REPORT OF SUBSURFACE EXPLORATION
AND
GEOTECHNICAL ENGINEERING SERVICES

P984 Regimental Headquarters & P985 Bachelor Enlisted Quarters
Naval Weapons Station, Yorktown, Virginia

G E T Project No: WM13-174G R-1
February 5, 2014

Prepared for:

The Walsh Group
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APPENDICES

I BORING LOCATION PLAN

II SUMMARY OF SOIL CLASSIFICATION

III BORING LOGS

IV GENERALIZED SOIL PROFILE

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APPENDIX I

BORING LOCATION PLAN

= GET Boring Locations

= GER Boring Locations

P-14 P-15 BMP-2 P-17 CBR-2 P-21 CBR-1 P-13 BMP-1 CBR-3 P-18 P-16 P-19 P-20

B-1 B-9 B-2 SCPTu-2 B-8 BMP-3 GW-1 BMP-4 P-10 B-3 B-7 SCPTu-1 P-9 B-6 BMP-5 P-8 CBR-4 B-4 CBR-5 P-7

FUTURE FAST BUILDING

FUTURE

PARKING LOT COUNT	
P-985 BACHELOR ENLISTED QUARTERS	
REMOTE PARKING:	
POV PARKING SPACES	149
HANDICAPPED PARKING	6
P-985 TOTAL	155
P-984 HEADQUARTERS	
REMOTE PARKING:	
POV PARKING SPACES	108
HANDICAPPED PARKING	5
WEST OF BUILDING:	
POV PARKING SPACES	34
HANDICAPPED PARKING	1
EAST OF BUILDING:	
POV PARKING SPACES	57
HANDICAPPED PARKING	3
P-984 TOTAL	198
PROJECT TOTAL	353

SUMMARY TABLE OF QUANTITIES OF TREES ON THE PLANS	
* TOTAL LANDSCAPE AREA (SQUARE FEET)	376,794 SQUARE FEET
**NO. OF TREES REQUIRED (N TOTAL LANDSCAPE AREA)	377 TREES
P-984 REGIMENTAL HEADQUARTERS NO. OF TREES PROVIDED	191 TREES
P-985 BACHELOR ENLISTED QUARTERS NO. OF TREES PROVIDED	186 TREES
**NO. OF TREES PROVIDED (N TOTAL LANDSCAPE AREA)	377 TREES
***NO. OF TREES REQUIRED N PARKING AREA	26 TREES
***NO. OF TREES PROVIDED IN PARKING AREA	26 TREES
TOTAL % OF LANDSCAPE AREA IN PARKING AREA	0

* G205005 1.4.1 Plant Quantities: Provide trees at the rate of one (1) tree per 1,000 square feet (92.9square meters) of Landscape Area. Landscape area is defined as all permeable areas within the project boundaries not covered by buildings, roads, parking lots, sidewalks, and other non permeable areas.

**G2050 LANDSCAPING E . The proposed mix of trees for the site shall be approximately 60% shade trees, 20% flowering trees and 20% evergreen trees. See Part 4 for tree quantities for total landscape area.

***G2050 LANDSCAPING d: For all parking lots provide one shade tree for every 10 parking spaces and in each end island. A min mum of 10% of the parking lot shall be landscaped. Trees in the parking lot are in addition to those required in Part 4.

ABBREVIATIONS

ADA	AMERICANS WITH DISABILITIES ACT
BEQ	BACHELOR ENLISTED QUARTERS
BMP	BEST MANAGEMENT PRACTICE
EOP	EDGE OF PAVEMENT
HDPE	HIGH DENSITY POLYETHYLENE
HQ	HEADQUARTERS
LOC	LIMITS OF CONSTRUCTION
POV	PRIVATELY OWNED VEHICLE
PVC	POLYVINYLCHLORIDE
R	RISERS
RCP	ROUND CONCRETE PIPE
SF	SQUARE FEET
W/	WITH

LEGEND

- STORM PIPE
- UNDERDRAIN STORM PIPE
- LIMITS OF CONSTRUCTION
- ATFP STANDOFF
- OVERHEAD ELECTRIC LINE
- GRASS PAVERS
- MILL & OVERLAY 1½"
- CONCRETE PAVEMENT
- SOD
- BRICK PAVERS
- UNDERGROUND SWM BMP
- PARKING NUMBER COUNT
- TRAFFIC ARROW
- 30' HIGH POLE MOUNTED LED CUTOFF LIGHT
- ACCENTUATED LIGHTING
- 3" CALIPER SHADE TREE
- 4" CALIPER SHADE TREE AT ENTRY PLAZA
- 2" CALIPER FLOWERING TREE
- 3" CALIPER EVERGREEN TREE

