.0 **LOGGED BY:** Paul Kohler

DRILLING CO.: S. W. Cole Explorations, LLC **DRILLER:** Scott Hollabaugh **DRILLING METHOD:** Cased Boring

RIG TYPE: Track Mounted Diedrich D-50 **AUGER ID/OD:** N/A / N/A **SAMPLER:** Standard Split-Spoon

HAMMER TYPE: Automatic **HAMMER WEIGHT (lbs):** 140 / 300 **CASING ID/OD:** 4 in / 4 1/2 in **CORE BARREL:**

HAMMER EFFICIENCY FACTOR: **HAMMER DROP (inch):** 30 / 16

WATER LEVEL ELEVATIONS (ft): Soils wet to saturated 10 ft +/-

GENERAL NOTES:

KEY TO NOTES AND SYMBOLS: Water Level: ▽ At time of Drilling; ▼ At Completion of Drilling; ▼ After Drilling

D = Split Spoon Sample; U = Thin Walled Tube Sample; R = Rock Core Sample; V = Field Vane Shear

Pen. = Penetration Length; Rec. = Recovery Length; bpf = Blows per Foot; mpf = Minute per Foot

WOR = Weight of Rods; WOH = Weight of Hammer; RQD = Rock Quality Designation; PID = Photoionization Detector

S_v = Field Vane Shear Strength, kips/sq.ft.; q_u = Unconfined Compressive Strength, kips/sq.ft.; N/A = Not Applicable

Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	SAMPLE INFORMATION: Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD	Field / Lab Test Data	Graphic Log	Sample Description & Classification	H_20 Depth	Remarks
			1D		0-2	24/12	2-3-3-5			0.5 Topsoil		
55			2D		2-4	24/2	8-10-12-9			Medium dense brown silty SAND, some organics (Fill)		
	5		3D		5-7	24/13	7-7-11-11			4.0 Medium dense brown silty SAND, trace clay		
50			4D		7-9	24/6	17-10-11-18					
	10		5D		10-12	24/20	5-3-2-3	q_P=1 ksf		10.0 Medium grayish-brown silty CLAY with brown sand layers		
45			6D		12-14	24/22	5-6-3-4	q_P=1 ksf				
	15		7D		15-17	24/24	1-1-2-3	q_P=1 to 1.5 ksf		14.0 Medium gray silty CLAY		
										16.0 Medium grayish-brown silty CLAY with sand layers		
40												
	20		8D		20-22	24/18	6-6-4-4			20.0 Medium dense brown clayey silty SAND with gray silty clay layers		
35										23.0 Medium dense brown silty SAND, some coarse sand		
	25		9D		25-27	24/20	6-6-6-10					
30										29.0 Dense brown gravelly silty SAND (Glacial Till)		
	30		10D		30-32	24/12	17-17-26-17					
25										34.0 Dense gray gravelly silty SAND (Glacial Till)		
	35		11D		35-37	24/2	17-17-14-14					
20										39.0 Very Dense gray silty SAND and gravel		

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

(Continued Next Page)

BORING LOG

CLIENT: Maine Medical Center
PROJECT: Maine Medical Center MOB
LOCATION: Congress Street, Portland, Maine

BORING NO.: B-17- 2
SHEET: 2 of 2
PROJECT NO. 16-1136
DATE START: 10/31/2017
DATE FINISH: 10/31/2017

Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	SAMPLE INFORMATION						Graphic Log	Sample Description & Classification	H_20 Depth	Remarks
			Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD	Field / Lab Test Data				
			12D	X	40-42	24/12	18-23-34-35			(Glacial Till)		
										42.0 Bottom of Exploration at 42.0 feet		

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

BORING NO.: B-17- 2

BORING LOG

CLIENT: Maine Medical Center
PROJECT: Maine Medical Center MOB
LOCATION: Congress Street, Portland, Maine

BORING NO.: B-17- 3
SHEET: 1 of 2
PROJECT NO. 16-1136
DATE START: 10/31/2017
DATE FINISH: 10/31/2017

Drilling Information

LOCATION: See Exploration Location Plan | **ELEVATION (FT):** 57.5' +/- | **TOTAL DEPTH (FT):** 47.0 | **LOGGED BY:** Paul Kohler
DRILLING CO.: S. W. Cole Explorations, LLC | **DRILLER:** Scott Hollabaugh | **DRILLING METHOD:** Cased Boring
RIG TYPE: Track Mounted Diedrich D-50 | **AUGER ID/OD:** N/A / N/A | **SAMPLER:** Standard Split-Spoon
HAMMER TYPE: Automatic | **HAMMER WEIGHT (lbs):** 140 / 300 | **CASING ID/OD:** 4 in / 4 1/2 in | **CORE BARREL:**
HAMMER EFFICIENCY FACTOR: | **HAMMER DROP (inch):** 30 / 16
WATER LEVEL ELEVATIONS (ft): Soils wet to saturated below 10 ft +/-
GENERAL NOTES:

KEY TO NOTES AND SYMBOLS:
Water Level: ▽ At time of Drilling; ▼ At Completion of Drilling; ▼ After Drilling
D = Split Spoon Sample; U = Thin Walled Tube Sample; R = Rock Core Sample; V = Field Vane Shear
Pen. = Penetration Length; Rec. = Recovery Length; bpf = Blows per Foot; mpf = Minute per Foot
WOR = Weight of Rods; WOH = Weight of Hammer; RQD = Rock Quality Designation; PID = Photoionization Detector
S_v = Field Vane Shear Strength, kips/sq.ft.; q_u = Unconfined Compressive Strength, kips/sq.ft.; N/A = Not Applicable

Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD	Field / Lab Test Data	Graphic Log	Sample Description & Classification	H_20 Depth	Remarks
			1D		0-2	24/12	2-6-17-20			0.5 Topsoil		
55			2D		2-4	24/8	25-26-19-14			Medium dense brown silty SAND, some gravel (Fill)		
	5		3D		5-7	24/12	8-9-9-11			5.0 Medium dense brown SAND, some silt		
50			4D		7-9	24/14	9-11-9-10					
	10		5D		10-12	24/24	2-1-2-2	q_P=1 ksf		10.0 Medium gray silty CLAY with brown sand layers		
45			6D		12-14	24/20	2-1-2-1	q_P=1 ksf				
	15		7D		15-17	24/24	2-2-2-2	q_P=1 ksf		16.0 Medium dense grayish-brown silty CLAY with brown sand layers		
40												
	20		8D		20-22	24/14	5-6-7-9			20.0 Medium dense brown clayey silty SAND with brown silty clay layers		
35										24.0 Loose to medium dense brown silty SAND and gravel, some clay		
	25		9D		25-27	24/10	4-4-8-14					
30												
	30		10D		30-30.3	4/3	50/4"					
25												
	35		11D		35-37	24/14	9-9-16-21			35.0 Medium dense gray clayey silty SAND and gravel (Glacial Till)		
20												

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

(Continued Next Page)

BORING LOG

CLIENT: Maine Medical Center
PROJECT: Maine Medical Center MOB
LOCATION: Congress Street, Portland, Maine

BORING NO.: B-17- 3
SHEET: 2 of 2
PROJECT NO. 16-1136
DATE START: 10/31/2017
DATE FINISH: 10/31/2017

Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	SAMPLE INFORMATION: Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD	Field / Lab Test Data	Graphic Log	Sample Description & Classification	H_20 Depth	Remarks
			12D		40-42	24/16	14-14-16-14					
15												
	45		13D		45-47	24/16	26-29-27-36			44.0 Medium dense gray SILT and sand		
										46.0 Very dense brownish-gray silty SAND, some gravel (Glacial Till)		
										47.0 Bottom of Exploration at 47.0 feet		

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

BORING LOG

CLIENT: Maine Medical Center
PROJECT: Maine Medical Center MOB
LOCATION: Congress Street, Portland, Maine

BORING NO.: B-17- 4
SHEET: 1 of 2
PROJECT NO. 16-1136
DATE START: 11/1/2017
DATE FINISH: 11/1/2017

Drilling Information

LOCATION: See Exploration Location Plan | **ELEVATION (FT):** 54' +/- | **TOTAL DEPTH (FT):** 47.0 | **LOGGED BY:** Paul Kohler
DRILLING CO.: S. W. Cole Explorations, LLC | **DRILLER:** Scott Hollabaugh | **DRILLING METHOD:** Cased Boring
RIG TYPE: Track Mounted Diedrich D-50 | **AUGER ID/OD:** N/A / N/A | **SAMPLER:** Standard Split-Spoon
HAMMER TYPE: Automatic | **HAMMER WEIGHT (lbs):** 140 / 300 | **CASING ID/OD:** 4 in / 4 1/2 in | **CORE BARREL:**
HAMMER EFFICIENCY FACTOR: | **HAMMER DROP (inch):** 30 / 16
WATER LEVEL ELEVATIONS (ft): Soils wet to saturated below 15 ft +/-
GENERAL NOTES:

KEY TO NOTES AND SYMBOLS: Water Level: ▽ At time of Drilling; ▼ At Completion of Drilling; ▼ After Drilling
D = Split Spoon Sample; U = Thin Walled Tube Sample; R = Rock Core Sample; V = Field Vane Shear
Pen. = Penetration Length; Rec. = Recovery Length; bpf = Blows per Foot; mpf = Minute per Foot
WOR = Weight of Rods; WOH = Weight of Hammer; RQD = Rock Quality Designation; PID = Photoionization Detector
S_v = Field Vane Shear Strength, kips/sq.ft.; q_U = Unconfined Compressive Strength, kips/sq.ft.; N/A = Not Applicable

Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	SAMPLE INFORMATION: Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD	Field / Lab Test Data	Graphic Log	Sample Description & Classification	H_20 Depth	Remarks
			1D		0-2	24/12	2-2-4-4			0.5 Topsoil		
			2D		2-4	24/20	7-7-10-10			Medium dense dark brown silty SAND, some gravel (Fill) 2.0		
50										Medium dense light brownsilty SAND, some gravel (Fill)		
	5		3D		5-7	24/20	5-2-3-2	q_P=3 to 4 ksf		5.0 Stiff brown silty CLAY with some sand layers		
			4D		7-9	24/18	4-5-7-7	q_P=3 to 4 ksf				
45												
	10		5D		10-12	24/24	2-2-3-4	q_P=2.5 ksf				
			6D		12-14	24/24	4-5-6-6	q_P=2 to 3 ksf				
40												
	15		7D		15-17	24/20	4-4-5-5			16.0 Medium dense brown silty SAND, some clay		
										18.0 Medium dense brown gravelly SAND, some silt		
35												
	20		8D		20-22	24/18	6-10-17-26					
30												
	25		9D		25-27	24/12	12-12-18-20					
25												
	30		10D		30-32	24/10	22-15-12-10					
20												
	35		11D		35-37	24/16	13-19-13-10			36.5 Medium dense gray clayey silty SAND, some gravel (Glacial Till)		
15												

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

(Continued Next Page)

BORING LOG

CLIENT: Maine Medical Center
PROJECT: Maine Medical Center MOB
LOCATION: Congress Street, Portland, Maine

BORING NO.: B-17- 4
SHEET: 2 of 2
PROJECT NO. 16-1136
DATE START: 11/1/2017
DATE FINISH: 11/1/2017

Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	SAMPLE INFORMATION: Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD	Field / Lab Test Data	Graphic Log	Sample Description & Classification	H_20 Depth	Remarks
			12D		40-42	24/16	6-6-11-17					
										42.0 Very Dense gray silty SAND and gravel (Glacial Till)		
10	45		13D		45-47	24/14	23-37-42-16					
										47.0 Bottom of Exploration at 47.0 feet		

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

BORING NO.: B-17- 4

BORING LOG

CLIENT: Maine Medical Center
PROJECT: Maine Medical Center MOB
LOCATION: Congress Street, Portland, Maine

BORING NO.: B-17- 5
SHEET: 1 of 2
PROJECT NO. 16-1136
DATE START: 11/1/2017
DATE FINISH: 11/1/2017

Drilling Information

LOCATION: See Exploration Location Plan | **ELEVATION (FT):** 53.5' +/- | **TOTAL DEPTH (FT):** 45.4 | **LOGGED BY:** Paul Kohler
DRILLING CO.: S. W. Cole Explorations, LLC | **DRILLER:** Scott Hollabaugh | **DRILLING METHOD:** Cased Boring
RIG TYPE: Track Mounted Diedrich D-50 | **AUGER ID/OD:** N/A / N/A | **SAMPLER:** Standard Split-Spoon
HAMMER TYPE: Automatic | **HAMMER WEIGHT (lbs):** 140 / 300 | **CASING ID/OD:** 4 in / 4 1/2 in | **CORE BARREL:**
HAMMER EFFICIENCY FACTOR: | **HAMMER DROP (inch):** 30 / 16
WATER LEVEL ELEVATIONS (ft): Soils wet to saturated below 25 ft +/-
GENERAL NOTES:

KEY TO NOTES AND SYMBOLS:
Water Level: ▽ At time of Drilling; ▼ At Completion of Drilling; ▼ After Drilling
D = Split Spoon Sample; U = Thin Walled Tube Sample; R = Rock Core Sample; V = Field Vane Shear
Pen. = Penetration Length; Rec. = Recovery Length; bpf = Blows per Foot; mpf = Minute per Foot
WOR = Weight of Rods; WOH = Weight of Hammer; RQD = Rock Quality Designation; PID = Photoionization Detector
S_v = Field Vane Shear Strength, kips/sq.ft.; q_U = Unconfined Compressive Strength, kips/sq.ft.; N/A = Not Applicable

Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	SAMPLE INFORMATION: Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD	Field / Lab Test Data	Graphic Log	Sample Description & Classification	H_20 Depth	Remarks
			1D		0-2	24/12	4-4-6-6			0.5 Topsoil		
			2D		2-4	24/16	6-7-8-8			1.5 Loose dark brown silty SAND with organics (Fill); Medium dense brown silty SAND, some gravel (Fill)		
50	5		3D		5-7	24/18	17-26-30-17			5.0 Medium dense brown silty SAND, some coarse sand, trace gravel		
			4D		7-9	24/12	20-21-20-14			8.0 Dense brown SAND, some silt		
45	10		5D		10-12	24/18	4-4-5-4	q_P=5 to 7 ksf		10.0 Very stiff brown silty CLAY with brown sand layers		
			6D		12-14	24/18	5-5-4-4	w =26.3 % q_P=3 to 5 ksf				
40	15		7D		15-17	24/24	4-3-3-3			16.5 Stiff gray silty CLAY with sand layers		
35	20		8D		20-21.3	16/12	16-18-50/4"	w =16.6 %		20.5 Medium dense brown silty SAND, some coarse sand		
30	25		9D		25-27	24/12	10-14-10-20					
25	30		10D		30-32	24/20	6-6-5-8	w =14.3 %		30.0 Medium dense gray clayey silty fine SAND		
20	35		11D		35-37	24/4	5-6-7-7	w =10.2 %				
15												

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

(Continued Next Page)

BORING LOG

CLIENT: Maine Medical Center
PROJECT: Maine Medical Center MOB
LOCATION: Congress Street, Portland, Maine

BORING NO.: B-17- 5
SHEET: 2 of 2
PROJECT NO. 16-1136
DATE START: 11/1/2017
DATE FINISH: 11/1/2017

Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	SAMPLE INFORMATION: Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD	Field / Lab Test Data	Graphic Log	Sample Description & Classification	H_20 Depth	Remarks
			12D		40-42	24/16	6-6-7-8					
10										43.0 Very dense dark gray gravelly SAND, some silt (Glacial Till)		
	45		13D		45-45.4	5/1	50/5"	w =6.2 %		45.4 Bottom of Exploration at 45.4 feet		

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

BORING LOG

CLIENT: Maine Medical Center
PROJECT: Maine Medical Center MOB
LOCATION: Congress Street, Portland, Maine

BORING NO.: B-17- 6
SHEET: 1 of 2
PROJECT NO. 16-1136
DATE START: 11/1/2017
DATE FINISH: 11/1/2017

Drilling Information

LOCATION: See Exploration Location Plan **ELEVATION (FT):** 50.5' +/- **TOTAL DEPTH (FT):** 45.8 **LOGGED BY:** Paul Kohler
DRILLING CO.: S. W. Cole Explorations, LLC **DRILLER:** Scott Hollabaugh **DRILLING METHOD:** Cased Boring
RIG TYPE: Track Mounted Diedrich D-50 **AUGER ID/OD:** N/A / N/A **SAMPLER:** Standard Split-Spoon
HAMMER TYPE: Automatic **HAMMER WEIGHT (lbs):** 140 / 300 **CASING ID/OD:** 4 in / 4 1/2 in **CORE BARREL:**
HAMMER EFFICIENCY FACTOR: **HAMMER DROP (inch):** 30 / 16
WATER LEVEL ELEVATIONS (ft): Soils wet to saturated at 15 ft +/-
GENERAL NOTES:

KEY TO NOTES AND SYMBOLS:
Water Level: ▽ At time of Drilling; ▼ At Completion of Drilling; ▼ After Drilling
D = Split Spoon Sample; U = Thin Walled Tube Sample; R = Rock Core Sample; V = Field Vane Shear
Pen. = Penetration Length; Rec. = Recovery Length; bpf = Blows per Foot; mpf = Minute per Foot
WOR = Weight of Rods; WOH = Weight of Hammer; RQD = Rock Quality Designation; PID = Photoionization Detector
S_v = Field Vane Shear Strength, kips/sq.ft.; q_u = Unconfined Compressive Strength, kips/sq.ft.; N/A = Not Applicable

Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	SAMPLE INFORMATION: Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD	Field / Lab Test Data	Graphic Log	Sample Description & Classification	H_20 Depth	Remarks
50			1D		0-2	24/14	2-5-5-6			0.5 Topsoil		
										Medium dense dark brown silty SAND, some gravel (Fill)		
			2D		2-4	24/16	7-8-11-12			2.0 Medium dense brown gravelly silty SAND		
	5											
45			3D		5-5.7	8/6	18-50/2"					
										8.0 Stiff brown silty CLAY with sand layers		
	10											
40			4D		10-12	24/12	3-4-3-4	q_P=5 to 6 ksf				
	15											
35			5D		15-17	24/24	3-4-4-5	q_P=3 ksf				
	20											
30			6D		20-22	24/24	3-4-5-6	q_P=2.5 ksf				
										21.0 Loose brown clayey silty SAND		
	25									24.0 Medium dense brown SAND, some silt, some gravel		
25			7D		25-27	24/12	10-18-23-23					
	30											
20			8D		30-32	24/12	10-12-13-11					
										33.0 Loose brown clayey silty SAND, some gravel		
	35											
15			9D		35-37	24/2	3-3-3-3					
										39.0 Medium dense gray gravelly SAND and silt		

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

(Continued Next Page)

BORING LOG

S.W.COLE ENGINEERING, INC.