NOTES

1. PROVIDE 2" DIRECT BURY CONDUIT SYSTEM WITH HANDHOLES EVERY 75' FOR SITE LIGHTING.
2. LED BOLLARDS WILL BE PROVIDED DURING FINAL DESIGN IN ACCORDANCE WITH UFC 3-530-01, DESIGN: INTERIOR, EXTERIOR LIGHTING AND CONTROLS.

GRAPHIC SCALE
100 0 100 200
1"=100'

KEYNOTES

	STORM
D1	BMP 1 SIZE: 39' X 59' PIPE: 6 ROWS OF 48" HDPE WRAPPED WITH 6" STONE TOTAL 48" HDPE LENGTH: 417' TWO HEADERS ONE STORMCEPTOR
D2	BMP 2 SIZE: 18.5' X 46' PIPE: 4 ROWS OF 36" HDPE WRAPPED WITH 6" STONE TOTAL 36" HDPE LENGTH: 185' TWO HEADERS
D3	BMP 3 SIZE: 65' X 65.5' PIPE: 7 ROWS OF 60" HDPE WRAPPED WITH 6" STONE TOTAL 60" HDPE LENGTH: 655' TWO HEADERS ONE STORMCEPTOR
D4	BMP 4 SIZE: 57' X 65.5' PIPE: 7 ROWS OF 60" HDPE WRAPPED WITH 6" STONE TOTAL 60" HDPE LENGTH: 571' TWO HEADERS ONE STORMCEPTOR
D5	BMP 5 RAIN GARDEN SIZE: 6' X 61' PIPE: 1 ROW OF 48" HDPE WRAPPED WITH 6" STONE TOTAL 48" HDPE LENGTH: 55'
D6	15" HDPE STORM PIPE
D7	15" RCP STORM PIPE
D8	18" RCP STORM PIPE
D9	24" RCP STORM PIPE
D10	STORM MANHOLE
D11	STORM INLET
D12	T-JOINT
D13	ELBOW
D14	RAINWATER HARVESTING CISTERN
D15	CLEAN OUT
D16	NON-POTABLE LINE FROM CISTERN TO BLDG
D17	4" HDPE PERFORATED PIPE WITH FILTER FABRIC AND 6" STONE BED
D18	END SECTION
D19	OIL/WATER SEPARATOR
D20	OUTLET CONTROL STRUCTURE
D21	PIPE FROM ROOFDRAIN TO CISTERN
D22	VORTEX FILTER
D23	RAINGARDEN
	SITE
T1	ADA ACCESS RAMP
T2	PAVILION AND PICNIC TABLES WITH GRILLS (GAS AND CHARCOAL) ACCESSED BY EXISTING SIDEWALK
T3	EXISTING SIDEWALK
T4	BASKETBALL COURT W/ 6 BENCHES ACCESSED BY EXISTING SIDEWALK
T5	6' SIDEWALK
T6	8' SIDEWALK
T7	WASHING STATION
T8	DRYING STATION
T9	DROP ARM
T10	FIRE ACCESS ROAD END AT EXISTING EOP
T11	4' SIDEWALK
T12	BIKE RACKS
T13	SMOKING GAZEBO
T14	5' SIDEWALK
T15	ADA ACCESSIBLE ROUTE
T16	1624 SF RECREATION SHELTER
T17	FIRE ACCESS ROAD GRASS PAVER
T18	MAIN ENTRY PLAZA WITH BENCHES, GRILL AND RECEPTACLE
T19	600 SF SECONDARY SHADE STRUCTURE
T20	3000 SF MARTIAL ARTS PIT
T21	3600 SF MAIN SHADE STRUCTURE
T22	24' X 170' OBSTACLE COURSE COVERED WITH 2" CRUSHED GRAVEL (0.16"-0.31")
T23	DUMPSTER
T24	FLAGPOLE
T25	TORII GATE AND CANNON PLAZA
T26	SEAT WALL
T27	RETAINING WALL
	ELECTRIC
E6	OVERHEAD ELECTRIC LINE REROUTE

NAVFAC

PROPOSAL
FEBRUARY 7, 2013

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DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND – MID-ATLANTIC
NAVAL STATION – NORFOLK, VIRGINIA