CLIENT: Maine Medical Center
PROJECT: Maine Medical Center MOB
LOCATION: Congress Street, Portland, Maine

BORING NO.: B-17- 6
SHEET: 2 of 2
PROJECT NO. 16-1136
DATE START: 11/1/2017
DATE FINISH: 11/1/2017

Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	SAMPLE INFORMATION: Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD	Field / Lab Test Data	Graphic Log	Sample Description & Classification	H_20 Depth	Remarks
10			10D		40-42	24/12	12-17-17-15			(Glacial Till)		
	45											
5			11D		45-45.8	10/10	30-50/4"			45.0 Very dense gray silt and SAND, some gravel (Glacial Till) 45.8		

Bottom of Exploration at 45.8 feet

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

BORING LOG

CLIENT: Maine Medical Center
PROJECT: Maine Medical Center MOB
LOCATION: Congress Street, Portland, Maine

BORING NO.: B-17- 7
SHEET: 1 of 2
PROJECT NO. 16-1136
DATE START: 11/2/2017
DATE FINISH: 11/2/2017

Drilling Information

LOCATION: See Exploration Location Plan | **ELEVATION (FT):** 49' +/- | **TOTAL DEPTH (FT):** 42.0 | **LOGGED BY:** Paul Kohler
DRILLING CO.: S. W. Cole Explorations, LLC | **DRILLER:** Scott Hollabaugh | **DRILLING METHOD:** Cased Boring
RIG TYPE: Track Mounted Diedrich D-50 | **AUGER ID/OD:** N/A / N/A | **SAMPLER:** Standard Split-Spoon
HAMMER TYPE: Automatic | **HAMMER WEIGHT (lbs):** 140 / 300 | **CASING ID/OD:** 4 in / 4 1/2 in | **CORE BARREL:**
HAMMER EFFICIENCY FACTOR: | **HAMMER DROP (inch):** 30 / 16
WATER LEVEL ELEVATIONS (ft): Soils saturated below 18 ft +/-
GENERAL NOTES:

KEY TO NOTES AND SYMBOLS: Water Level: ▽ At time of Drilling; ▼ At Completion of Drilling; ▼ After Drilling
D = Split Spoon Sample; U = Thin Walled Tube Sample; R = Rock Core Sample; V = Field Vane Shear
Pen. = Penetration Length; Rec. = Recovery Length; bpf = Blows per Foot; mpf = Minute per Foot
WOR = Weight of Rods; WOH = Weight of Hammer; RQD = Rock Quality Designation; PID = Photoionization Detector
S_v = Field Vane Shear Strength, kips/sq.ft.; q_u = Unconfined Compressive Strength, kips/sq.ft.; N/A = Not Applicable

Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	SAMPLE INFORMATION: Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD	Field / Lab Test Data	Graphic Log	Sample Description & Classification	H_20 Depth	Remarks
45			1D		0-2	24/18	3-4-5-6			0.5 Topsoil Loose brown silty SAND, some gravel (Fill)		
	5		2D		5-7	24/20	4-4-4-4	q_P=4 ksf		4.0 Stiff brown silty CLAY with some sand layers		
40	10		3D		10-12	24/20	3-3-3-3	q_P=3 ksf				
35	15		4D		15-17	24/16	18-19-16-35			14.0 Dense light brown SAND, some silt		
30	20		5D		20-22	24/18	10-12-12-12			18.0 Medium dense brown silty SAND, some gravel		
25	25		6D		25-27	24/0	15-9-9-9					
20	30		7D		30-32	24/14	3-4-4-3			30.0 Loose gray clayey silty SAND, trace gravel		
15	35		8D		35-37	24/14	8-5-5-8			34.0 Medium dense gray silty SAND, some gravel (Glacial Till)		
10										37.0 Very dense gray SAND and silt, some gravel (Glacial Till)		

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

(Continued Next Page)

BORING LOG

CLIENT: Maine Medical Center
PROJECT: Maine Medical Center MOB
LOCATION: Congress Street, Portland, Maine

BORING NO.: B-17- 7
SHEET: 2 of 2
PROJECT NO. 16-1136
DATE START: 11/2/2017
DATE FINISH: 11/2/2017

Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	SAMPLE INFORMATION						Graphic Log	Sample Description & Classification	H_20 Depth	Remarks
			Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD	Field / Lab Test Data				
			9D	X	40-42	24/14	26-40-32-26					
										42.0 Bottom of Exploration at 42.0 feet		

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

BORING LOG

CLIENT:	Maine Medical Center
PROJECT:	Maine Medical Center MOB
LOCATION:	Congress Street, Portland, Maine

BORING NO.:	B-17- 8
SHEET:	1 of 2
PROJECT NO.	16-1136
DATE START:	11/2/2017
DATE FINISH:	11/2/2017

Drilling Information

LOCATION: See Exploration Location Plan **ELEVATION (FT):** 47' +/- **TOTAL DEPTH (FT):** 44.0 **LOGGED BY:** Paul Kohler

DRILLING CO.: S. W. Cole Explorations, LLC **DRILLER:** Scott Hollabaugh **DRILLING METHOD:** Cased Boring

RIG TYPE: Track Mounted Diedrich D-50 **AUGER ID/OD:** N/A / N/A **SAMPLER:** Standard Split-Spoon

HAMMER TYPE: Automatic **HAMMER WEIGHT (lbs):** 140 / 300 **CASING ID/OD:** 4 in / 4 1/2 in **CORE BARREL:**

HAMMER EFFICIENCY FACTOR: **HAMMER DROP (inch):** 30 / 16

WATER LEVEL ELEVATIONS (ft): Soils saturated below 30 ft +/-

GENERAL NOTES:

KEY TO NOTES AND SYMBOLS: Water Level: ▽ At time of Drilling; ▼ At Completion of Drilling; ▼ After Drilling

D = Split Spoon Sample; U = Thin Walled Tube Sample; R = Rock Core Sample; V = Field Vane Shear

Pen. = Penetration Length; Rec. = Recovery Length; bpf = Blows per Foot; mpf = Minute per Foot

WOR = Weight of Rods; WOH = Weight of Hammer; RQD = Rock Quality Designation; PID = Photoionization Detector

S_v = Field Vane Shear Strength, kips/sq.ft.; q_U = Unconfined Compressive Strength, kips/sq.ft.; N/A = Not Applicable

Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	SAMPLE INFORMATION: Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD	Field / Lab Test Data	Graphic Log	Sample Description & Classification	H_2O Depth	Remarks
45			1D		0-2	24/18	2-5-6-8			0.5 Topsoil Medium dense dark brown silty SAND, some gravel, some brick (Fill)		
	5		2D		5-7	24/16	17-8-6-8	q_P=7 ksf		4.0 Medium dense light brown silty SAND, some silt 6.0 Stiff brown silty CLAY with some sand layers		
40												
	10		3D		10-12	24/20	3-3-3-3	q_P=4 ksf				
35												
	15		4D		15-17	24/20	4-4-4-5	q_P=3 ksf		16.5 Medium dense brown SAND, some silt, some brown silty clay layers		
30												
	20		5D		20-22	24/14	9-9-12-12					
25												
	25		6D		25-27	24/12	7-8-8-9					
20												
	30		7D		30-32	24/16	7-17-10-18			30.0 Medium dense gray gravelly SAND and silt 33.0 Medium dense brown gravelly silty SAND (Glacial Till)		
15												
	35		8D		35-37	24/14	10-21-15-13					
10												

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

(Continued Next Page)

BORING LOG

CLIENT: Maine Medical Center
PROJECT: Maine Medical Center MOB
LOCATION: Congress Street, Portland, Maine

BORING NO.: B-17- 8
SHEET: 2 of 2
PROJECT NO. 16-1136
DATE START: 11/2/2017
DATE FINISH: 11/2/2017

Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	SAMPLE INFORMATION: Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD	Field / Lab Test Data	Graphic Log	Sample Description & Classification	H_20 Depth	Remarks
			9D		40-42	24/18	12-15-15-21					
5			10D		42-44	24/12	20-20-20-49			41.5 Very dense gray SAND and silt, some gravel (Glacial Till)		
										44.0 Bottom of Exploration at 44.0 feet		

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

BORING LOG

CLIENT:	Maine Medical Center
PROJECT:	Maine Medical Center MOB
LOCATION:	Congress Street, Portland, Maine

BORING NO.:	B-17- 9
SHEET:	1 of 2
PROJECT NO.	16-1136
DATE START:	11/1/2017
DATE FINISH:	11/1/2017

Drilling Information

LOCATION: See Exploration Location Plan **ELEVATION (FT):** 54' +/- **TOTAL DEPTH (FT):** 47.0 **LOGGED BY:** Paul Kohler

DRILLING CO.: New England Boring **DRILLER:** Brett **DRILLING METHOD:** Cased Boring

RIG TYPE: Soil Scout **AUGER ID/OD:** N/A / N/A **SAMPLER:** Standard Split-Spoon

HAMMER TYPE: Donut **HAMMER WEIGHT (lbs):** 140 / 300 **CASING ID/OD:** 4 in / 4 1/2 in **CORE BARREL:**

HAMMER EFFICIENCY FACTOR: **HAMMER DROP (inch):** 30 / 16

WATER LEVEL ELEVATIONS (ft): Soils wet to saturated at 15 ft +/-

GENERAL NOTES:

KEY TO NOTES AND SYMBOLS:
Water Level: ▽ At time of Drilling; ▼ At Completion of Drilling; ▼ After Drilling
D = Split Spoon Sample; U = Thin Walled Tube Sample; R = Rock Core Sample; V = Field Vane Shear
Pen. = Penetration Length; Rec. = Recovery Length; bpf = Blows per Foot; mpf = Minute per Foot
WOR = Weight of Rods; WOH = Weight of Hammer; RQD = Rock Quality Designation; PID = Photoionization Detector
S_v = Field Vane Shear Strength, kips/sq.ft.; q_U = Unconfined Compressive Strength, kips/sq.ft.; N/A = Not Applicable

Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	SAMPLE INFORMATION: Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD	Field / Lab Test Data	Graphic Log	Sample Description & Classification	H_20 Depth	Remarks
			1D		0.6-2.6	24/11	5-10-8-8			0.6 — 7.5 +/- inches of Concrete Medium dense light brown SAND, some silt, some gravel (Fill)		
50										3.0 — Loose clayey silty SAND		
	5		2D		4-6	24/24	2-4-5-6			4.5 — Stiff brown silty CLAY with sand layers		
45												
	10		3D		10-12	24/24	2-4-5-5	q_P=3 ksf				
40										14.0 — Medium dense brown clayey SILT and sand, some coarse sand, some cobbles		
	15		4D		15-17	24/13	4-8-11-31	q_P=1 ksf				
35										18.0 — Medium dense brownish-gray silty SAND		
	20		5D		20-22	24/1	10-10-9-9					
30										23.0 — Loose brown silty SAND, some coase sand, some clay		
	25		6D		25-27	24/18	5-5-4-1					
25										28.0 — Medium dense to dense gray gravelly SAND and silt, some clay (Glacial Till)		
	30		7D		30-32	24/9	13-17-19-16					
20												
	35		8D		35-37	24/19	3-4-12-51					
15												

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

(Continued Next Page)

BORING LOG

CLIENT: Maine Medical Center
PROJECT: Maine Medical Center MOB
LOCATION: Congress Street, Portland, Maine

BORING NO.: B-17- 9
SHEET: 2 of 2
PROJECT NO. 16-1136
DATE START: 11/1/2017
DATE FINISH: 11/1/2017

Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	SAMPLE INFORMATION: Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD	Field / Lab Test Data	Graphic Log	Sample Description & Classification	H_20 Depth	Remarks
			9D		40-42	24/8	12-21-16-29			41.5 Very dense dark gray SAND and silt, some gravel (Glacial Till)		
10	45		10		45-47	24/12	20-23-31-46			47.0 Bottom of Exploration at 47.0 feet		

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

BORING LOG

S.W.COLE ENGINEERING, INC.

CLIENT: Maine Medical Center
PROJECT: Maine Medical Center MOB
LOCATION: Congress Street, Portland, Maine

BORING NO.: B-17-10
SHEET: 1 of 1
PROJECT NO. 16-1136
DATE START: 11/2/2017
DATE FINISH: 11/2/2017

Drilling Information

LOCATION: See Exploration Location Plan
ELEVATION (FT): 56' +/-
TOTAL DEPTH (FT): 37.0
LOGGED BY: Paul Kohler
DRILLING CO.: New England Boring
DRILLER: Brett
DRILLING METHOD: Cased Boring
RIG TYPE: Soil Scout
AUGER ID/OD: N/A / N/A
SAMPLER: Standard Split-Spoon
HAMMER TYPE: Donut
HAMMER WEIGHT (lbs): 140 / 300
CASING ID/OD: 4 in / 4 1/2 in
CORE BARREL:
HAMMER EFFICIENCY FACTOR:
HAMMER DROP (inch): 30 / 16
WATER LEVEL ELEVATIONS (ft): Soils wet to saturated at 10 ft +/-
GENERAL NOTES:

KEY TO NOTES AND SYMBOLS:
Water Level: ▽ At time of Drilling; ▼ At Completion of Drilling; ▼ After Drilling
D = Split Spoon Sample; U = Thin Walled Tube Sample; R = Rock Core Sample; V = Field Vane Shear
Pen. = Penetration Length; Rec. = Recovery Length; bpf = Blows per Foot; mpf = Minute per Foot
WOR = Weight of Rods; WOH = Weight of Hammer; RQD = Rock Quality Designation; PID = Photoionization Detector
S_v = Field Vane Shear Strength, kips/sq.ft.; q_U = Unconfined Compressive Strength, kips/sq.ft.; N/A = Not Applicable

Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	SAMPLE INFORMATION: Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD	Field / Lab Test Data	Graphic Log	Sample Description & Classification	H_20 Depth	Remarks
55			1D		0.5-2.5	24/7	3-15-14-16			0.5 — 5.5 +/- inches of Concrete Medium dense brown SAND, some silt (Fill)		
										3.0 — Loose brown silty SAND		
50	5		2D		5-7	24/12	4-1-2-2	q_P=1.5 ksf		6.0 — Medium brown silty CLAY with sand layers		
45	10		3D		10-12	24/24	2-2-3-3	q_P=1 ksf w =36.6 %				
										14.0 — Soft gray and brown silty CLAY with some sand layers		
40	15		4D		15-17	24/24	WOH-1-1-2	q_P=0.6 ksf w =34.4 %				
35	20		5D		20-22	24/11	3-10-13-8	q_P=1 ksf		21.5 — Medium dense clayey gray silty SAND, some gravel		
30	25		6D		25-27	24/8	15-21-16-16	w =17.3 %		26.0 — Medium dense brown silty SAND		
25	30		7D		30-32	24/7	8-12-17-51			30.0 — Medium dense gray clayey silty SAND, some gravel, some cobbles (Glacial Till)		
										33.0 — Dense dark gray SAND and silt, some gravel (Glacial Till)		
20	35		8D		35-37	24/14	19-27-27-41	w =12.8 %		37.0 — Bottom of Exploration at 37.0 feet		

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

BORING NO.: B-17-10

BORING LOG

S.W.COLE ENGINEERING, INC.

CLIENT: Maine Medical Center
PROJECT: Maine Medical Center MOB
LOCATION: Congress Street, Portland, Maine

BORING NO.: B-17-11
SHEET: 1 of 1
PROJECT NO. 16-1136
DATE START: 11/1/2017
DATE FINISH: 11/2/2017

Drilling Information

LOCATION: See Exploration Location Plan
ELEVATION (FT): 58' +/-
TOTAL DEPTH (FT): 36.7
LOGGED BY: Paul Kohler
DRILLING CO.: New England Boring
DRILLER: Brett
DRILLING METHOD: Cased Boring
RIG TYPE: Soil Scout
AUGER ID/OD: N/A / N/A
SAMPLER: Standard Split-Spoon
HAMMER TYPE: Donut
HAMMER WEIGHT (lbs): 140 / 300
CASING ID/OD: 4 in / 4 1/2 in
CORE BARREL:
HAMMER EFFICIENCY FACTOR:
HAMMER DROP (inch): 30 / 16
WATER LEVEL ELEVATIONS (ft): Soils wet to saturated at 5 ft +/-
GENERAL NOTES:

KEY TO NOTES AND SYMBOLS:
Water Level: ▽ At time of Drilling; ▼ At Completion of Drilling; ▼ After Drilling
D = Split Spoon Sample; U = Thin Walled Tube Sample; R = Rock Core Sample; V = Field Vane Shear
Pen. = Penetration Length; Rec. = Recovery Length; bpf = Blows per Foot; mpf = Minute per Foot
WOR = Weight of Rods; WOH = Weight of Hammer; RQD = Rock Quality Designation; PID = Photoionization Detector
S_v = Field Vane Shear Strength, kips/sq.ft.; q_u = Unconfined Compressive Strength, kips/sq.ft.; N/A = Not Applicable

Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	SAMPLE INFORMATION: Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD	Field / Lab Test Data	Graphic Log	Sample Description & Classification	H_20 Depth	Remarks
55			1D		0.6-2.6	24/14	5-8-9-8			0.6 — 7 +/- in of Concrete Medium dense light brown SAND, some silt (Fill)		
	5		2D		5-7	24/20	1-1-1-1	q_P=0.2 ksf		3.0 — Soft gray and brown silty CLAY, some sand layers		
50												
	10		3D		10-12	24/20	WOR-2-5-9	q_P=1 to 2 ksf		11.0 — Loose brown silty SAND		
45										14.0 — Loose grayish-brown clayey silty SAND, trace gravel		
	15		4D		15-17	24/20	1-3-4-9					
40										18.0 — Medium dense to dense grayish-brown gravelly SAND and silt, some cobbles		
	20		5D		20-22	24/11	11-23-21-29					
35												
	25		6D		25-26.5	18/8	15-16-100					
30												
	30		7D		30-32	24/13	19-24-16-14			31.5 — Medium dense gray clayey SILT, some sand		
25										34.0 — Very dense dark gray SAND and silt, some gravel (Glacial Till)		
	35		8D		35-37	24/20	30-45-53-57			36.7 — Bottom of Exploration at 36.7 feet		

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

BORING LOG

S.W.COLE ENGINEERING, INC.