INSTALLATION
NAVAL WEAPONS STATION YORKTOWN, VIRGINIA

P-984 REGIMENTAL HEADQUARTERS &
P-985 BACHELOR ENLISTED QUARTERS

OVERALL SITE & LANDSCAPING PLAN

PROJ MGR
BRANCH MGR
ARCH ENG
FIRE PROT

SHEET 1 OF 10

C-100

02/15/2013 2:12PM

APPENDIX II

SUMMARY OF SOIL CLASSIFICATION

GET Solutions, Inc.
Geotechnical • Environmental • Testing

Virginia Beach
204 Grayson Road
Virginia Beach, VA 23462
(757) 518-1703

Williamsburg
1592 Penniman Rd. Suite E
Williamsburg, Virginia 23185
(757) 564-6452

Elizabeth City
504 East Elizabeth St. Suite 2
Elizabeth City, NC 27909
(252) 335-9765

CLASSIFICATION SYSTEM FOR SOIL EXPLORATION

Standard Penetration Test (SPT), N-value

Standard Penetration Tests (SPT) were performed in the field in general accordance with ASTM D 1586. The soil samples were obtained with a standard 1.4" I.D., 2" O.D., 30" long split-spoon sampler. The sampler was driven with blows of a 140 lb. hammer falling 30 inches. The number of blows required to drive the sampler each 6-inch increment (4 increments for each soil sample) of penetration was recorded and is shown on the boring logs. The sum of the second and third penetration increments is termed the SPT N-value.

NON COHESIVE SOILS

(SILT, SAND, GRAVEL and Combinations)

Relative Density

Very Loose	4 blows/ft. or less
Loose	5 to 10 blows/ft.
Medium Dense	11 to 30 blows/ft.
Dense	31 to 50 blows/ft.
Very Dense	51 blows/ft. or more

Particle Size Identification

Boulders		8 inch diameter or more
Cobbles		3 to 8 inch diameter
Gravel	Coarse	1 to 3 inch diameter
	Medium	$^1/_2$ to 1 inch diameter
	Fine	$^1/_4$ to $^1/_2$ inch diameter
Sand	Coarse	2.00 mm to $^1/_4$ inch (diameter of pencil lead)
	Medium	0.42 to 2.00 mm (diameter of broom straw)
	Fine	0.074 to 0.42 mm (diameter of human hair)
Silt		0.002 to 0.074 mm (cannot see particles)

COHESIVE SOILS

(CLAY, SILT and Combinations)

Consistency

Very Soft	2 blows/ft. or less
Soft	3 to 4 blows/ft.
Medium Stiff	5 to 8 blows/ft.
Stiff	9 to 15 blows/ft.
Very Stiff	16 to 30 blows/ft.
Hard	31 blows/ft. or more

Relative Proportions

Descriptive Term	Percent
Trace	0-5
Few	5-10
Little	15-25
Some	30-45
Mostly	50-100

Strata Changes

In the column "Description" on the boring log, the horizontal lines represent approximate strata changes.

Groundwater Readings

Groundwater conditions will vary with environmental variations and seasonal conditions, such as the frequency and magnitude of rainfall patterns, as well as tidal influences and man-made influences, such as existing swales, drainage ponds, underdrains and areas of covered soil (paved parking lots, side walks, etc.).

CLASSIFICATION SYMBOLS (ASTM D 2487 and D 2488)

Coarse Grained Soils

More than 50% retained on No. 200 sieve

GW - Well-graded Gravel
GP - Poorly graded Gravel
GW-GM - Well-graded Gravel w/Silt
GW-GC - Well-graded Gravel w/Clay
GP-GM - Poorly graded Gravel w/Silt
GP-GC - Poorly graded Gravel w/Clay
GM - Silty Gravel
GC - Clayey Gravel
GC-GM - Silty, Clayey Gravel
SW - Well-graded Sand
SP - Poorly graded Sand
SW-SM - Well-graded Sand w/Silt
SW-SC - Well-graded Sand w/Clay
SP-SM - Poorly graded Sand w/Silt
SP-SC - Poorly graded Sand w/Clay
SM - Silty Sand
SC - Clayey Sand
SC-SM - Silty, Clayey Sand

Fine-Grained Soils

50% or more passes the No. 200 sieve

CL - Lean Clay
CL-ML - Silty Clay
ML - Silt
OL - Organic Clay/Silt

Liquid Limit 50% or greater

CH - Fat Clay
MH - Elastic Silt
OH - Organic Clay/Silt

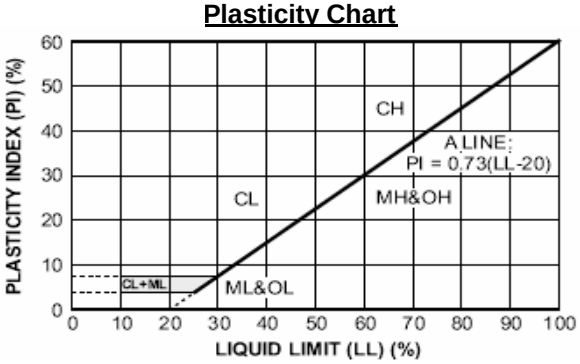
Highly Organic Soils

PT - Peat

Depending on percentage of fines (fraction smaller than No. 200 sieve size), coarse-grained soils are classified as follows:

Less than 5 percent	GW, GP, SW,SP
More than 12 percent	GM, GC, SM, SC
5 to 12 percent	Borderline cases requiring dual symbols

Plasticity Chart



APPENDIX III

BORING LOGS

GET Solutions, Inc.
Geotechnical • Environmental • Testing

BORING LOG B-1

PROJECT: P984 Regimental Headquarters & P985 Bachelor Enlisted Quarters
CLIENT: The Walsh Group
PROJECT LOCATION: Naval Weapons Station, Yorktown, Virginia
PROJECT NO.: WM13-174g
BORING LOCATION: See attached boring location
SURFACE ELEVATION: 67'
DRILLER: GET Solutions, Inc.
LOGGED BY: J. Robinson, P.E.
DRILLING METHOD: Rotary wash "mud"
DATE: 11-22-13
DEPTH TO WATER - INITIAL*: ▽ 23' **AFTER 24 HOURS:** ▽ ___
CAVING> C

Elevation (MSL) (ft)	Depth (meters)	Depth (feet)	Description	Graphic	Sample No.	Sample Recovery	Sample Type	Blows Per 6"	N Value	% < #200
	0	0								
			2" Topsoil (0.17)		1	14	SS	3 4 5 5	9	
65			Mottled Orange to Gray, Moist, lean CLAY (CL) with varying amounts of fine Sand, Stiff to Very Stiff		2	16	SS	5 5 6 7	11	80
		5			3	18	SS	7 8 9 12	17	
60	2				4	24	SS	11 11 12 12	23	
					5	20	SS	4 6 8 11	14	
		10			6	16	SS	3 7 8 11	15	
55										
	4				7	14	SS	3 6 8 9	14	
		15	Mottled Orange to Gray, Moist, Clayey fine to medium SAND (SC), Medium Dense (14)							
50										
					8	14	SS	5 5 7 7	12	
	6	20	Mottled Orange to Gray, Moist to Wet, Silty fine to medium SAND (SM) with varying amounts of Clay, Medium Dense (18)							
45										
			▽		9	14	SS	6 7 10 5	17	
		25								
	8									
40										
			Orange, Wet, fine Sandy SILT (ML), Soft (28)		10	24	SS	1 1 2 2	3	55
		30								
35										
	10				11	24	SS	1 1 2 2	3	
		35								
30										

TEST RESULTS
Plastic Limit ⊢ Liquid Limit
Moisture Content - ●
N-Value - ▨
10 20 30 40 50 60 70

Notes:

**The initial groundwater reading may not be indicative of the static groundwater level.*

SS = Split Spoon Sample
ST = Shelby Tube Sample
HA = Hand Auger Sample
BS = Bulk Sample
WOH = Weight of Hammer

Standard Penetration Tests were performed in the field in general accordance with ASTM D 1586.