CLIENT: Maine Medical Center
PROJECT: Maine Medical Center MOB
LOCATION: Congress Street, Portland, Maine

BORING NO.: B-17-12
SHEET: 1 of 1
PROJECT NO. 16-1136
DATE START: 11/3/2017
DATE FINISH: 11/3/2017

Drilling Information

LOCATION: See Exploration Location Plan
ELEVATION (FT): 61' +/-
TOTAL DEPTH (FT): 37.0
LOGGED BY: Paul Kohler
DRILLING CO.: New England Boring
DRILLER: Brett
DRILLING METHOD: Cased Boring
RIG TYPE: Soil Scout
AUGER ID/OD: N/A / N/A
SAMPLER: Standard Split-Spoon
HAMMER TYPE: Donut
HAMMER WEIGHT (lbs): 140 / 300
CASING ID/OD: 4 in / 4 1/2 in
CORE BARREL:
HAMMER EFFICIENCY FACTOR:
HAMMER DROP (inch): 30 / 16
WATER LEVEL ELEVATIONS (ft): Soils wet to saturated at 7 ft +/-
GENERAL NOTES:

KEY TO NOTES AND SYMBOLS:
Water Level: ▽ At time of Drilling; ▼ At Completion of Drilling; ▼ After Drilling
D = Split Spoon Sample; U = Thin Walled Tube Sample; R = Rock Core Sample; V = Field Vane Shear
Pen. = Penetration Length; Rec. = Recovery Length; bpf = Blows per Foot; mpf = Minute per Foot
WOR = Weight of Rods; WOH = Weight of Hammer; RQD = Rock Quality Designation; PID = Photoionization Detector
S_v = Field Vane Shear Strength, kips/sq.ft.; q_u = Unconfined Compressive Strength, kips/sq.ft.; N/A = Not Applicable

Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	SAMPLE INFORMATION: Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD	Field / Lab Test Data	Graphic Log	Sample Description & Classification	H_20 Depth	Remarks
60			1D		0.4-2.4	24/11	5-10-15-15			0.5 — 5 +/- in of Concrete Medium dense brown silty SAND, some silt, some gravel (Fill)		
										3.0 — Medium dense brown silty SAND, some gravel (Probable Fill)		
55	5		2D		5-7	24/11	13-16-30-31					
50	10		3D		10-12	24/18	4-3-4-5			10.0 — Loose becoming medium dense gray sandy clayey SILT, some coarse sand		
45	15		4D		15-17	24/10	20-10-5-8			16.0 — Loose becoming medium dense gray clayey SILT and sand, some gravel		
40	20		5D		20-22	24/9	1-3-4-3					
35	25		6D		25-27	24/1	7-9-14-18			28.0 — Dense becoming very dense dark gray SAND and silt, trace clay (Glacial Till)		
30	30		7D		30-32	24/10	24-19-16-18					
25	35		8D		35-37	24/20	35-36-38-47			37.0 — Bottom of Exploration at 37.0 feet		

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

BORING NO.: B-17-12

BORING LOG

CLIENT:	Maine Medical Center
PROJECT:	Maine Medical Center MOB
LOCATION:	Congress Street, Portland, Maine

BORING NO.:	B-17-13
SHEET:	1 of 2
PROJECT NO.	16-1136
DATE START:	11/6/2017
DATE FINISH:	11/6/2017

Drilling Information

LOCATION:	See Exploration Location Plan	**ELEVATION (FT):**	67' +/-	**TOTAL DEPTH (FT):**	51.9
LOGGED BY:	Paul Kohler	**DRILLING CO.:**	New England Boring	**DRILLER:**	Brett
DRILLING METHOD:	Cased Boring	**RIG TYPE:**	Soil Scout	**AUGER ID/OD:**	N/A / N/A
SAMPLER:	Standard Split-Spoon	**HAMMER TYPE:**	Donut	**HAMMER WEIGHT (lbs):**	140 / 300
CASING ID/OD:	4 in / 4 1/2 in	**CORE BARREL:**		**HAMMER EFFICIENCY FACTOR:**	
HAMMER DROP (inch):	30 / 16				

WATER LEVEL ELEVATIONS (ft): Soils wet to saturated at 15 ft +/-

GENERAL NOTES:

KEY TO NOTES AND SYMBOLS: Water Level: ▽ At time of Drilling; ▼ At Completion of Drilling; ▼ After Drilling

D = Split Spoon Sample; U = Thin Walled Tube Sample; R = Rock Core Sample; V = Field Vane Shear

Pen. = Penetration Length; Rec. = Recovery Length; bpf = Blows per Foot; mpf = Minute per Foot

WOR = Weight of Rods; WOH = Weight of Hammer; RQD = Rock Quality Designation; PID = Photoionization Detector

S_v = Field Vane Shear Strength, kips/sq.ft.; q_u = Unconfined Compressive Strength, kips/sq.ft.; N/A = Not Applicable

Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	SAMPLE INFORMATION: Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD	Field / Lab Test Data	Graphic Log	Sample Description & Classification	H_20 Depth	Remarks
65			1D		0.5-2.5	24/12	6-16-14-13			0.5 6 +/- in of Concrete Medium dense dark brown silty SAND, some gravel (Fill)		
	5		2D		4-4.5	6/2	120					
60										7.0 Very dense brown silty gravelly SAND (Probable Fill)		
	10		3D		10-12	24/10	36-51-45-44					
55								w =11 %				
	15		4D		15-17	24/4	5-17-9-9			14.0 Medium dense gray clayey silty SAND and gravel		
50										18.0 Soft gray silty CLAY		
	20		5D		20-22	24/24	WOH-WOH-WOH-1	q_P=0.2 ksf				
45								w =34.7 %				
	25		6D		25-27	24/18	WOH-WOH-5-4	q_P=0.2 ksf				
40								w =31.3 %		28.0 Medium dense gray clayey silty SAND and gravel		
	30		7D		30-32	24/4	11-9-10-9					
35								w =18.5 %				
	35		8D		35-37	24/19	7-8-8-11			35.0 Medium dense dark gray clayey SAND and silt, trace gravel (Glacial Till)		
30												

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

(Continued Next Page)

BORING LOG

CLIENT: Maine Medical Center
PROJECT: Maine Medical Center MOB
LOCATION: Congress Street, Portland, Maine

BORING NO.: B-17-13
SHEET: 2 of 2
PROJECT NO. 16-1136
DATE START: 11/6/2017
DATE FINISH: 11/6/2017

Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	SAMPLE INFORMATION: Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD	Field / Lab Test Data	Graphic Log	Sample Description & Classification	H_20 Depth	Remarks
25			9D		40-42	24/18	9-6-4-5	w =17.7 %				
	45		10D		45-47	24/12	16-17-14-12					
20										48.0 Very dense dark gray gravelly SAND and silt (Glacial Till)		
	50		11D		50-51.9	23/16	35-52-71-100/5"	w =9.2 %		51.9 Bottom of Exploration at 51.9 feet		

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

BORING LOG

CLIENT: Maine Medical Center
PROJECT: Maine Medical Center MOB
LOCATION: Congress Street, Portland, Maine

BORING NO.: B-17-14
SHEET: 1 of 1
PROJECT NO. 16-1136
DATE START: 11/7/2017
DATE FINISH: 11/7/2017

Drilling Information

LOCATION: See Exploration Location Plan
ELEVATION (FT): 71' +/-
TOTAL DEPTH (FT): 36.2
LOGGED BY: Paul Kohler
DRILLING CO.: New England Boring
DRILLER: Brett
DRILLING METHOD: Cased Boring
RIG TYPE: Soil Scout
AUGER ID/OD: N/A / N/A
SAMPLER: Standard Split-Spoon
HAMMER TYPE: Donut
HAMMER WEIGHT (lbs): 140 / 300
CASING ID/OD: 4 in / 4 1/2 in
CORE BARREL:
HAMMER EFFICIENCY FACTOR:
HAMMER DROP (inch): 30 / 16
WATER LEVEL ELEVATIONS (ft): Soils wet at 10 ft +/-
GENERAL NOTES:

KEY TO NOTES AND SYMBOLS:
Water Level: ▽ At time of Drilling; ▼ At Completion of Drilling; ▼ After Drilling
D = Split Spoon Sample; U = Thin Walled Tube Sample; R = Rock Core Sample; V = Field Vane Shear
Pen. = Penetration Length; Rec. = Recovery Length; bpf = Blows per Foot; mpf = Minute per Foot
WOR = Weight of Rods; WOH = Weight of Hammer; RQD = Rock Quality Designation; PID = Photoionization Detector
S_v = Field Vane Shear Strength, kips/sq.ft.; q_u = Unconfined Compressive Strength, kips/sq.ft.; N/A = Not Applicable

Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	SAMPLE INFORMATION: Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD	Field / Lab Test Data	Graphic Log	Sample Description & Classification	H_20 Depth	Remarks
70			1D		0.5-2.5	24/8	16-23-22-18			0.5 6 in +/- of Concrete Dense brown gravelly SAND, some silt (Fill)		
65	5		2D		5-7	24/10	41-28-19-21			4.0 Dense to very dense brown clayey silty SAND, some gravel (Probable Fill)		
60	10		3D		10-12	24/12	15-14-14-19	w =12.4 %		8.0 Medium dense brown clayey SAND and silt, trace gravel		
55	15		4D		15-17	24/12	60-73-62-15	w =14.4 %		14.0 Very dense brown silty SAND		
50	20		5D		20-22	24/10	51-28-17-19			18.0 Medium dense to dense grayish-brown clayey silty SAND, some gravel		
45	25		6D		25-27	24/9	27-28-14-22	q_P=1 to 1.5 ksf w =30.4 %		24.0 Dense brownish-gray sandy SILT and clay		
40	30		7D		30-30.9	11/11	21-100/5"	w =11.7 %		28.0 Dense to very dense grayish-brown SAND and silt, some gravel, trace clay (Glacial Till) 32.0 Very dense dark gray SAND and silt, some gravel, trace clay (Glacial Till)		
35	35		8D		35-36.2	14/11	44-85-100/2"	w =10.4 %		36.2 Bottom of Exploration at 36.2 feet		

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

BORING LOG

CLIENT: Maine Medical Center
PROJECT: Maine Medical Center MOB
LOCATION: Congress Street, Portland, Maine

BORING NO.: B-17-15
SHEET: 1 of 1
PROJECT NO. 16-1136
DATE START: 11/7/2017
DATE FINISH: 11/8/2017

Drilling Information

LOCATION: See Exploration Location Plan
ELEVATION (FT): 81' +/-
TOTAL DEPTH (FT): 32.0
LOGGED BY: Paul Kohler
DRILLING CO.: New England Boring
DRILLER: Brett
DRILLING METHOD: Cased Boring
RIG TYPE: Soil Scout
AUGER ID/OD: N/A / N/A
SAMPLER: Standard Split-Spoon
HAMMER TYPE: Donut
HAMMER WEIGHT (lbs): 140 / 300
CASING ID/OD: 4 in / 4 1/2 in
CORE BARREL:
HAMMER EFFICIENCY FACTOR:
HAMMER DROP (inch): 30 / 16
WATER LEVEL ELEVATIONS (ft): Soils wet to saturated at 5 +/- ft
GENERAL NOTES:

KEY TO NOTES AND SYMBOLS:
Water Level: ▽ At time of Drilling; ▼ At Completion of Drilling; ▼ After Drilling
D = Split Spoon Sample; U = Thin Walled Tube Sample; R = Rock Core Sample; V = Field Vane Shear
Pen. = Penetration Length; Rec. = Recovery Length; bpf = Blows per Foot; mpf = Minute per Foot
WOR = Weight of Rods; WOH = Weight of Hammer; RQD = Rock Quality Designation; PID = Photoionization Detector
S_v = Field Vane Shear Strength, kips/sq.ft.; q_u = Unconfined Compressive Strength, kips/sq.ft.; N/A = Not Applicable

Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	SAMPLE INFORMATION: Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD	Field / Lab Test Data	Graphic Log	Sample Description & Classification	H_20 Depth	Remarks
80			1D		0.5-2.5	24/12	3-10-11-19			0.5 6 in +/- of Concrete 1.0 Pea stone Medium dense light brown silty SAND (Fill)		
	5									4.0 Very stiff brown silty CLAY, some sand layers (possible Fill or disturbed soil)		
75			2D		5-7	24/20	9-7-12-12	q_P=5 ksf				
										8.0 Medium dense brown clayey SILT, some sand, some coarse sand		
	10											
70			3D		10-12	24/20	12-11-12-13	q_P=4 ksf w =12 %				
										14.0 Medium dense to dense dark gray clayey SAND and silt, some gravel (Glacial Till)		
	15											
65			4D		15-17	24/24	6-8-9-14	w =12.9 %				
	20											
60			5D		20-22	24/6	26-34-27-33	w =14 %				
	25											
55			6D		25-27	24/24	18-18-16-29					
										28.0 Very dense dark gray gravelly silty SAND and gravel, trace clay (Glacial Till)		
	30											
50			7D		30-32	24/24	32-29-45-71	w =8.6 %				
										32.0 Bottom of Exploration at 32.0 feet		

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

BORING LOG

CLIENT: Maine Medical Center
PROJECT: Proposed Gilman Street Garage & Congress St. Bldg
LOCATION: Gilman St. and Congress St., Portland, Maine

BORING NO.: B-16-1
SHEET: 1 of 2
PROJECT NO. 16-1136
DATE START: 11/21/2016
DATE FINISH: 11/21/2016

Drilling Information

LOCATION: See Exploration Location Plan | **ELEVATION (FT):** 44' +/- | **TOTAL DEPTH (FT):** 75.0 | **LOGGED BY:** Patrick Otto
DRILLING CO.: S. W. Cole Explorations, LLC | **DRILLER:** Kevin Hanscom | **DRILLING METHOD:** Cased Boring
RIG TYPE: Track Mounted Diedrich D-50 | **AUGER ID/OD:** N/A / N/A | **SAMPLER:** Standard Split-Spoon
HAMMER TYPE: Automatic / Automatic | **HAMMER WEIGHT (lbs):** 140 / 140 | **CASING ID/OD:** 4 in / 4 1/2 in | **CORE BARREL:**
HAMMER EFFICIENCY FACTOR: 0.79 | **HAMMER DROP (inch):** 30 / 16
WATER LEVEL DEPTHS (ft): ▽ 10 ft 11/21/2016 Soils saturated at 10'. Free water at 4.3' prior to casing.
GENERAL NOTES:

KEY TO NOTES AND SYMBOLS: Water Level: ▽ At time of Drilling; ▼ At Completion of Drilling; ▼ After Drilling
D = Split Spoon Sample; U = Thin Walled Tube Sample; R = Rock Core Sample; V = Field Vane Shear
Pen. = Penetration Length; Rec. = Recovery Length; bpf = Blows per Foot; mpf = Minute per Foot
WOR = Weight of Rods; WOH = Weight of Hammer; RQD = Rock Quality Designation; PID = Photoionization Detector
S_v = Field Vane Shear Strength, kips/sq.ft.; q_U = Unconfined Compressive Strength, kips/sq.ft.; N/A = Not Applicable

Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD	Field / Lab Test Data	Graphic Log	Sample Description & Classification	H_20 Depth	Remarks
			1D		0-2	24/13	4-11-9-10			0.5 Lawn area / loose, dark brown sandy SILT (FILL)		
40										Medium dense, gray-brown-black gravelly silty SAND with concrete pieces, brick and wire (FILL)		
	5		2D		5-7	24/12	8-20-10-4			4.0 Medium dense, concrete - probable relic building foundation / slab (FILL)		
										7.0 Gray-brown silty CLAY		
35										9.0 Medium, gray silty CLAY	▽	
	10		3D		10-12	24/22	1-1-1-1	q_P=< 0.5 ksf				
30												
	15		1S		15-17	24/24		W_L=42 W_P=20 w =28.2 %				
			1V		18-18.7	8		S_V=0.85/0.22ksf				
25			1V'		18.7-19.4	8		S_V=0.98/0.15ksf				
	20											
20										23.0 Medium dense, gray-brown SAND, some silt		
	25		4D		25-27	24/17	9-12-13-15					
15												
	30		5D		30-32	24/14	10-9-6-5	w =22.7 %				
										31.7 Gray silty SAND with clay layers		
10										33.0 Medium dense, dark gray silty SAND, some gravel, occasional cobbles (Glacial Till)		
	35		6D		35-37	24/14	6-5-7-8					
5												

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

(Continued Next Page)

BORING LOG

S.W.COLE ENGINEERING, INC.

CLIENT: Maine Medical Center
PROJECT: Proposed Gilman Street Garage & Congress St. Bldg
LOCATION: Gilman St. and Congress St., Portland, Maine

BORING NO.: B-16-1
SHEET: 2 of 2
PROJECT NO. 16-1136
DATE START: 11/21/2016
DATE FINISH: 11/21/2016

Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	SAMPLE INFORMATION: Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD	Field / Lab Test Data	Graphic Log	Sample Description & Classification	H_20 Depth	Remarks
			7D		40-42	24/17	9-16-28-25	w =10.7 %		Dense, gray gravelly SAND and silt (Glacial Till)		
0	45		8D		45-47	24/8	16-18-19-36					
-5	50		9D		50-52	24/14	14-24-29-33					
-10	55		10D		55-56.4	17/12	23-46-52/5"					
-15	60		11D		60-61.9	23/20	37-44-52-51/5"	w =7.3 %		Very dense, gray gravelly SAND and silt (Glacial Till)		
-20	65		12D		65-66.3	15/12	24-47-50/3"					
-25	70		13D		70-71.8	22/20	26-28-34-52/4"	w =15.9 %		Very dense, gray SILT and sand, trace gravel (Glacial Till)		
-30	75									73.3 Advanced by roller cone (Probable Bedrock)		
										75.0 Bottom of Exploration at 75.0 feet Probable Bedrock		

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

BORING LOG

CLIENT:	Maine Medical Center
PROJECT:	Proposed Gilman Street Garage & Congress St. Bldg
LOCATION:	Gilman St. and Congress St., Portland, Maine

BORING NO.:	B-16-2
SHEET:	1 of 2
PROJECT NO.	16-1136
DATE START:	11/22/2016
DATE FINISH:	11/23/2016

Drilling Information

LOCATION: See Exploration Location Plan **ELEVATION (FT):** 39' +/- **TOTAL DEPTH (FT):** 73.5 **LOGGED BY:** Patrick Otto

DRILLING CO.: S. W. Cole Explorations, LLC **DRILLER:** Kevin Hanscom **DRILLING METHOD:** Cased Boring

RIG TYPE: Track Mounted Diedrich D-50 **AUGER ID/OD:** N/A / N/A **SAMPLER:** Standard Split-Spoon

HAMMER TYPE: Automatic / Automatic **HAMMER WEIGHT (lbs):** 140 / 140 **CASING ID/OD:** 4 in / 4 1/2 in **CORE BARREL:**

HAMMER EFFICIENCY FACTOR: 0.79 **HAMMER DROP (inch):** 30 / 16

WATER LEVEL DEPTHS (ft): ▼ 21.4 ft 12/8/2017

GENERAL NOTES: Bottom of Piezometer at 22.6' with 5' screen. FW at 22.3' on 1/4/2017 and 22.5' on 12/11/2016

KEY TO NOTES AND SYMBOLS:
Water Level: ▽ At time of Drilling; ▼ At Completion of Drilling; ▼ After Drilling
D = Split Spoon Sample; U = Thin Walled Tube Sample; R = Rock Core Sample; V = Field Vane Shear
Pen. = Penetration Length; Rec. = Recovery Length; bpf = Blows per Foot; mpf = Minute per Foot
WOR = Weight of Rods; WOH = Weight of Hammer; RQD = Rock Quality Designation; PID = Photoionization Detector
S_v = Field Vane Shear Strength, kips/sq.ft.; q_U = Unconfined Compressive Strength, kips/sq.ft.; N/A = Not Applicable

Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	SAMPLE INFORMATION: Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD	Field / Lab Test Data	Graphic Log	Sample Description & Classification	H_2O Depth	Remarks
			1D		0.6-2.6	24/15	8-7-3-2			2 3/4" Asphalt over medium dense, brown gravelly SAND, some silt (FILL)		
										1.5 Loose, gray silty SAND (FILL) -Petroleum odor-		
			2D		2.6-4.6	24/20	4-4-4-4	PID= 3,050 ppm				
35										4.0 Loose, gray-brown clayey sandy SILT (FILL / REWORKED)		
	5		3D		5-7	24/22	6-5-8-9	q_P=6.5 to 8 ksf w =26.8 %		5.0 Very stiff, brown silty CLAY		
30												
	10		4D		10-12	24/22	2-3-4-3	q_P=3 to 4 ksf		Stiff, with occasional sand seams		
25										13.0 Medium, gray silty CLAY		
	15		5D		15-17	24/14	WOH-1-2-3	q_P=< 0.5 ksf w =36.6 %				
20										18.0 Medium dense, brown silty SAND		
	20		6D		20-22	24/14	6-5-8-9				▼	
15										24.0 Medium dense, rust brown-brown silty SAND with gray silty clay layers		
	25		7D		25-27	24/17	3-8-11-10					
10												
	30		8D		30-32	24/20	1-9-8-9			31.0 Medium dense, dark gray SILT and sand, some gravel, occasional cobbles (Glacial Till)		
5												
	35		9D		35-37	24/18	7-10-13-18					
0												

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

(Continued Next Page)

BORING LOG

S.W.COLE ENGINEERING, INC.