GET Solutions, Inc.
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BORING LOG B-1

PROJECT: P984 Regimental Headquarters & P985 Bachelor Enlisted Quarters
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DRILLING METHOD: Rotary wash "mud" **DATE:** 11-22-13
DEPTH TO WATER - INITIAL*: ▽ 23' **AFTER 24 HOURS:** ▽ ___ **CAVING>** C

Elevation (MSL) (ft)	Depth (meters)	Depth (feet)	Description	Graphic	Sample No.	Sample Recovery	Sample Type	Blows Per 6"	N Value	% < #200
			38							
	12	40	Mottled Orange to Gray, Wet, Silty fine to medium SAND (SM) with Clay and marine shell fragments, Loose "Yorktown Formation"		12	24	SS	3 3 4 4	7	
			Boring terminated at 40 ft.							
25										
		45								
	14									
20										
		50								
15	16									
		55								
10										
	18									
		60								
5										
	20	65								
0										
		70								
-5	22									
		75								

TEST RESULTS
Plastic Limit ⊢ Liquid Limit
Moisture Content - ●
N-Value - ▨
10 20 30 40 50 60 70

Notes:

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ST = Shelby Tube Sample
HA = Hand Auger Sample
BS = Bulk Sample
WOH = Weight of Hammer

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BORING LOG B-2

PROJECT: P984 Regimental Headquarters & P985 Bachelor Enlisted Quarters
CLIENT: The Walsh Group
PROJECT LOCATION: Naval Weapons Station, Yorktown, Virginia
PROJECT NO.: WM13-174g
BORING LOCATION: See attached boring location
SURFACE ELEVATION: 67'
DRILLER: GET Solutions, Inc.
LOGGED BY: J. Robinson, P.E.
DRILLING METHOD: Rotary wash "mud"
DATE: 11-22-13
DEPTH TO WATER - INITIAL*: ▽ 23' **AFTER 24 HOURS:** ▽ ___
CAVING> C

Elevation (MSL) (ft)	Depth (meters)	Depth (feet)	Description	Graphic	Sample No.	Sample Recovery	Sample Type	Blows Per 6"	N Value	% < #200
	0	0								
			1" Topsoil		1	8	SS	5 9 8 8	17	
65			0.08 Brown, Moist, Silty fine to medium SAND (SM) with trace fine to medium Gravel, Medium Dense "FILL"							
			2 Mottled Orange to Gray, Moist, lean CLAY (CL) with trace to little fine Sand, Stiff to Very Stiff		2	20	SS	7 7 6 6	13	
		5			3	18	SS	6 6 7 5	13	80
60	2				4	24	SS	8 10 11 12	21	
					5	16	SS	5 7 11 15	18	
		10	10 Mottled Orange to Gray, Moist to Wet, Clayey fine to medium SAND (SC), Loose to Medium Dense		6	24	SS	5 7 11 13	18	
55										
	4				7	16	SS	1 4 5 7	9	
		15								
50										
	6	20			8	20	SS	4 5 8 8	13	37
45										
			24 Mottled Orange to Gray, Wet, Silty fine to medium SAND (SM), Medium Dense		9	16	SS	5 6 6 8	12	
		25								
40	8									
			28 Orange, Wet, SILT (ML) with some fine Sand, Very Soft		10	18	SS	2 1 1 2	2	73
		30								
35										
	10		33 Mottled Orange to Gray, Wet, Clayey fine to medium SAND (SC), Very Loose		11	2	SS	1 1 1 1	2	
		35								
30										

TEST RESULTS
Plastic Limit ⊢ Liquid Limit
Moisture Content - ●
N-Value - ▨
10 20 30 40 50 60 70

Notes:

SS = Split Spoon Sample
ST = Shelby Tube Sample
HA = Hand Auger Sample
BS = Bulk Sample
WOH = Weight of Hammer

*The initial groundwater reading may not be indicative of the static groundwater level.

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BORING LOG B-2

PROJECT: P984 Regimental Headquarters & P985 Bachelor Enlisted Quarters
CLIENT: The Walsh Group
PROJECT LOCATION: Naval Weapons Station, Yorktown, Virginia **PROJECT NO.:** WM13-174g
BORING LOCATION: See attached boring location **SURFACE ELEVATION:** 67'
DRILLER: GET Solutions, Inc. **LOGGED BY:** J. Robinson, P.E.
DRILLING METHOD: Rotary wash "mud" **DATE:** 11-22-13
DEPTH TO WATER - INITIAL*: ▽ 23' **AFTER 24 HOURS:** ▽ ___ **CAVING>** C

Elevation (MSL) (ft)	Depth (meters)	Depth (feet)	Description	Graphic	Sample No.	Sample Recovery	Sample Type	Blows Per 6"	N Value	% < #200
			38							
	12		Mottled Orange to Gray, Wet, fine Sandy lean CLAY (CL), Very Soft		12	24	SS	1 1 1 1	2	
		40	Boring terminated at 40 ft.							
25										
		45								
	14									
20										
		50								
15	16									
		55								
10										
	18									
		60								
5										
	20	65								
0										
		70								
-5	22									
		75								

TEST RESULTS
Plastic Limit ⊢ Liquid Limit
Moisture Content - ●
N-Value - ▨
10 20 30 40 50 60 70

Notes:

**The initial groundwater reading may not be indicative of the static groundwater level.*

SS = Split Spoon Sample
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HA = Hand Auger Sample
BS = Bulk Sample
WOH = Weight of Hammer

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BORING LOG B-3

PROJECT: P984 Regimental Headquarters & P985 Bachelor Enlisted Quarters
CLIENT: The Walsh Group
PROJECT LOCATION: Naval Weapons Station, Yorktown, Virginia
PROJECT NO.: WM13-174g
BORING LOCATION: See attached boring location
SURFACE ELEVATION: 76'
DRILLER: GET Solutions, Inc.
LOGGED BY: J. Robinson, P.E.
DRILLING METHOD: Rotary wash "mud"
DATE: 11-22-13
DEPTH TO WATER - INITIAL*: ▽ 28' **AFTER 24 HOURS:** ▽ ___ **CAVING>** C

Elevation (MSL) (ft)	Depth (meters)	Depth (feet)	Description	Graphic	Sample No.	Sample Recovery	Sample Type	Blows Per 6"	N Value	% < #200
	0	0								
75			3" Topsoil		1	18	SS	3 4 4 4	8	30
			0.25 Mottled Orange to Gray, Moist, Clayey fine to medium SAND (SC), Loose to Dense		2	14	SS	5 7 9 12	16	
		5			3	14	SS	12 16 18 21	34	
70	2				4	16	SS	18 20 17 18	37	
					5	18	SS	7 7 10 10	17	
		10			6	18	SS	5 5 7 7	12	
65										
	4				7	12	SS	4 4 6 7	10	31
		15								
60										
					8	18	SS	4 3 5 5	8	
	6	20								
55										
			23 Mottled Orange to Gray, Moist, fine Sandy lean CLAY (CL), Very Stiff		9	16	SS	4 7 9 8	16	
		25	24.5 Mottled Orange to Gray, Moist to Wet, Silty fine to medium SAND (SM), Medium Dense							
50	8									
			▽		10	14	SS	6 6 9 10	15	
		30								
45										
	10									
			33 Orange, Wet, fine Sandy fat CLAY (CH), Very Soft to Soft		11	24	SS	1 1 1 1	2	60
		35								
40										

TEST RESULTS
Plastic Limit ⊢ Liquid Limit
Moisture Content - ●
N-Value - ▨
10 20 30 40 50 60 70

Notes: *The topsoil thickness noted above is not expected to be indicative of the thicknesses that will be encountered across the site as the boring location was cleared for accessibility prior to drilling.

*The initial groundwater reading may not be indicative of the static groundwater level.

SS = Split Spoon Sample
ST = Shelby Tube Sample
HA = Hand Auger Sample
BS = Bulk Sample
WOH = Weight of Hammer

Standard Penetration Tests were performed in the field in general accordance with ASTM D 1586.

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Geotechnical • Environmental • Testing

BORING LOG B-3

PROJECT: P984 Regimental Headquarters & P985 Bachelor Enlisted Quarters
CLIENT: The Walsh Group
PROJECT LOCATION: Naval Weapons Station, Yorktown, Virginia **PROJECT NO.:** WM13-174g
BORING LOCATION: See attached boring location **SURFACE ELEVATION:** 76'
DRILLER: GET Solutions, Inc. **LOGGED BY:** J. Robinson, P.E.
DRILLING METHOD: Rotary wash "mud" **DATE:** 11-22-13
DEPTH TO WATER - INITIAL*: ▽ 28' **AFTER 24 HOURS:** ▽ ___ **CAVING>** C

Elevation (MSL) (ft)	Depth (meters)	Depth (feet)	Description	Graphic	Sample No.	Sample Recovery	Sample Type	Blows Per 6"	N Value	% < #200
			Orange, Wet, fine Sandy fat CLAY (CH), Very Soft to Soft		12	14	SS	1 1 3 2	4	
	12	40								
35			Boring terminated at 40 ft.							
		45								
30	14									
		50								
25	16									
		55								
20	18									
		60								
15	20									
		65								
10										
		70								
5	22									
		75								

TEST RESULTS
Plastic Limit ⊢ Liquid Limit
Moisture Content - ●
N-Value - ▨
10 20 30 40 50 60 70

Notes: *The topsoil thickness noted above is not expected to be indicative of the thicknesses that will be encountered across the site as the boring location was cleared for accessibility prior to drilling.