CLIENT: Maine Medical Center
PROJECT: Proposed Gilman Street Garage & Congress St. Bldg
LOCATION: Gilman St. and Congress St., Portland, Maine

BORING NO.: B-16-2
SHEET: 2 of 2
PROJECT NO. 16-1136
DATE START: 11/22/2016
DATE FINISH: 11/23/2016

Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	SAMPLE INFORMATION: Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD	Field / Lab Test Data	Graphic Log	Sample Description & Classification	H_20 Depth	Remarks
			10D		40-42	24/18	7-11-21-27	w =10.9 %		Dense, dark gray SAND and silt, some gravel, trace clay (Glacial Till)		
-5	45		11D		45-47	24/1	7-8-9-6			Medium dense		
-10	50		12D		50-52	24/22	7-9-11-24			More silty and clayey		
-15	55		13D		55-55.9	11/11	41-74/5"			Very dense		
										57.0 Very dense, gray SILT and sand, some clay, trace gravel (Glacial Till)		
-20	60		14D		60-60.9	11/11	28-60/5"	w =39.6 %				
-25	65		15D		65-65.4	5/5	50/5"					
										68.0 Very dense, gray gravelly SAND and silt, some clay (Glacial Till)		
-30	70		16D		70-70.3	4/4	50/4"			70.3 Advanced by roller cone (Probable Bedrock)		
										73.5 Bottom of Exploration at 73.5 feet Probable Bedrock		

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

BORING LOG

CLIENT: Maine Medical Center
PROJECT: Proposed Gilman Street Garage & Congress St. Bldg
LOCATION: Gilman St. and Congress St., Portland, Maine

BORING NO.: B-16-3
SHEET: 1 of 2
PROJECT NO. 16-1136
DATE START: 11/30/2016
DATE FINISH: 11/30/2016

Drilling Information

LOCATION: See Exploration Location Plan | **ELEVATION (FT):** 60' +/- | **TOTAL DEPTH (FT):** 79.1 | **LOGGED BY:** Paul Kohler
DRILLING CO.: S. W. Cole Explorations, LLC | **DRILLER:** Scott Hollabaugh | **DRILLING METHOD:** Cased Boring
RIG TYPE: Track Mounted Diedrich D-50 | **AUGER ID/OD:** N/A / N/A | **SAMPLER:** Standard Split-Spoon
HAMMER TYPE: Automatic / Automatic | **HAMMER WEIGHT (lbs):** 140 / 140 | **CASING ID/OD:** 4 in / 4 1/2 in | **CORE BARREL:**
HAMMER EFFICIENCY FACTOR: 0.87 | **HAMMER DROP (inch):** 30 / 16
WATER LEVEL DEPTHS (ft): ▼ 35.6 ft 12/8/2017
GENERAL NOTES: Soils saturated at 10'. Bottom of Piezometer at 36.7' with 5' screen. FW at 35.3' on 12/11/2016 and 1/5/2017.

KEY TO NOTES AND SYMBOLS:
Water Level: ▽ At time of Drilling; ▼ At Completion of Drilling; ▼ After Drilling
D = Split Spoon Sample; U = Thin Walled Tube Sample; R = Rock Core Sample; V = Field Vane Shear
Pen. = Penetration Length; Rec. = Recovery Length; bpf = Blows per Foot; mpf = Minute per Foot
WOR = Weight of Rods; WOH = Weight of Hammer; RQD = Rock Quality Designation; PID = Photoionization Detector
S_v = Field Vane Shear Strength, kips/sq.ft.; q_U = Unconfined Compressive Strength, kips/sq.ft.; N/A = Not Applicable

Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD	Field / Lab Test Data	Graphic Log	Sample Description & Classification	H_20 Depth	Remarks
			1D		0.3-2.3	24/14	4-4-7-5			3" Asphalt over medium dense, dark brown silty SAND, some gravel (FILL)		
			2D		2.3-4.3	24/10	4-5-3-4			2.0 Loose, light brown gravelly SAND, some silt (FILL)		
55	5		3D		4.3-6.3	24/20	3-4-6-4			5.0 Medium dense, brown clayey silty fine SAND, some gravel (Probable FILL)		
50	10		4D		10-12	24/18	2-6-4-2	w =29.2 %		11.5 Medium to stiff, brown sandy silty CLAY		
45	15		5D		14-16	24/24	WOR / 24"			14.0 Medium, gray silty CLAY		
40	20		1S		19-21	24/24		W_L=48 W_P=20 w =40.6 %				
			1V		22-22.7	8		S_V=1.00/0.13ksf				
			1V'		22.7-23.4	8		S_V=0.99/0.16ksf				
35	25		6D		24-26	24/24	WOH / 18"-2	w =36.9 %		25.5 Probable gray silty CLAY with sand layers		
30	30		2V		29-29.7	8		S_V=1.00+ksf		No vane rotation		
25	35		7D		34-36	24/15	8-11-14-19			33.0 Medium dense, light brown SAND, some silt	▼	
			8D		39-41	24/16	9-12-			38.0		

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

(Continued Next Page)

BORING LOG

CLIENT: Maine Medical Center
PROJECT: Proposed Gilman Street Garage & Congress St. Bldg
LOCATION: Gilman St. and Congress St., Portland, Maine

BORING NO.: B-16-3
SHEET: 2 of 2
PROJECT NO. 16-1136
DATE START: 11/30/2016
DATE FINISH: 11/30/2016

Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	SAMPLE INFORMATION: Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD	Field / Lab Test Data	Graphic Log	Sample Description & Classification	H_20 Depth	Remarks
							12-12			Medium dense, gray SAND and silt, some clay, trace gravel, occasional cobbles (Glacial Till)		
15	45		9D		44-46	24/21	5-12-8-9					
10	50		10D		49-51	24/22	12-14-11-13	w =12.1 %		Medium dense, gray SAND and silt, some clay, some gravel (Glacial Till)		
5	55		11D		54-56	24/16	11-13-19-26					
0	60		12D		59-60.9	23/10	45-19-49-50/5"			Very dense, more gravel		
-5	65		13D		64-65.9	23/15	24-35-46-50/5"					
-10	70		14D		69-69.9	11/8	43-50/5"					
										71.0 Very dense, probable Glacial Till and weathered rock		
-15	75		15D		74-74.3	3/3	50/3"			74.3 Advanced by roller cone (Probable Bedrock)		
			16D		79-79.1	1/0	50/1"			79.1 Refusal at 79.1 feet Probable Bedrock		

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

BORING LOG

CLIENT:	Maine Medical Center
PROJECT:	Proposed Gilman Street Garage & Congress St. Bldg
LOCATION:	Gilman St. and Congress St., Portland, Maine

BORING NO.:	**B-16-4**
SHEET:	1 of 2
PROJECT NO.	16-1136
DATE START:	11/30/2016
DATE FINISH:	12/1/2016

Drilling Information

LOCATION: See Exploration Location Plan **ELEVATION (FT):** 49' +/- **TOTAL DEPTH (FT):** 68.1 **LOGGED BY:** Patrick Otto

DRILLING CO.: S. W. Cole Explorations, LLC **DRILLER:** Scott Hollabaugh **DRILLING METHOD:** Cased Boring

RIG TYPE: Track Mounted Diedrich D-50 **AUGER ID/OD:** N/A / N/A **SAMPLER:** Standard Split-Spoon

HAMMER TYPE: Automatic / Automatic **HAMMER WEIGHT (lbs):** 140 / 140 **CASING ID/OD:** 4 in / 4 1/2 in **CORE BARREL:**

HAMMER EFFICIENCY FACTOR: 0.87 **HAMMER DROP (inch):** 30 / 16

WATER LEVEL DEPTHS (ft): ▽ 20 ft 12/2/2016 Soils wet at 4.5'

GENERAL NOTES:

KEY TO NOTES AND SYMBOLS: Water Level; ▽ At time of Drilling; ▼ At Completion of Drilling; ▼ After Drilling; D = Split Spoon Sample; U = Thin Walled Tube Sample; R = Rock Core Sample; V = Field Vane Shear; Pen. = Penetration Length; Rec. = Recovery Length; bpf = Blows per Foot; mpf = Minute per Foot; WOR = Weight of Rods; WOH = Weight of Hammer; RQD = Rock Quality Designation; PID = Photoionization Detector; S_v = Field Vane Shear Strength, kips/sq.ft.; q_U = Unconfined Compressive Strength, kips/sq.ft.; N/A = Not Applicable

Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD	Field / Lab Test Data	Graphic Log	Sample Description & Classification	H_2O Depth	Remarks
			1D		0.4-2.4	24/15	6-4-3-2			1.0 3" Asphalt over loose, brown gravelly SAND, some silt (FILL)		
			2D		2.4-4.4	24/4	3-3-3-2			2.1 Loose, brown SAND, some silt (FILL) Loose, dark brown SAND and silt (FILL)		
45	5		3D		4.4-6.4	24/18	4-6-7-5			4.5 Loose, brown SAND, some silt (FILL)		
										5.5 Medium dense, brown sandy clayey SILT, trace gravel (FILL)		
40	10		4D		9-11	24/20	3-4-5-5	q_P=4 to 5 ksf		7.0 Stiff, brown silty CLAY with frequent sand seams		
35	15		5D		14-16	24/22	2-2-2-3	q_P=1 to 2 ksf		13.0 Medium, gray-brown silty CLAY with occasional sand seams		
30	20		6D		19-21	24/12	12-7-12-13			18.0 Medium dense, brown SAND, some silt with occasional gray clayey silt seams some gravel below 25'	▽	
25	25		7D		24-26	24/12	6-12-11-9					
20	30		8D		29-31	24/10	7-5-6-14			29.0 Medium dense, rust brown-brown SAND with gray clayey silt layers		
15	35		9D		34-36	24/2	2-2-5-5			33.0 Loose, gray-brown sandy clayey SILT		
10			10D		39-41	24/18	4-5-6-9			39.0		

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

(Continued Next Page)

BORING LOG

CLIENT: Maine Medical Center
PROJECT: Proposed Gilman Street Garage & Congress St. Bldg
LOCATION: Gilman St. and Congress St., Portland, Maine

BORING NO.: B-16-4
SHEET: 2 of 2
PROJECT NO. 16-1136
DATE START: 11/30/2016
DATE FINISH: 12/1/2016

Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	SAMPLE INFORMATION: Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD	Field / Lab Test Data	Graphic Log	Sample Description & Classification	H_20 Depth	Remarks
										Medium dense, gray SILT and sand, some clay, trace gravel, occasional cobbles (Glacial Till)		
5	45		11D		45-47	24/16	12-12-19-18			Dense		
0	50		12D		50-51.4	17/17	46-45-50/5"			Very dense		
-5	55		13D		55-56.5	18/18	25-34-50					
-10	60		14D		60-61.8	22/20	17-22-38-50/4"					
-15	65		15D		65-65.2	2/2	50/2"			65.5 Advanced by roller cone (Probable Bedrock)		
			16D		68-68.1	1/1	50/1"			68.1 Refusal at 68.1 feet Probable Bedrock		

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

BORING LOG

CLIENT:	Maine Medical Center
PROJECT:	Proposed Gilman Street Garage & Congress St. Bldg
LOCATION:	Gilman St. and Congress St., Portland, Maine

BORING NO.:	**B-16-5**
SHEET:	1 of 2
PROJECT NO.	16-1136
DATE START:	12/1/2016
DATE FINISH:	12/2/2016

Drilling Information

LOCATION: See Exploration Location Plan **ELEVATION (FT):** 53' +/- **TOTAL DEPTH (FT):** 75.1 **LOGGED BY:** Patrick Otto

DRILLING CO.: S. W. Cole Explorations, LLC **DRILLER:** Jeff Lee **DRILLING METHOD:** Cased Boring

RIG TYPE: Track Mounted CME 850 **AUGER ID/OD:** N/A / N/A **SAMPLER:** Standard Split-Spoon

HAMMER TYPE: Automatic / Automatic **HAMMER WEIGHT (lbs):** 140 / 140 **CASING ID/OD:** 4 in / 4 1/2 in **CORE BARREL:**

HAMMER EFFICIENCY FACTOR: 0.81 **HAMMER DROP (inch):** 30 / 16

WATER LEVEL DEPTHS (ft): ▽ 4.5 ft 12/1/2016 Free water at 4.5' during drilling

GENERAL NOTES:

KEY TO NOTES AND SYMBOLS: Water Level; ▽ At time of Drilling; ▼ At Completion of Drilling; ▼ After Drilling; D = Split Spoon Sample; U = Thin Walled Tube Sample; R = Rock Core Sample; V = Field Vane Shear; Pen. = Penetration Length; Rec. = Recovery Length; bpf = Blows per Foot; mpf = Minute per Foot; WOR = Weight of Rods; WOH = Weight of Hammer; RQD = Rock Quality Designation; PID = Photoionization Detector; S_v = Field Vane Shear Strength, kips/sq.ft.; q_U = Unconfined Compressive Strength, kips/sq.ft.; N/A = Not Applicable

Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	SAMPLE INFORMATION: Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD	Field / Lab Test Data	Graphic Log	Sample Description & Classification	H_20 Depth	Remarks
50			1D		0.5-2.5	24/12	4-6-5-6			0.5 6" +/- Concrete Medium dense, brown gravelly SAND, some silt (FILL)		
	5		2D		5-7	24/22	3-3-3-5	q_P=3 to 4 ksf		4.0 Stiff to medium, brown silty CLAY with frequent fine sand seams	▽	
45												
	10		3D		10-12	24/22	2-1-2-3	q_P=1.5 to <0.5 ksf		10.5 Medium, gray silty CLAY with frequent sand seams / layers		
40												
	15		4D		15-17	24/23	2-3-6-6			15.5 Loose, brown silty SAND with gray clayey silt layers		
35												
	20		5D		20-22	24/12	12-11-10-14			19.0 Medium dense, rust brown-brown fine SAND with clayey silt layers		
30												
	25		6D		25-27	24/11	12-14-16-18	w =13.6 %		25.0 Medium dense, light brown SAND, some silt		
25												
	30		7D		30-32	24/16	10-8-7-9			29.0 Medium dense, gray clayey silty SAND, some gravel, occasional cobbles (Glacial Till)		
20												
	35		8D		35-37	24/1	13-14-20-22			Dense		
15												

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

(Continued Next Page)

BORING LOG

S.W.COLE ENGINEERING, INC.

CLIENT: Maine Medical Center
PROJECT: Proposed Gilman Street Garage & Congress St. Bldg
LOCATION: Gilman St. and Congress St., Portland, Maine

BORING NO.: B-16-5
SHEET: 2 of 2
PROJECT NO. 16-1136
DATE START: 12/1/2016
DATE FINISH: 12/2/2016

Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	SAMPLE INFORMATION: Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD	Field / Lab Test Data	Graphic Log	Sample Description & Classification	H_20 Depth	Remarks
			9D		40-42	24/14	13-12-56-35			41.0 Very dense, dark gray SAND and silt, some gravel, occasional cobbles (Glacial Till)		
10	45		10D		45-45.7	8/6	33-50/2"	w =9.9 %				
5	50		11D		50-52	24/24	21-27-35-48					
0	55		12D		55-57	24/22	23-38-38-55					
-5	60		13D		60-61.5	18/17	36-33-50	w =8.6 %				
-10	65		14D		65-67	24/20	26-30-23-63	w =28.4 %		65.0 Very dense, dark gray clayey SILT, some sand		
-15	70		15D		70-70.2	2/2	50/2"					
-20	75									73.0 Advanced by roller cone (Probable Bedrock)		
										75.1 Bottom of Exploration at 75.1 feet Probable Bedrock		

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

BORING LOG

CLIENT:	Maine Medical Center
PROJECT:	Proposed Gilman Street Garage & Congress St. Bldg
LOCATION:	Gilman St. and Congress St., Portland, Maine

BORING NO.:	**B-16-6**
SHEET:	1 of 2
PROJECT NO.	16-1136
DATE START:	12/5/2016
DATE FINISH:	12/5/2016

Drilling Information

LOCATION: See Exploration Location Plan **ELEVATION (FT):** 50' +/- **TOTAL DEPTH (FT):** 70.0 **LOGGED BY:** Paul Kohler

DRILLING CO.: S. W. Cole Explorations, LLC **DRILLER:** Scott Hollabaugh **DRILLING METHOD:** Cased Boring

RIG TYPE: Track Mounted Diedrich D-50 **AUGER ID/OD:** N/A / N/A **SAMPLER:** Standard Split-Spoon

HAMMER TYPE: Automatic / Automatic **HAMMER WEIGHT (lbs):** 140 / 140 **CASING ID/OD:** 4 in / 4 1/2 in **CORE BARREL:**

HAMMER EFFICIENCY FACTOR: 0.87 **HAMMER DROP (inch):** 30 / 16

WATER LEVEL DEPTHS (ft): ▽ 18 ft 12/5/2016 Soils saturated at 30'. Free water at 18' when casing pulled

GENERAL NOTES:

KEY TO NOTES AND SYMBOLS: Water Level; ▽ At time of Drilling; ▼ At Completion of Drilling; ▼ After Drilling; D = Split Spoon Sample; U = Thin Walled Tube Sample; R = Rock Core Sample; V = Field Vane Shear; Pen. = Penetration Length; Rec. = Recovery Length; bpf = Blows per Foot; mpf = Minute per Foot; WOR = Weight of Rods; WOH = Weight of Hammer; RQD = Rock Quality Designation; PID = Photoionization Detector; S_v = Field Vane Shear Strength, kips/sq.ft.; q_U = Unconfined Compressive Strength, kips/sq.ft.; N/A = Not Applicable

Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	SAMPLE INFORMATION: Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD	Field / Lab Test Data	Graphic Log	Sample Description & Classification	H_20 Depth	Remarks
			1D		0-2	24/20	1-12-12-9			Bark mulch and topsoil		
										1.0 Medium dense, brown silty SAND, some gravel (FILL) Note: Hit probable concrete at 4', moved boring 5' west		
45	5		2D		5-7	24/24	2-3-4-4	q_P=4 to 6 ksf		5.0 Stiff to very stiff, brown silty CLAY (disturbed/FILL)		
										8.0 Stiff, brown silty CLAY with sand layers		
40	10		3D		10-12	24/24	3-3-3-5	w =34.1 %				
										13.0 Medium dense, light brown SAND, trace silt		
35	15		4D		15-17	24/16	6-9-9-12	w =6.2 %			▽	
										18.0 Medium dense, brown silty SAND with gray silt layers		
30	20		5D		20-22	24/12	13-12-14-15					
25	25		6D		25-27	24/15	5-9-10-7					
20	30		7D		30-32	24/24	2-1-1-4			31.0 Very loose, gray clayey silty SAND		
										34.0 Medium dense, dark gray SAND and silt, some clay, some gravel, occasional cobbles (Glacial Till)		
15	35		8D		35-37	24/14	8-12-10-14	w =13.3 %				

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

(Continued Next Page)

BORING LOG

S.W.COLE ENGINEERING, INC.

CLIENT: Maine Medical Center
PROJECT: Proposed Gilman Street Garage & Congress St. Bldg
LOCATION: Gilman St. and Congress St., Portland, Maine

BORING NO.: B-16-6
SHEET: 2 of 2
PROJECT NO. 16-1136
DATE START: 12/5/2016
DATE FINISH: 12/5/2016

Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	SAMPLE INFORMATION: Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD	Field / Lab Test Data	Graphic Log	Sample Description & Classification	H_20 Depth	Remarks
			9D		40-41.9	23/23	15-17-45-50/5"			Very dense		
5	45		10D		45-46.3	15/12	22-43-50/3"					
0	50		11D		50-51.9	23/20	18-33-33-50/5"	w =10.3 %		Very dense, gray SAND and silt, trace gravel, occasional cobbles (Glacial Till)		
-5	55		12D		55-55.4	5/5	50/5"					
-10	60		13D		60-60.8	10/6	53-50/4"			More sandy		
										63.0 Very dense, dark gray sandy clayey SILT		
-15	65		14D		65-66.8	22/20	25-23-25-50/4"					
										68.0 Advanced by roller cone (Probable Bedrock)		
-20	70		15D		70-70	0/0	25/0"			70.0 Refusal at 70.0 feet Probable Bedrock		

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

BORING NO.: B-16-6

BORING LOG

CLIENT:	Maine Medical Center
PROJECT:	Proposed Gilman Street Garage & Congress St. Bldg
LOCATION:	Gilman St. and Congress St., Portland, Maine

BORING NO.:	B-16-7
SHEET:	1 of 2
PROJECT NO.	16-1136
DATE START:	12/7/2016
DATE FINISH:	12/8/2016

Drilling Information

LOCATION: See Exploration Location Plan **ELEVATION (FT):** 46' +/- **TOTAL DEPTH (FT):** 79.5 **LOGGED BY:** Paul Kohler

DRILLING CO.: S. W. Cole Explorations, LLC **DRILLER:** Scott Hollabaugh **DRILLING METHOD:** Cased Boring

RIG TYPE: Track Mounted Diedrich D-50 **AUGER ID/OD:** N/A / N/A **SAMPLER:** Standard Split-Spoon

HAMMER TYPE: Automatic / Automatic **HAMMER WEIGHT (lbs):** 140 / 140 **CASING ID/OD:** 4 in / 4 1/2 in **CORE BARREL:**

HAMMER EFFICIENCY FACTOR: 0.87 **HAMMER DROP (inch):** 30 / 16

WATER LEVEL DEPTHS (ft): 12/7/2016 Soils saturated below 34.5'

GENERAL NOTES:

KEY TO NOTES AND SYMBOLS: Water Level: ▽ At time of Drilling; ▼ At Completion of Drilling; ▼ After Drilling

D = Split Spoon Sample; U = Thin Walled Tube Sample; R = Rock Core Sample; V = Field Vane Shear

Pen. = Penetration Length; Rec. = Recovery Length; bpf = Blows per Foot; mpf = Minute per Foot

WOR = Weight of Rods; WOH = Weight of Hammer; RQD = Rock Quality Designation; PID = Photoionization Detector

S_v = Field Vane Shear Strength, kips/sq.ft.; q_U = Unconfined Compressive Strength, kips/sq.ft.; N/A = Not Applicable

Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	SAMPLE INFORMATION: Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD	Field / Lab Test Data	Graphic Log	Sample Description & Classification	H_20 Depth	Remarks
45			1D		0-2	24/10	2-4-5-5			Loose, dark brown silty SAND, some gravel, organics (FILL)		
										3.0 Medium dense, brown silty SAND (FILL)		
40	5		2D		5-7	24/16	11-10-13-19					
			3D		8.5-10.5	24/22	3-4-4-4	q_P=2 ksf		8.0 Stiff, brown silty CLAY		
35	10		4D		13.5-15.5	24/24	2-3-4-5			Frequent sand seams		
30	15		5D		18.5-20.5	24/24	3-4-5-6			19.5 Loose to medium dense, rust brown SAND, some silt		
25	20		6D		23.5-25.5	24/18	10-11-13-13					
20	25		7D		29.5-31.5	24/20	13-13-17-20					
15	30		8D		34.5-36.5	24/22	3-7-5-4			33.0 Medium dense, gray-brown clayey SAND with clayey silt layers		
10	35		9D		39-40.5	18/12	20-33-			38.0		

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

(Continued Next Page)

BORING LOG

S.W.COLE ENGINEERING, INC.

CLIENT: Maine Medical Center
PROJECT: Proposed Gilman Street Garage & Congress St. Bldg
LOCATION: Gilman St. and Congress St., Portland, Maine

BORING NO.: B-16-7
SHEET: 2 of 2
PROJECT NO. 16-1136
DATE START: 12/7/2016
DATE FINISH: 12/8/2016

Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	SAMPLE INFORMATION: Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD	Field / Lab Test Data	Graphic Log	Sample Description & Classification	H_20 Depth	Remarks
5							50			Very dense, brown SAND and silt, some gravel, occasional boulders (Glacial Till)		
	45		10D		43.5-44.4	11/4	37-50/5"					
0												
	50		11D		48.5-50.4	23/18	40-43-42-50/5"					
-5												
	55		12D		53.5-54.5	12/12	39-50					
-10												
	60		13D		58.5-59.3	10/8	42-50/4"					
-15												
	65											
-20												
	70		14D		68.5-68.9	5/4	50/5"			Very dense, gray-brown silty SAND, trace gravel (Glacial Till)		
-25												
	75											
-30												
			15D		78.5-79.5	12/8	37-50			78.5 Very dense, dark gray SILT and sand, trace gravel (Glacial Till) 79.5		

Bottom of Exploration at 79.5 feet
Probable Bedrock

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

BORING LOG

CLIENT:	Maine Medical Center
PROJECT:	Proposed Gilman Street Garage & Congress St. Bldg
LOCATION:	Gilman St. and Congress St., Portland, Maine

BORING NO.:	**B-16-8**
SHEET:	1 of 2
PROJECT NO.	16-1136
DATE START:	12/6/2016
DATE FINISH:	12/6/2016

Drilling Information

LOCATION: See Exploration Location Plan **ELEVATION (FT):** 59' +/- **TOTAL DEPTH (FT):** 81.0 **LOGGED BY:** Paul Kohler

DRILLING CO.: S. W. Cole Explorations, LLC **DRILLER:** Scott Hollabaugh **DRILLING METHOD:** Cased Boring

RIG TYPE: Track Mounted Diedrich D-50 **AUGER ID/OD:** N/A / N/A **SAMPLER:** Standard Split-Spoon

HAMMER TYPE: Automatic / Automatic **HAMMER WEIGHT (lbs):** 140 / 140 **CASING ID/OD:** 4 in / 4 1/2 in **CORE BARREL:**

HAMMER EFFICIENCY FACTOR: 0.87 **HAMMER DROP (inch):** 30 / 16

WATER LEVEL DEPTHS (ft): ▼ 20.3 ft 12/8/2017

GENERAL NOTES: Bottom of Piezometer at 38' with 5' screen. FW at 20.7' on 12/11/2016 and 14' on 1/4/2017

KEY TO NOTES AND SYMBOLS:
Water Level: ▽ At time of Drilling; ▼ At Completion of Drilling; ▼ After Drilling
D = Split Spoon Sample; U = Thin Walled Tube Sample; R = Rock Core Sample; V = Field Vane Shear
Pen. = Penetration Length; Rec. = Recovery Length; bpf = Blows per Foot; mpf = Minute per Foot
WOR = Weight of Rods; WOH = Weight of Hammer; RQD = Rock Quality Designation; PID = Photoionization Detector
S_v = Field Vane Shear Strength, kips/sq.ft.; q_u = Unconfined Compressive Strength, kips/sq.ft.; N/A = Not Applicable

Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	SAMPLE INFORMATION: Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD	Field / Lab Test Data	Graphic Log	Sample Description & Classification	H_20 Depth	Remarks
			1D		0-2	24/8	4-4-7-8			Bark mulch and topsoil (FILL)		
										1.5 Loose, brown-gray clayey SILT and sandy silty CLAY (mixed FILL)		
55	5		2D		5-7	24/15	3-3-4-5					
50	10		3D		9-11	24/14	3-2-3-3					
										13.0 Medium, gray silty CLAY with sand seams		
45	15		4D		14-16	24/24	WOH / 12"-1-1	w =39.7 %				
										18.0 Medium dense, rust brown-brown silty SAND with clayey silt layers		
40	20		5D		19-21	24/16	5-7-9-8	w =23.8 %			▼	
										23.0 Medium dense, gray SAND and silt, some clay, occasional cobbles (Glacial Till)		
35	25		6D		24-26	24/10	8-6-5-7	w =13.4 %				
30	30		7D		29-31	24/22	10-13-13-18					
										33.0 Dense, brown clayey SILT and sand		
25	35		8D		34-36	24/13	17-16-21-24					
										37.0		
20			9D		39-41	24/16	20-16-					

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

(Continued Next Page)

BORING LOG

S.W.COLE ENGINEERING, INC.

CLIENT: Maine Medical Center
PROJECT: Proposed Gilman Street Garage & Congress St. Bldg
LOCATION: Gilman St. and Congress St., Portland, Maine

BORING NO.: B-16-8
SHEET: 2 of 2
PROJECT NO. 16-1136
DATE START: 12/6/2016
DATE FINISH: 12/6/2016

Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	SAMPLE INFORMATION: Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD	Field / Lab Test Data	Graphic Log	Sample Description & Classification	H_20 Depth	Remarks
							15-24	w =13.3 %		Dense, brown SAND and silt, some gravel, occasional cobbles (Glacial Till)		
15	45		10D		44-46	24/14	11-12-12-9					
										48.0 Very dense, gray SAND and silt, some clay, some gravel, occasional cobbles (Glacial Till)		
10	50		11D		49.5-50.9	17/16	28-37-50/5"					
5	55		12D		54-54.9	11/8	54-50/5"	w =8.5 %				
0	60		13D		59-60.8	22/18	17-27-31-50/4"			60.5 Very dense, brown-gray silty SAND with clayey silt layers		
-5	65		14D		64-64.8	10/9	32-50/4"					
-10	70		15D		69-70.3	16/12	47-58-50/4"					
-15	75									77.0 Very dense, gray silty SAND, some gravel		
-20	80		16D		79-79.5	6/6	77					
										81.0 Bottom of Exploration at 81.0 feet		

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

BORING LOG

CLIENT: Maine Medical Center
PROJECT: Proposed Gilman Street Garage & Congress St. Bldg
LOCATION: Gilman St. and Congress St., Portland, Maine

BORING NO.: B-16-9
SHEET: 1 of 2
PROJECT NO. 16-1136
DATE START: 12/9/2016
DATE FINISH: 12/9/2016

Drilling Information

LOCATION: See Exploration Location Plan | **ELEVATION (FT):** 66' +/- | **TOTAL DEPTH (FT):** 81.5 | **LOGGED BY:** Paul Kohler
DRILLING CO.: S. W. Cole Explorations, LLC | **DRILLER:** Scott Hollabaugh | **DRILLING METHOD:** Cased Boring
RIG TYPE: Track Mounted Diedrich D-50 | **AUGER ID/OD:** N/A / N/A | **SAMPLER:** Standard Split-Spoon
HAMMER TYPE: Automatic / Automatic | **HAMMER WEIGHT (lbs):** 140 / 140 | **CASING ID/OD:** 4 in / 4 1/2 in | **CORE BARREL:**
HAMMER EFFICIENCY FACTOR: 0.87 | **HAMMER DROP (inch):** 30 / 16
WATER LEVEL DEPTHS (ft): ▼ 10.8 ft 12/8/2017
GENERAL NOTES: Bottom of Piezometer at 39' with 5' screen. FW at 35.1' on 12/11/2016 and 30.9' on 1/4/2017

KEY TO NOTES AND SYMBOLS:
Water Level: ▽ At time of Drilling; ▼ At Completion of Drilling; ▼ After Drilling
D = Split Spoon Sample; U = Thin Walled Tube Sample; R = Rock Core Sample; V = Field Vane Shear
Pen. = Penetration Length; Rec. = Recovery Length; bpf = Blows per Foot; mpf = Minute per Foot
WOR = Weight of Rods; WOH = Weight of Hammer; RQD = Rock Quality Designation; PID = Photoionization Detector
S_v = Field Vane Shear Strength, kips/sq.ft.; q_u = Unconfined Compressive Strength, kips/sq.ft.; N/A = Not Applicable

Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	SAMPLE INFORMATION: Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD	Field / Lab Test Data	Graphic Log	Sample Description & Classification	H_20 Depth	Remarks
65			1D		0.5-2.5	24/14	9-7-5-5			0.5 6" Concrete Medium dense to loose, brown SAND, some gravel, some silt (FILL)		
60	5		2D		5-7	24/24	7-6-6-7					
			3D		7-9	24/8	5-3-2-2					
55	10		4D		9.5-11.5	24/10	1-1-2-3				▼	
										11.0 Very loose, dark gray clayey SAND and silt		
50	15		5D		14.5-16.5	24/14	8-12-25-24			15.0 Medium dense to Dense, dark gray SAND and silt, some gravel, trace clay, occasional cobbles (Glacial Till)		
45	20		6D		19.5-21.5	24/16	8-12-25-24	w =9.1 %				
40	25		7D		24.5-26.5	24/20	12-14-19-19					
35	30		8D		29.5-31.5	24/10	9-12-14-20			30.0		
										Medium dense, gray SAND and silt, some clay, trace gravel, occasional cobbles (Glacial Till)		
30	35		9D		34.5-36.5	24/24	15-12-10-15					

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

(Continued Next Page)

BORING LOG

S.W.COLE ENGINEERING, INC.

CLIENT: Maine Medical Center
PROJECT: Proposed Gilman Street Garage & Congress St. Bldg
LOCATION: Gilman St. and Congress St., Portland, Maine

BORING NO.: B-16-9
SHEET: 2 of 2
PROJECT NO. 16-1136
DATE START: 12/9/2016
DATE FINISH: 12/9/2016

Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	SAMPLE INFORMATION: Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD	Field / Lab Test Data	Graphic Log	Sample Description & Classification	H_20 Depth	Remarks
25			10D		39.5-41.5	24/18	10-14-12-24			Medium dense, gray SAND and silt, some clay, trace gravel, occasional cobbles (Glacial Till)		
	45		11D		44.5-46.5	24/10	12-17-22-26			Dense, more gravel		
20												
	50		12D		49.5-51.3	21/20	10-21-30-50/3"			Very dense, some sand layering		
15												
	55		13D		54.5-55.3	10/8	54-50/4"			Gray silty SAND, some gravel (Glacial Till)		
10												
	60		14D		59.5-60.3	10/6	50-50/4"			60.0 Very dense, gray-brown silty SAND with clayey silt layers		
5												
	65											
0												
	70		15D		69.5-70.3	10/8	60-50/4"			some gravel		
-5												
	75									75.0 Very dense, dark gray SAND and silt, some gravel, trace clay with pieces of weathered rock (Glacial Till)		
-10												
	80		16D		79.5-80.5	12/12	22-54					
-15										81.5 Bottom of Exploration at 81.5 feet		

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

S.W.COLE ENGINEERING, INC.

BORING LOG

BORING NO.: B-1
SHEET: 1 OF 2
PROJECT NO.: 02-0763 S
DATE START: 9/3/2002
DATE FINISH: 9/3/2002
ELEVATION: 68+/-
SWC REP.: KGB

PROJECT / CLIENT: PROPOSED CENTRAL UTILITIES PLANT / MAINE MEDICAL CENTER
LOCATION: GILMAN STREET PORTLAND, MAINE
DRILLING FIRM: GREAT WORKS TEST BORINGS DRILLER: JEFF LEE

	TYPE	SIZE I.D.	HAMMER WT.	HAMMER FALL
CASING:	HSA	2 1/2"		
SAMPLER:	SS	1 3/8"	140 LB	30"
CORE BARREL:				

WATER LEVEL INFORMATION
NO GROUNDWATER OBSERVED

CASING BLOWS PER FOOT	SAMPLE NO.	PEN.	REC.	DEPTH @ BOT	SAMPLER BLOWS PER 6"1 0-6	6-12	12-18	18-24	DEPTH	STRATA & TEST DATA
	S-1	24"	19"	2.0'	3	8	10	11	2.0'+/-	BROWN SILTY SAND, SOME GRAVEL, SOME ORGANICS (FILL) ~ MEDIUM DENSE ~
									6.0'	BROWN SILTY SAND, SOME FINE GRAVEL (FILL) ~ MEDIUM DENSE ~
	S-2	24"	20"	7.0'	7	14	16	18	9.0'	BROWN SILTY SAND, TRACE OF FINE GRAVEL (FILL) ~ MEDIUM DENSE TO DENSE ~
19										
28	S-3	24"	20"	12.0'	8	7	7	10	13.0'	LIGHT BROWN MEDIUM SAND, SOME FINE GRAVEL, TRACE OF SILT (PROBABLE FILL) ~ MEDIUM DENSE ~
48										
45									16.0'	BROWN SILTY SAND, SOME GRAVEL, TRACE OF CLAY ~ MEDIUM DENSE ~
	S-4	24"	24"	17.0'	3	1	1	1		~ MEDIUM ~
	1U	24"	24"	19.0'	HYDRAULIC PUSH					GRAY SILTY CLAY WITH SOME SAND LAYERS qu = 1.24 ksf W = 40.4% qp = 0.5 ksf WI = 38 Wp = 18
	S-5	24"	24"	22.0'	WOH/24"					
	3.5" X 6" VANE			25.8'						Sv = 1.3/0.21 ksf
	3.5" X 6" VANE			26.5'						Sv = NO ROTATION
	2U	12"	10"	31.0'	HYDRAULIC PUSH					W = 31.0% WI = 28 qu = 2.9 ksf Wp = 17
	S-6	24"	17"	33.0'	12	8	7	18	31.0'	LIGHT BROWN FINE SAND WITH FREQUENT IRON STAINING, TRACE OF SILT AND SEAMS OF SILTY SAND, TRACE OF CLAY ~ MEDIUM DENSE ~
	S-7	24"	24"	37.0'	1	3	4	7	33.0'	GRAY SILT AND SAND, SOME GRAVEL AND TRACE OF CLAY (TILL) ~ MEDIUM DENSE ~

SAMPLES:
D = SPLIT SPOON
C = 3" SHELBY TUBE
U = 3.5" SHELBY TUBE

SOIL CLASSIFIED BY:
[X] DRILLER - VISUALLY
[X] SOIL TECH. - VISUALLY
[X] LABORATORY TEST

REMARKS:
STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL.