*The initial groundwater reading may not be indicative of the static groundwater level.

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HA = Hand Auger Sample
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WOH = Weight of Hammer

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BORING LOG B-4

PROJECT: P984 Regimental Headquarters & P985 Bachelor Enlisted Quarters
CLIENT: The Walsh Group
PROJECT LOCATION: Naval Weapons Station, Yorktown, Virginia
PROJECT NO.: WM13-174g
BORING LOCATION: See attached boring location
SURFACE ELEVATION: 78'
DRILLER: GET Solutions, Inc.
LOGGED BY: J. Robinson, P.E.
DRILLING METHOD: Rotary wash "mud"
DATE: 11-22-13
DEPTH TO WATER - INITIAL*: ▽ 28' **AFTER 24 HOURS:** ▽ ___
CAVING> C

Elevation (MSL) (ft)	Depth (meters)	Depth (feet)	Description	Graphic	Sample No.	Sample Recovery	Sample Type	Blows Per 6"	N Value	% < #200
	0	0								
			4" Topsoil (0.33)		1	16	SS	2 2 4 4	6	
			Mottled Orange to Gray, Moist, lean CLAY (CL) with little fine Sand, Medium Stiff (2)		2	18	SS	6 19 13 12	32	
75		5	Mottled Orange to Gray, Moist, Clayey fine to medium SAND (SC), Medium Dense to Dense		3	14	SS	12 14 17 21	31	
	2				4	14	SS	18 21 19 20	40	
70		10			5	24	SS	6 8 8 10	16	38
					6	14	SS	6 6 7 8	13	
65	4		Mottled Orange to Gray, Moist to Wet, Silty fine to medium SAND (SM) with varying amounts of Clay, Loose to Medium Dense (13)		7	18	SS	5 5 4 5	9	
		15								
60					8	18	SS	4 4 4 6	8	
	6	20								
55					9	19	SS	4 4 4 5	8	27
	8	25								
50			▽		10	14	SS	6 6 8 8	14	
		30								
45	10				11	14	SS	6 6 7 8	13	
		35								

TEST RESULTS
Plastic Limit ⊢ Liquid Limit
Moisture Content - ●
N-Value - ▨
10 20 30 40 50 60 70

Notes: *The topsoil thickness noted above is not expected to be indicative of the thicknesses that will be encountered across the site as the boring location was cleared for accessibility prior to drilling.

*The initial groundwater reading may not be indicative of the static groundwater level.

SS = Split Spoon Sample
ST = Shelby Tube Sample
HA = Hand Auger Sample
BS = Bulk Sample
WOH = Weight of Hammer

Standard Penetration Tests were performed in the field in general accordance with ASTM D 1586.

GET Solutions, Inc.
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BORING LOG B-4

PROJECT: P984 Regimental Headquarters & P985 Bachelor Enlisted Quarters
CLIENT: The Walsh Group
PROJECT LOCATION: Naval Weapons Station, Yorktown, Virginia **PROJECT NO.:** WM13-174g
BORING LOCATION: See attached boring location **SURFACE ELEVATION:** 78'
DRILLER: GET Solutions, Inc. **LOGGED BY:** J. Robinson, P.E.
DRILLING METHOD: Rotary wash "mud" **DATE:** 11-22-13
DEPTH TO WATER - INITIAL*: ▽ 28' **AFTER 24 HOURS:** ▽ ___ **CAVING>** C

Elevation (MSL) (ft)	Depth (meters)	Depth (feet)	Description	Graphic	Sample No.	Sample Recovery	Sample Type	Blows Per 6"	N Value	% < #200
40										
			38							
	12	40	Mottled Orange to Gray, Wet, Silty fine to medium SAND (SM) with Clay and marine shell fragments, Medium Dense "Yorktown Formation"		12	24	SS	6 8 10 4	18	
			Boring terminated at 40 ft.							
35										
		45								
	14									
30										
		50								
	16									
25										
		55								
20										
	18									
		60								
15										
		65								
	20									
10										
		70								
	22									
5										
		75								

TEST RESULTS
Plastic Limit ⊢ Liquid Limit
Moisture Content - ●
N-Value - ▨
10 20 30 40 50 60 70

Notes: *The topsoil thickness noted above is not expected to be indicative of the thicknesses that will be encountered across the site as the boring location was cleared for accessibility prior to drilling.