BORING NO.: B-1

S.W.COLE ENGINEERING, INC.

BORING LOG

BORING NO.: B-1
SHEET: 2 OF 2
PROJECT NO.: 02-0763 S
DATE START: 9/3/2002
DATE FINISH: 9/3/2002
ELEVATION: 68+/-
SWC REP.: KGB

PROJECT / CLIENT: PROPOSED CENTRAL UTILITIES PLANT / MAINE MEDICAL CENTER
LOCATION: GILMAN STREET PORTLAND, MAINE
DRILLING FIRM: GREAT WORKS TEST BORINGS DRILLER: JEFF LEE

	TYPE	SIZE I.D.	HAMMER WT.	HAMMER FALL
CASING:	HSA	2 1/2"		
SAMPLER:	SS	1 3/8"	140 LB	30"
CORE BARREL:				

WATER LEVEL INFORMATION
NO GROUNDWATER OBSERVED

	NO.	PEN.	REC.	DEPTH @ BOT	0-6	6-12	12-18	18-24	DEPTH	STRATA & TEST DATA
	S-8	24"	14"	42.0'	5	4	8	11		~ MEDIUM DENSE BECOMING . . . .
	S-9	24"	14"	47.0'	5	7	8	10		GRAY SILT AND SAND, SOME GRAVEL AND TRACE OF CLAY (TILL)
	S-10	24"	21"	52.0'	7	13	15	23	52.0'	. . . DENSE ~
										BOTTOM OF EXPLORATION AT 52.0' NOT REFUSAL
										NOTE : BORING MADE APROXIMATELY 15' SOUTH OF EXISTING STORM DRAI

SAMPLES:
D = SPLIT SPOON
C = 3" SHELBY TUBE
U = 3.5" SHELBY TUBE

SOIL CLASSIFIED BY:
[X] DRILLER - VISUALLY
[X] SOIL TECH. - VISUALLY
[X] LABORATORY TEST

REMARKS:
STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL.

BORING NO.: B-1

APPENDIX D

Laboratory Test Results

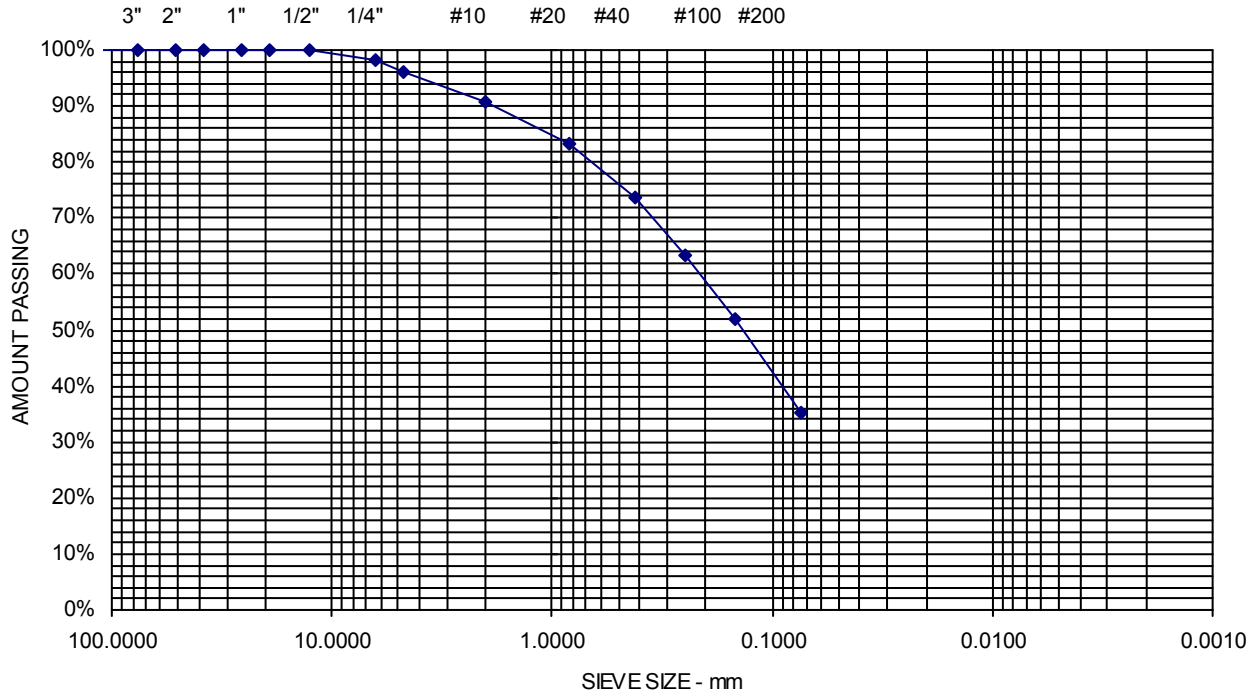
S.W.COLE ENGINEERING, INC.

Report of Gradation

ASTM C-117 & C-136

Project Name	PORTLAND ME - PROPOSED GILMAN STREET GARAGE AND CONGRESS STREET BUILDING - GEOTECHNICAL ENGINEERING	Project Number	16-1136
Client	MAINE MEDICAL CENTER	Lab ID	23090G
		Date Received	11/14/2017
		Date Completed	11/16/2017
Material Source	**B-17-1 10D 30-32**	Tested By	TIMOTHY STOREY

STANDARD DESIGNATION (mm/µm)	SIEVE SIZE	AMOUNT PASSING (%)	
150 mm	**6"**	**100**	
125 mm	**5"**	**100**	
100 mm	**4"**	**100**	
75 mm	**3"**	**100**	
50 mm	**2"**	**100**	
38.1 mm	**1-1/2"**	**100**	
25.0 mm	**1"**	**100**	
19.0 mm	**3/4"**	**100**	
12.5 mm	**1/2"**	**100**	
6.3 mm	**1/4"**	**98**	
4.75 mm	**No. 4**	**96**	4.1% Gravel
2.00 mm	**No. 10**	**91**	
850 um	**No. 20**	**83**	
425 um	**No. 40**	**73**	60.8% Sand
250 um	**No. 60**	**63**	
150 um	**No. 100**	**52**	
75 um	**No. 200**	**35.1**	35.1% Fines



Comments: w = 12.5%

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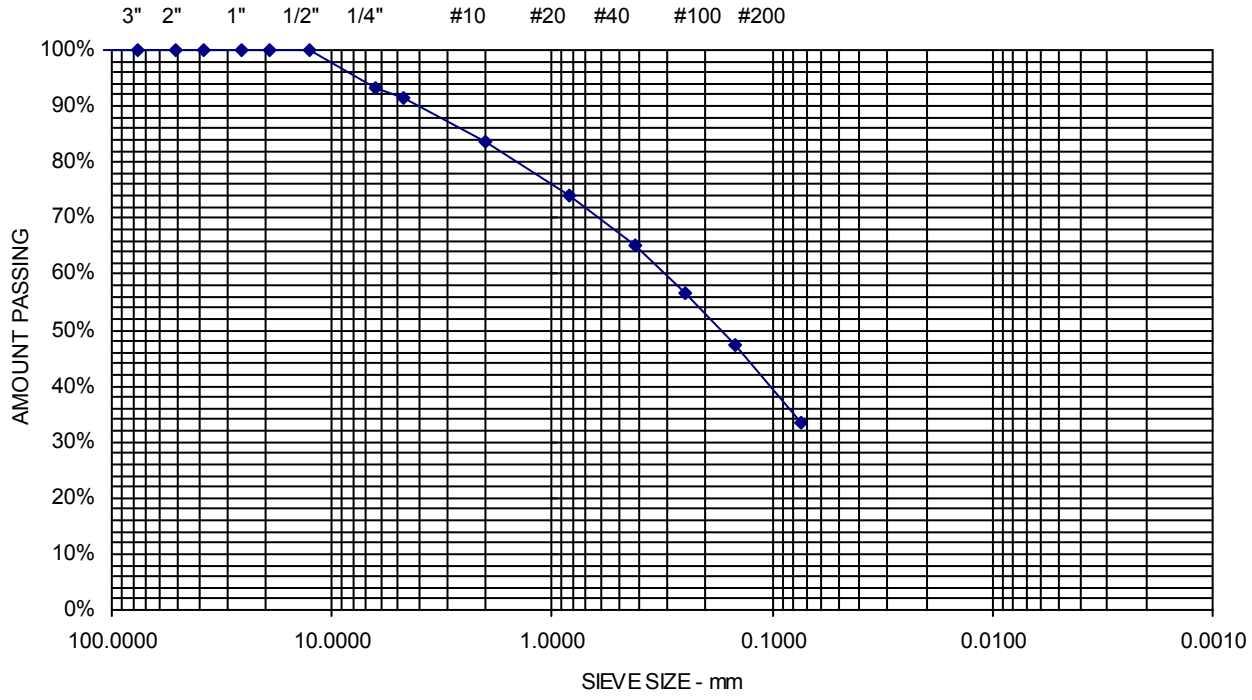
S.W.COLE ENGINEERING, INC.

Report of Gradation

ASTM C-117 & C-136

Project Name	PORTLAND ME - PROPOSED GILMAN STREET GARAGE AND CONGRESS STREET BUILDING - GEOTECHNICAL ENGINEERING	Project Number	16-1136
Client	MAINE MEDICAL CENTER	Lab ID	23091G
		Date Received	11/14/2017
		Date Completed	11/16/2017
Material Source	**B-17-1 12D 40-42**	Tested By	TIMOTHY STOREY

STANDARD DESIGNATION (mm/µm)	SIEVE SIZE	AMOUNT PASSING (%)	
150 mm	**6"**	**100**	
125 mm	**5"**	**100**	
100 mm	**4"**	**100**	
75 mm	**3"**	**100**	
50 mm	**2"**	**100**	
38.1 mm	**1-1/2"**	**100**	
25.0 mm	**1"**	**100**	
19.0 mm	**3/4"**	**100**	
12.5 mm	**1/2"**	**100**	
6.3 mm	**1/4"**	**93**	
4.75 mm	**No. 4**	**91**	8.5% Gravel
2.00 mm	**No. 10**	**84**	
850 um	**No. 20**	**74**	
425 um	**No. 40**	**65**	58% Sand
250 um	**No. 60**	**57**	
150 um	**No. 100**	**47**	
75 um	**No. 200**	**33.5**	33.5% Fines



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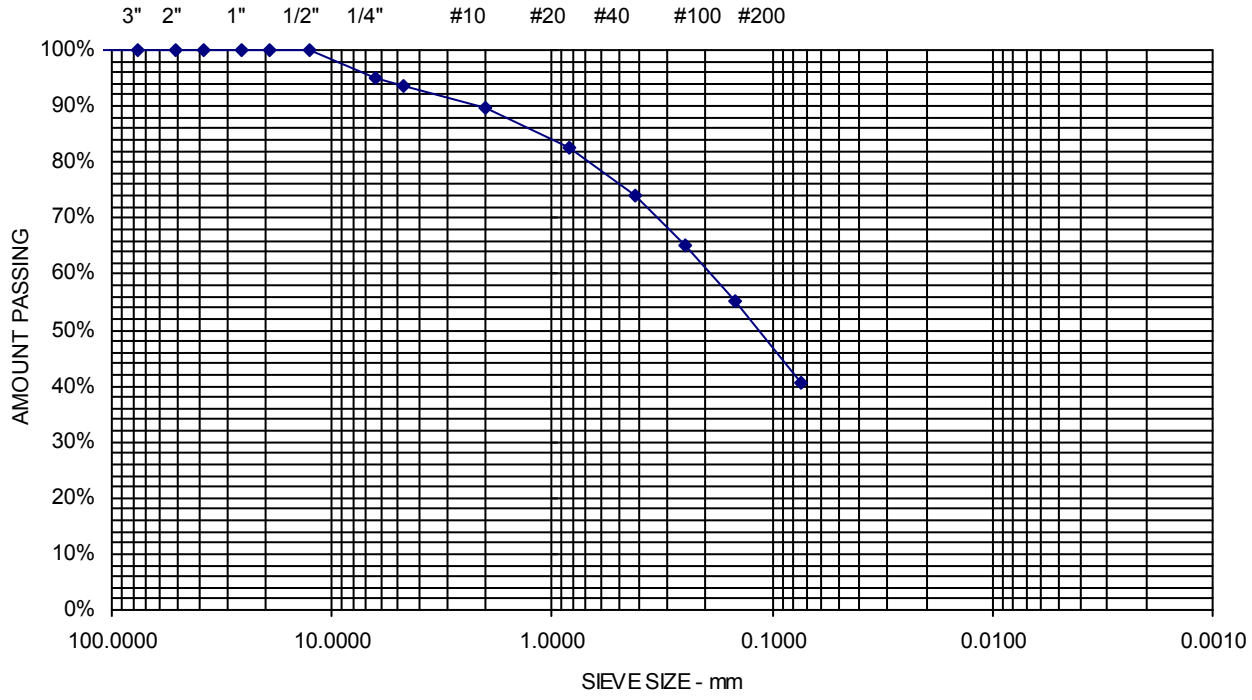
S.W.COLE ENGINEERING, INC.

Report of Gradation

ASTM C-117 & C-136

Project Name	PORTLAND ME - PROPOSED GILMAN STREET GARAGE AND CONGRESS STREET BUILDING - GEOTECHNICAL ENGINEERING	Project Number	16-1136
Client	MAINE MEDICAL CENTER	Lab ID	23092G
		Date Received	11/14/2017
		Date Completed	11/16/2017
Material Source	**B-17-1 13D 42-44**	Tested By	TIMOTHY STOREY

STANDARD DESIGNATION (mm/µm)	SIEVE SIZE	AMOUNT PASSING (%)	
150 mm	**6"**	**100**	
125 mm	**5"**	**100**	
100 mm	**4"**	**100**	
75 mm	**3"**	**100**	
50 mm	**2"**	**100**	
38.1 mm	**1-1/2"**	**100**	
25.0 mm	**1"**	**100**	
19.0 mm	**3/4"**	**100**	
12.5 mm	**1/2"**	**100**	
6.3 mm	**1/4"**	**95**	
4.75 mm	**No. 4**	**93**	6.6% Gravel
2.00 mm	**No. 10**	**90**	
850 um	**No. 20**	**83**	
425 um	**No. 40**	**74**	53% Sand
250 um	**No. 60**	**65**	
150 um	**No. 100**	**55**	
75 um	**No. 200**	**40.4**	40.4% Fines



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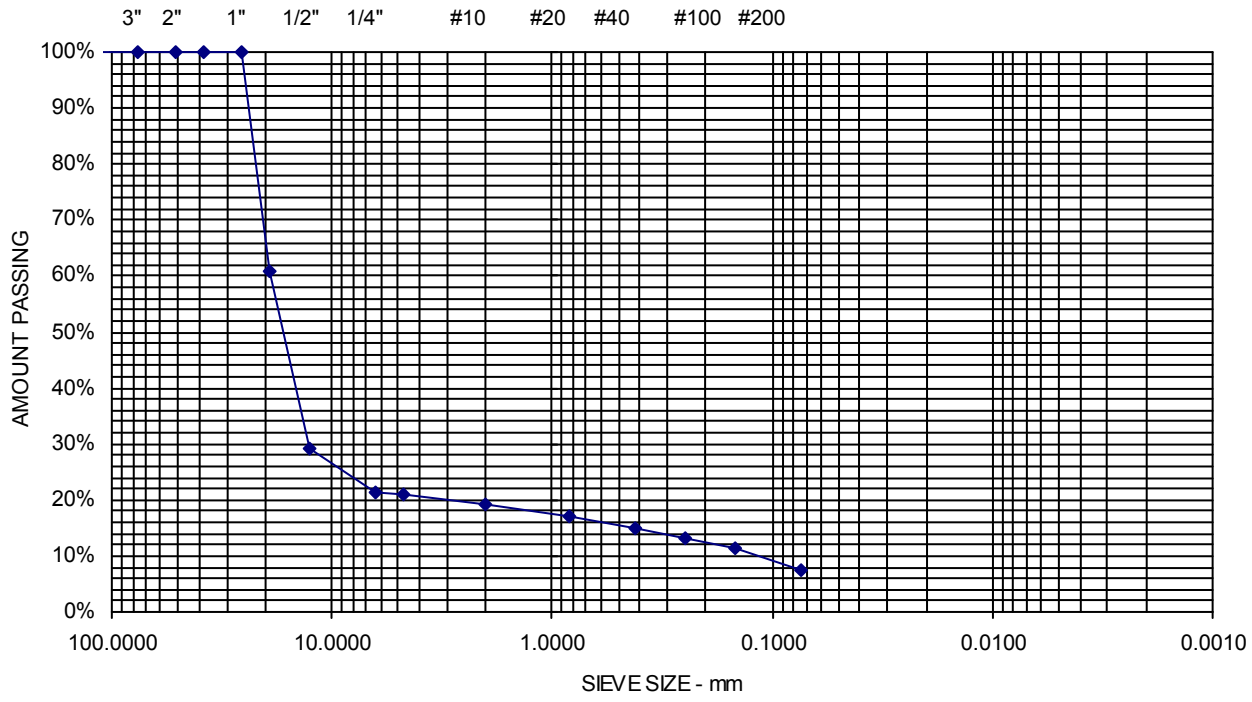
S.W.COLE ENGINEERING, INC.

Report of Gradation

ASTM C-117 & C-136

Project Name	PORTLAND ME - PROPOSED GILMAN STREET GARAGE AND CONGRESS STREET BUILDING - GEOTECHNICAL ENGINEERING	Project Number	16-1136
Client	MAINE MEDICAL CENTER	Lab ID	23097G
		Date Received	11/14/2017
		Date Completed	11/17/2017
Material Source	**B-17-5 13D 45-47**	Tested By	TIMOTHY STOREY

STANDARD DESIGNATION (mm/µm)	SIEVE SIZE	AMOUNT PASSING (%)	
150 mm	**6"**	**100**	
125 mm	**5"**	**100**	
100 mm	**4"**	**100**	
75 mm	**3"**	**100**	
50 mm	**2"**	**100**	
38.1 mm	**1-1/2"**	**100**	
25.0 mm	**1"**	**100**	
19.0 mm	**3/4"**	**61**	
12.5 mm	**1/2"**	**29**	
6.3 mm	**1/4"**	**21**	
4.75 mm	**No. 4**	**21**	79.2% Gravel
2.00 mm	**No. 10**	**19**	
850 um	**No. 20**	**17**	
425 um	**No. 40**	**15**	13.4% Sand
250 um	**No. 60**	**13**	
150 um	**No. 100**	**11**	
75 um	**No. 200**	**7.4**	7.4% Fines



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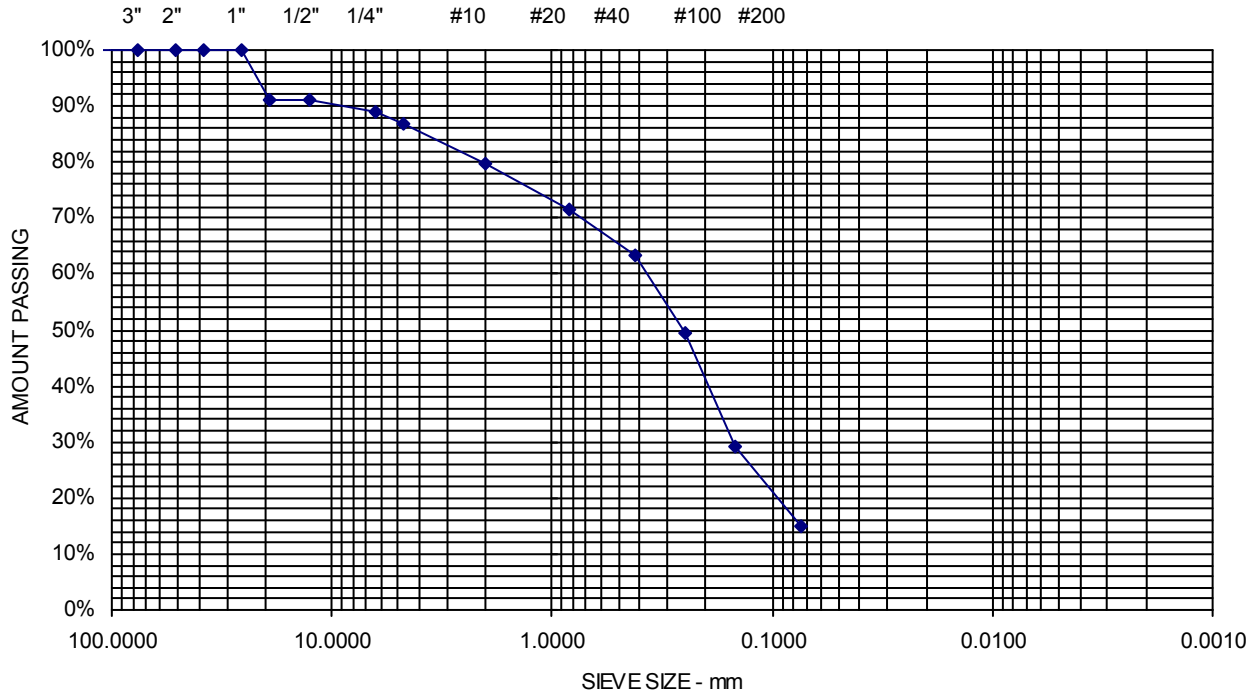
S.W.COLE ENGINEERING, INC.

Report of Gradation

ASTM C-117 & C-136

Project Name	PORTLAND ME - PROPOSED GILMAN STREET GARAGE AND CONGRESS STREET BUILDING - GEOTECHNICAL ENGINEERING	Project Number	16-1136
Client	MAINE MEDICAL CENTER	Lab ID	23100G
		Date Received	11/14/2017
		Date Completed	11/17/2017
Material Source	**B-17-10 6D 25-27**	Tested By	TIMOTHY STOREY

STANDARD DESIGNATION (mm/µm)	SIEVE SIZE	AMOUNT PASSING (%)	
150 mm	**6"**	**100**	
125 mm	**5"**	**100**	
100 mm	**4"**	**100**	
75 mm	**3"**	**100**	
50 mm	**2"**	**100**	
38.1 mm	**1-1/2"**	**100**	
25.0 mm	**1"**	**100**	
19.0 mm	**3/4"**	**91**	
12.5 mm	**1/2"**	**91**	
6.3 mm	**1/4"**	**89**	
4.75 mm	**No. 4**	**87**	13.2% Gravel
2.00 mm	**No. 10**	**80**	
850 um	**No. 20**	**71**	
425 um	**No. 40**	**63**	71.8% Sand
250 um	**No. 60**	**49**	
150 um	**No. 100**	**29**	
75 um	**No. 200**	**15.0**	15% Fines



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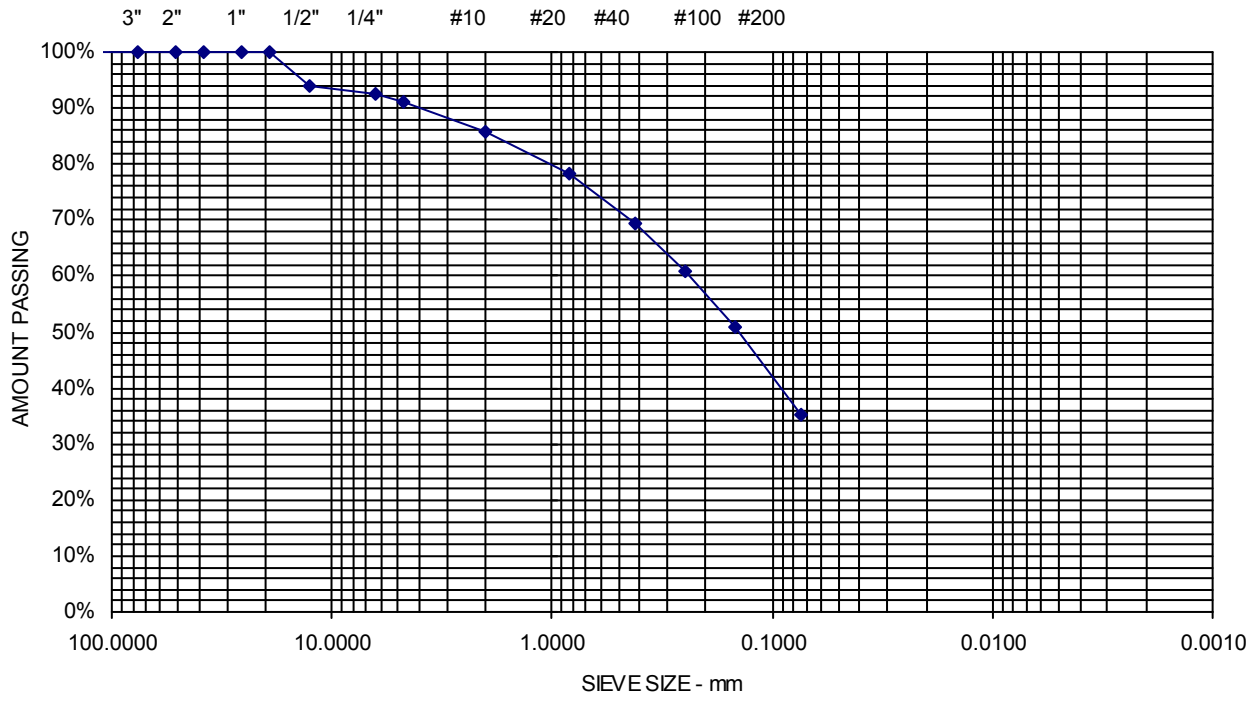
S.W.COLE ENGINEERING, INC.

Report of Gradation

ASTM C-117 & C-136

Project Name	PORTLAND ME - PROPOSED GILMAN STREET GARAGE AND CONGRESS STREET BUILDING - GEOTECHNICAL ENGINEERING	Project Number	16-1136
Client	MAINE MEDICAL CENTER	Lab ID	23101G
		Date Received	11/14/2017
		Date Completed	11/17/2017
Material Source	**B-17-10 8D 35-37**	Tested By	TIMOTHY STOREY

STANDARD DESIGNATION (mm/µm)	SIEVE SIZE	AMOUNT PASSING (%)	
150 mm	**6"**	**100**	
125 mm	**5"**	**100**	
100 mm	**4"**	**100**	
75 mm	**3"**	**100**	
50 mm	**2"**	**100**	
38.1 mm	**1-1/2"**	**100**	
25.0 mm	**1"**	**100**	
19.0 mm	**3/4"**	**100**	
12.5 mm	**1/2"**	**94**	
6.3 mm	**1/4"**	**93**	
4.75 mm	**No. 4**	**91**	9% Gravel
2.00 mm	**No. 10**	**86**	
850 um	**No. 20**	**78**	
425 um	**No. 40**	**69**	55.7% Sand
250 um	**No. 60**	**61**	
150 um	**No. 100**	**51**	
75 um	**No. 200**	**35.3**	35.3% Fines



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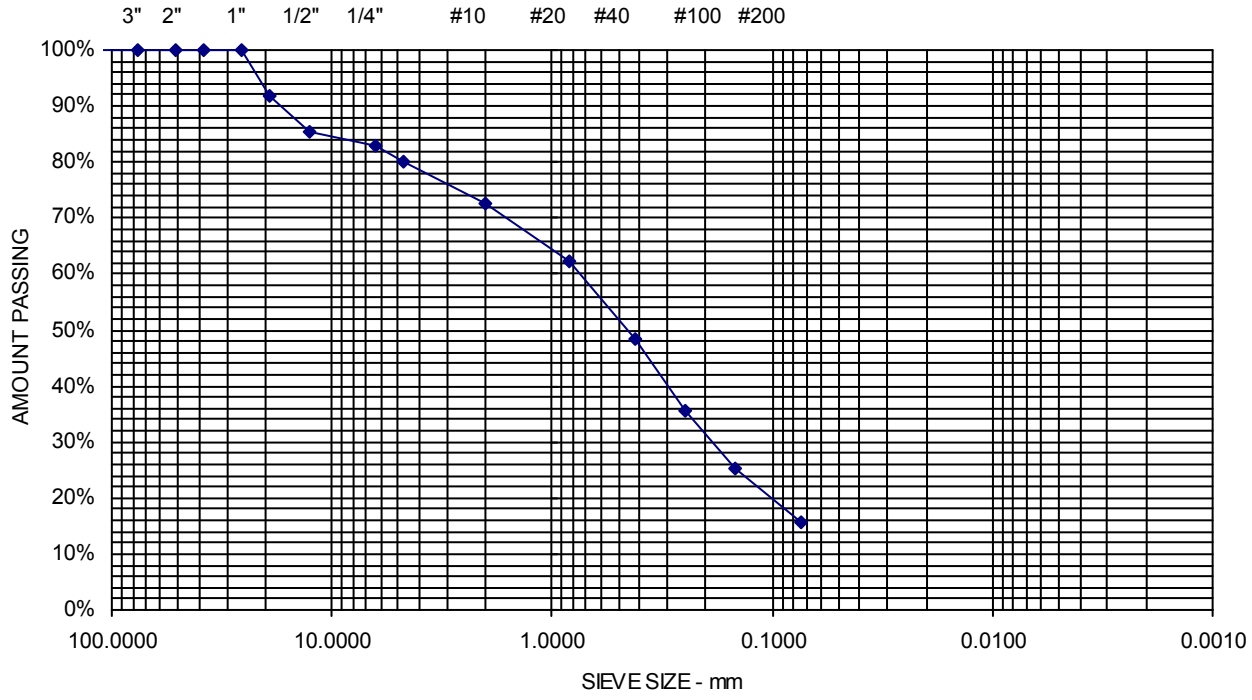
S.W.COLE ENGINEERING, INC.

Report of Gradation

ASTM C-117 & C-136

Project Name	PORTLAND ME - PROPOSED GILMAN STREET GARAGE AND CONGRESS STREET BUILDING - GEOTECHNICAL ENGINEERING	Project Number	16-1136
Client	MAINE MEDICAL CENTER	Lab ID	23118G
		Date Received	11/14/2017
		Date Completed	11/17/2017
Material Source	**B-17-13 3D 10-12**	Tested By	TIMOTHY STOREY

STANDARD DESIGNATION (mm/µm)	SIEVE SIZE	AMOUNT PASSING (%)	
150 mm	**6"**	**100**	
125 mm	**5"**	**100**	
100 mm	**4"**	**100**	
75 mm	**3"**	**100**	
50 mm	**2"**	**100**	
38.1 mm	**1-1/2"**	**100**	
25.0 mm	**1"**	**100**	
19.0 mm	**3/4"**	**92**	
12.5 mm	**1/2"**	**85**	
6.3 mm	**1/4"**	**83**	
4.75 mm	**No. 4**	**80**	19.8% Gravel
2.00 mm	**No. 10**	**72**	
850 um	**No. 20**	**62**	
425 um	**No. 40**	**48**	64.4% Sand
250 um	**No. 60**	**36**	
150 um	**No. 100**	**25**	
75 um	**No. 200**	**15.8**	15.8% Fines



Comments: w = 11.0%

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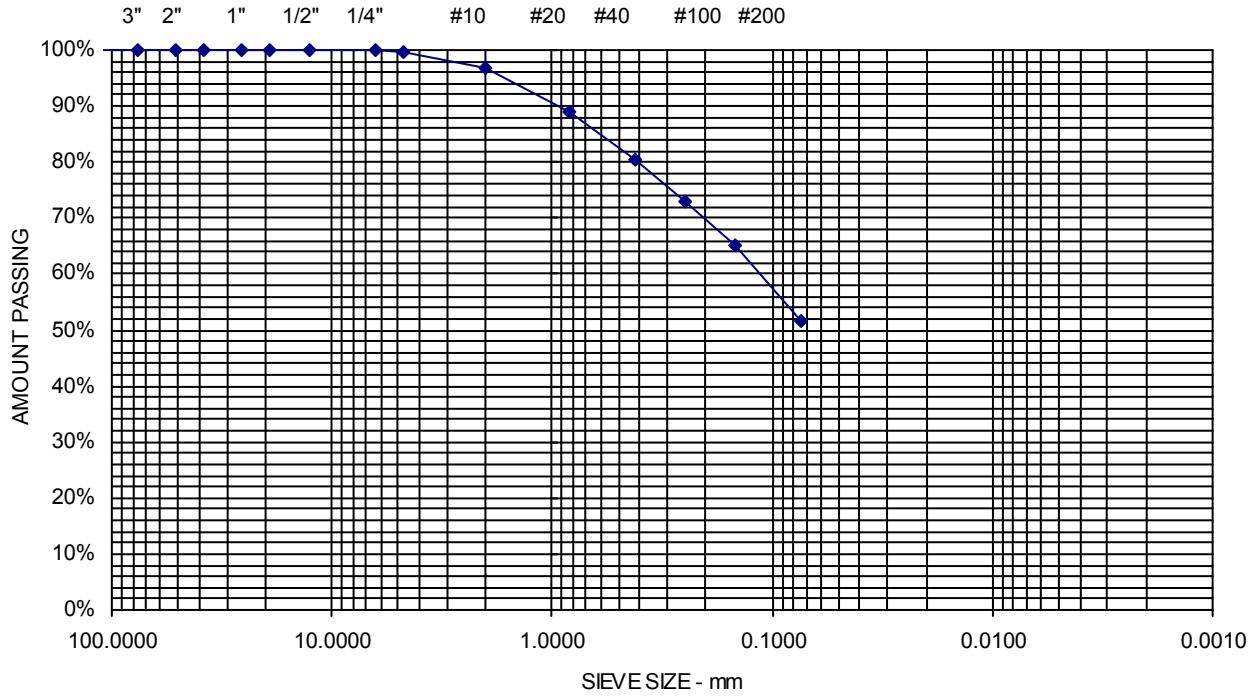
S.W.COLE ENGINEERING, INC.

Report of Gradation

ASTM C-117 & C-136

Project Name	PORTLAND ME - PROPOSED GILMAN STREET GARAGE AND CONGRESS STREET BUILDING - GEOTECHNICAL ENGINEERING	Project Number	16-1136
Client	MAINE MEDICAL CENTER	Lab ID	23122G
		Date Received	11/14/2017
		Date Completed	11/17/2017
Material Source	**B-17-13 9D 40-42**	Tested By	TIMOTHY STOREY

STANDARD DESIGNATION (mm/µm)	SIEVE SIZE	AMOUNT PASSING (%)	
150 mm	**6"**	**100**	
125 mm	**5"**	**100**	
100 mm	**4"**	**100**	
75 mm	**3"**	**100**	
50 mm	**2"**	**100**	
38.1 mm	**1-1/2"**	**100**	
25.0 mm	**1"**	**100**	
19.0 mm	**3/4"**	**100**	
12.5 mm	**1/2"**	**100**	
6.3 mm	**1/4"**	**100**	
4.75 mm	**No. 4**	**99**	0.5% Gravel
2.00 mm	**No. 10**	**97**	
850 um	**No. 20**	**89**	
425 um	**No. 40**	**80**	48% Sand
250 um	**No. 60**	**73**	
150 um	**No. 100**	**65**	
75 um	**No. 200**	**51.5**	51.5% Fines



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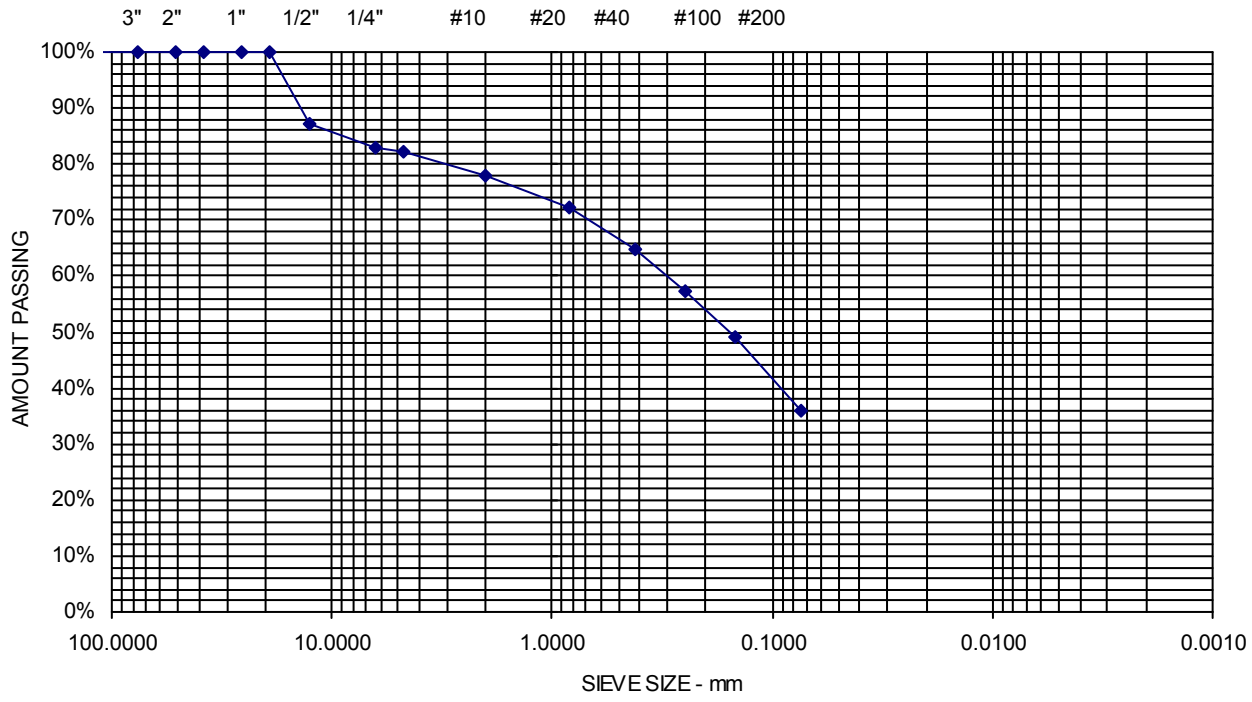
S.W.COLE ENGINEERING, INC.

Report of Gradation

ASTM C-117 & C-136

Project Name	PORTLAND ME - PROPOSED GILMAN STREET GARAGE AND CONGRESS STREET BUILDING - GEOTECHNICAL ENGINEERING	Project Number	16-1136
Client	MAINE MEDICAL CENTER	Lab ID	23123G
		Date Received	11/14/2017
		Date Completed	11/17/2017
Material Source	**B-17-13 11D 50-52**	Tested By	TIMOTHY STOREY

STANDARD DESIGNATION (mm/µm)	SIEVE SIZE	AMOUNT PASSING (%)	
150 mm	**6"**	**100**	
125 mm	**5"**	**100**	
100 mm	**4"**	**100**	
75 mm	**3"**	**100**	
50 mm	**2"**	**100**	
38.1 mm	**1-1/2"**	**100**	
25.0 mm	**1"**	**100**	
19.0 mm	**3/4"**	**100**	
12.5 mm	**1/2"**	**87**	
6.3 mm	**1/4"**	**83**	
4.75 mm	**No. 4**	**82**	18% Gravel
2.00 mm	**No. 10**	**78**	
850 um	**No. 20**	**72**	
425 um	**No. 40**	**65**	45.9% Sand
250 um	**No. 60**	**57**	
150 um	**No. 100**	**49**	
75 um	**No. 200**	**36.1**	36.1% Fines



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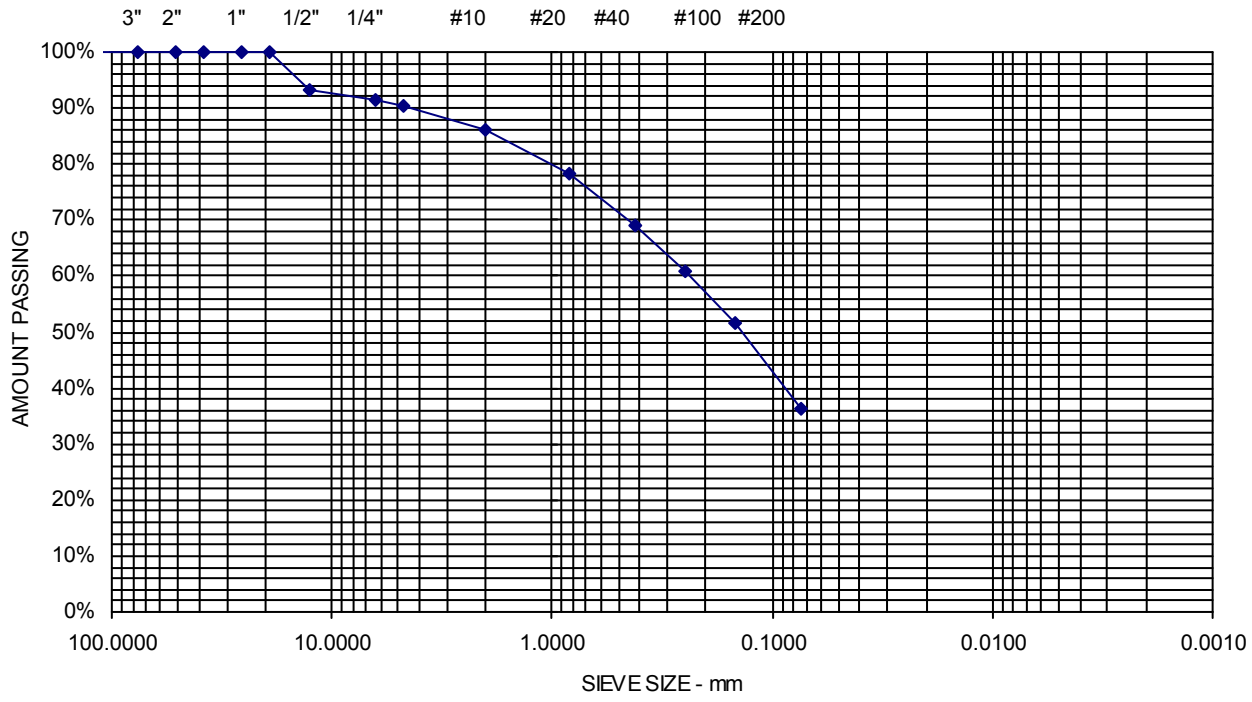
S.W.COLE ENGINEERING, INC.

Report of Gradation

ASTM C-117 & C-136

Project Name	PORTLAND ME - PROPOSED GILMAN STREET GARAGE AND CONGRESS STREET BUILDING - GEOTECHNICAL ENGINEERING	Project Number	16-1136
Client	MAINE MEDICAL CENTER	Lab ID	23127G
		Date Received	11/14/2017
		Date Completed	11/17/2017
Material Source	**B-17-14 7D 30-32**	Tested By	TIMOTHY STOREY

STANDARD DESIGNATION (mm/µm)	SIEVE SIZE	AMOUNT PASSING (%)	
150 mm	**6"**	**100**	
125 mm	**5"**	**100**	
100 mm	**4"**	**100**	
75 mm	**3"**	**100**	
50 mm	**2"**	**100**	
38.1 mm	**1-1/2"**	**100**	
25.0 mm	**1"**	**100**	
19.0 mm	**3/4"**	**100**	
12.5 mm	**1/2"**	**93**	
6.3 mm	**1/4"**	**92**	
4.75 mm	**No. 4**	**90**	9.7% Gravel
2.00 mm	**No. 10**	**86**	
850 um	**No. 20**	**78**	
425 um	**No. 40**	**69**	54.1% Sand
250 um	**No. 60**	**61**	
150 um	**No. 100**	**52**	
75 um	**No. 200**	**36.2**	36.2% Fines



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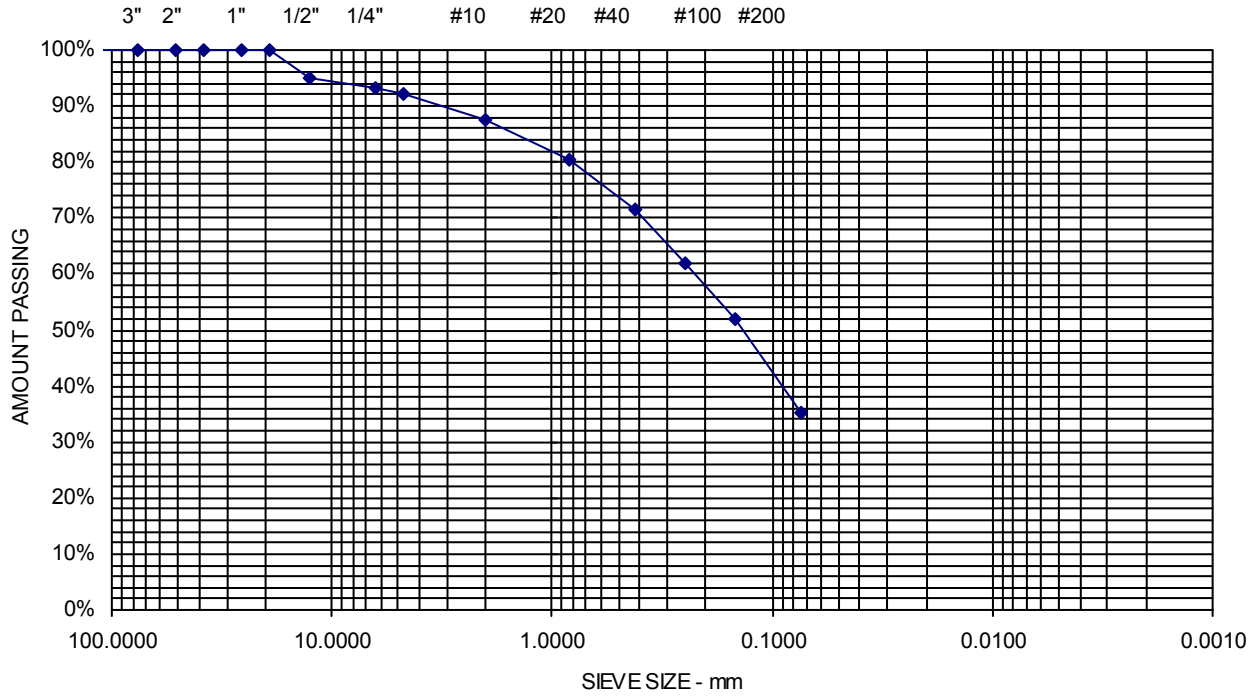
S.W.COLE ENGINEERING, INC.

Report of Gradation

ASTM C-117 & C-136

Project Name	PORTLAND ME - PROPOSED GILMAN STREET GARAGE AND CONGRESS STREET BUILDING - GEOTECHNICAL ENGINEERING	Project Number	16-1136
Client	MAINE MEDICAL CENTER	Lab ID	23128G
		Date Received	11/14/2017
		Date Completed	11/17/2017
Material Source	**B-17-14 8D 35-37**	Tested By	TIMOTHY STOREY

STANDARD DESIGNATION (mm/µm)	SIEVE SIZE	AMOUNT PASSING (%)	
150 mm	**6"**	**100**	
125 mm	**5"**	**100**	
100 mm	**4"**	**100**	
75 mm	**3"**	**100**	
50 mm	**2"**	**100**	
38.1 mm	**1-1/2"**	**100**	
25.0 mm	**1"**	**100**	
19.0 mm	**3/4"**	**100**	
12.5 mm	**1/2"**	**95**	
6.3 mm	**1/4"**	**93**	
4.75 mm	**No. 4**	**92**	8% Gravel
2.00 mm	**No. 10**	**88**	
850 um	**No. 20**	**81**	
425 um	**No. 40**	**71**	56.6% Sand
250 um	**No. 60**	**62**	
150 um	**No. 100**	**52**	
75 um	**No. 200**	**35.4**	35.4% Fines



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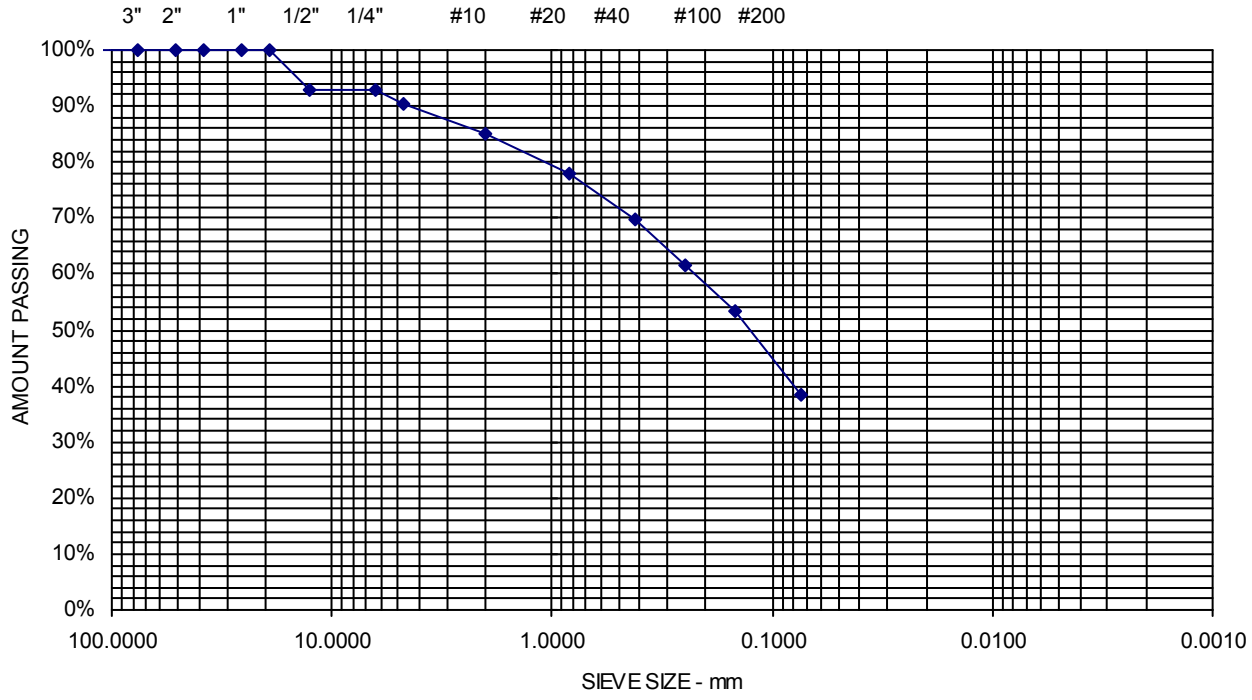
Report of Gradation

ASTM C-117 & C-136

Project Name	PORTLAND ME - PROPOSED GILMAN STREET GARAGE AND CONGRESS STREET BUILDING - GEOTECHNICAL ENGINEERING	Project Number	16-1136
Client	MAINE MEDICAL CENTER	Lab ID	23131G
		Date Received	11/14/2017
		Date Completed	11/17/2017
Material Source	**B-17-15 5D 20-22**	Tested By	TIMOTHY STOREY

STANDARD DESIGNATION (mm/µm)	SIEVE SIZE	AMOUNT PASSING (%)	
150 mm	**6"**	**100**	
125 mm	**5"**	**100**	
100 mm	**4"**	**100**	
75 mm	**3"**	**100**	
50 mm	**2"**	**100**	
38.1 mm	**1-1/2"**	**100**	
25.0 mm	**1"**	**100**	
19.0 mm	**3/4"**	**100**	
12.5 mm	**1/2"**	**93**	
6.3 mm	**1/4"**	**93**	
4.75 mm	**No. 4**	**91**	9.5% Gravel
2.00 mm	**No. 10**	**85**	
850 um	**No. 20**	**78**	
425 um	**No. 40**	**70**	52.1% Sand
250 um	**No. 60**	**62**	
150 um	**No. 100**	**53**	
75 um	**No. 200**	**38.4**	38.4% Fines



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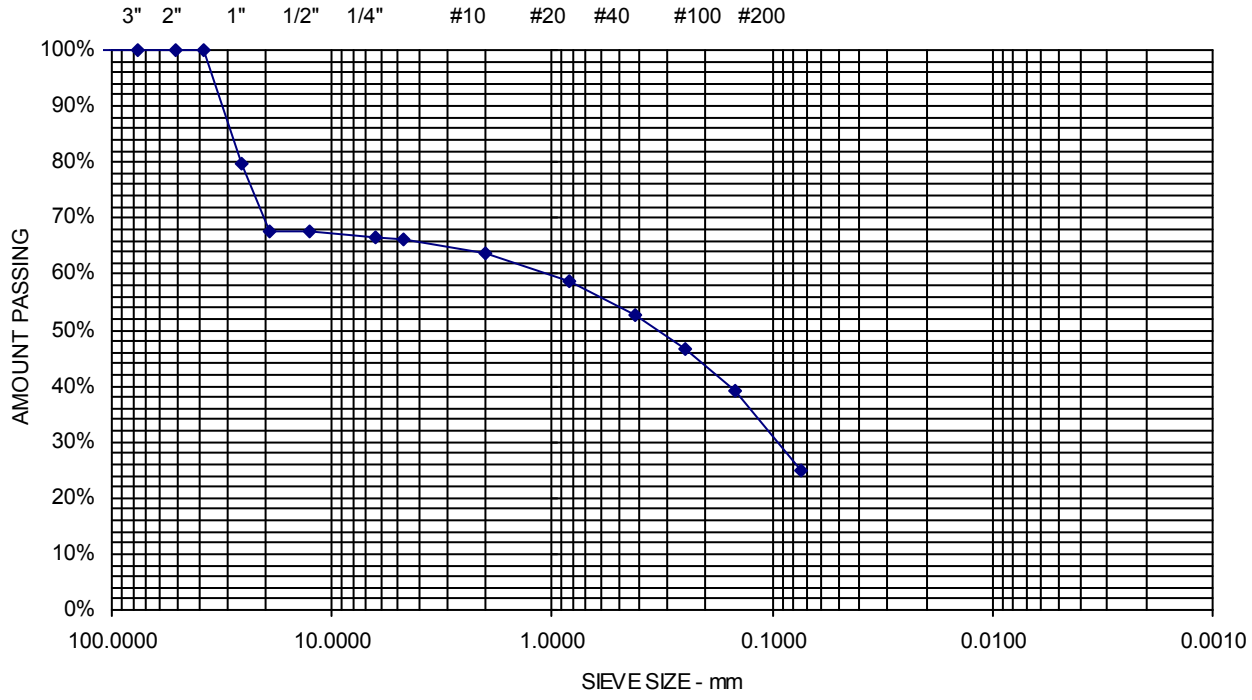
Report of Gradation

ASTM C-117 & C-136

Project Name	PORTLAND ME - PROPOSED GILMAN STREET GARAGE AND CONGRESS STREET BUILDING - GEOTECHNICAL ENGINEERING	Project Number	16-1136
Client	MAINE MEDICAL CENTER	Lab ID	23132G
		Date Received	11/14/2017
		Date Completed	11/17/2017
Material Source	**B-17-15 7D 30-32**	Tested By	TIMOTHY STOREY

STANDARD DESIGNATION (mm/µm)	SIEVE SIZE	AMOUNT PASSING (%)	
150 mm	**6"**	**100**	
125 mm	**5"**	**100**	
100 mm	**4"**	**100**	
75 mm	**3"**	**100**	
50 mm	**2"**	**100**	
38.1 mm	**1-1/2"**	**100**	
25.0 mm	**1"**	**80**	
19.0 mm	**3/4"**	**68**	
12.5 mm	**1/2"**	**68**	
6.3 mm	**1/4"**	**67**	
4.75 mm	**No. 4**	**66**	33.8% Gravel
2.00 mm	**No. 10**	**64**	
850 um	**No. 20**	**59**	
425 um	**No. 40**	**53**	41.2% Sand
250 um	**No. 60**	**46**	
150 um	**No. 100**	**39**	
75 um	**No. 200**	**25.0**	25% Fines



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