*The initial groundwater reading may not be indicative of the static groundwater level.

SS = Split Spoon Sample
ST = Shelby Tube Sample
HA = Hand Auger Sample
BS = Bulk Sample
WOH = Weight of Hammer

Standard Penetration Tests were performed in the field in general accordance with ASTM D 1586.

GET Solutions, Inc.
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BORING LOG
BMP-1

PROJECT: P984 Regimental Headquarters & P985 Bachelor Enlisted Quarters
CLIENT: The Walsh Group
PROJECT LOCATION: Naval Weapons Station, Yorktown, Virginia
PROJECT NO.: WM13-174g
BORING LOCATION: See attached boring location
SURFACE ELEVATION: 61'
DRILLER: GET Solutions, Inc.
LOGGED BY: J. Robinson, P.E.
DRILLING METHOD: Rotary wash "mud"
DATE: 12-2-13
DEPTH TO WATER - INITIAL*: NE **AFTER 24 HOURS:** NE **CAVING>** C

Elevation (MSL) (ft)	Depth (meters)	Depth (feet)	Description	Graphic	Sample No.	Sample Recovery	Sample Type	Blows Per 6"	N Value	% < #200
	0	0								
60			1" Topsoil 0.08		1	15	SS	2 4 7 7	11	
			Mottled Orange to Gray, Moist, lean CLAY (CL) with trace fine Sand, Stiff 2		2	24	SS	9 13 15 13	28	
			Mottled Orange to Gray, Moist, Clayey fine to medium SAND (SC), Medium Dense to Dense		3	24	SS	20 20 23 21	43	
55	2	5			4	24	SS	15 15 15 13	30	
			Mottled Orange to Gray, Moist, lean CLAY (CL) varying amounts of fine Sand, Stiff to Very Stiff 8		5	24	SS	4 4 5 7	9	
		10			6	24	SS	7 9 11 12	20	69
50	4									
		15			7	24	SS	3 4 6 7	10	
45			Boring terminated at 15 ft.							
	6	20								
40										
		25								
35	8									
		30								
30										
	10									
		35								
25										

TEST RESULTS
Plastic Limit ⊢ Liquid Limit
Moisture Content - ●
N-Value - ▨
10 20 30 40 50 60 70

Notes: *The topsoil thickness noted above is not expected to be indicative of the thicknesses that will be encountered across the site as the boring location was cleared for accessibility prior to drilling.

*The initial groundwater reading may not be indicative of the static groundwater level.

SS = Split Spoon Sample
ST = Shelby Tube Sample
HA = Hand Auger Sample
BS = Bulk Sample
WOH = Weight of Hammer

Standard Penetration Tests were performed in the field in general accordance with ASTM D 1586.

GET Solutions, Inc.
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BORING LOG
BMP-2

PROJECT: P984 Regimental Headquarters & P985 Bachelor Enlisted Quarters
CLIENT: The Walsh Group
PROJECT LOCATION: Naval Weapons Station, Yorktown, Virginia
PROJECT NO.: WM13-174g
BORING LOCATION: See attached boring location
SURFACE ELEVATION: 61'
DRILLER: GET Solutions, Inc.
LOGGED BY: J. Robinson, P.E.
DRILLING METHOD: Rotary wash "mud"
DATE: 12-3-13
DEPTH TO WATER - INITIAL*: NE **AFTER 24 HOURS:** NE **CAVING>** C

Elevation (MSL) (ft)	Depth (meters)	Depth (feet)	Description	Graphic	Sample No.	Sample Recovery	Sample Type	Blows Per 6"	N Value	% < #200
	0	0								
60			1" Topsoil		1	6	SS	2 1 3 1	4	
			0.08 Dark Brown, Moist, Silty fine to medium SAND (SM) with trace fine Gravel and trace fibrous organics, Very Loose "FILL"							
			2 Mottled Orange to Gray, Moist, lean CLAY (CL) with trace fine Sand, Medium Stiff to Very Stiff		2	20	SS	2 3 5 5	8	
		5			3	18	SS	5 7 10 12	17	
55	2		6 Mottled Orange to Gray, Moist, Clayey fine to medium SAND (SC), Dense		4	24	SS	11 13 18 17	31	
			8 Mottled Orange to Gray, Moist, fine Sandy lean CLAY (CL), Very Stiff		5	20	SS	3 8 10 11	18	
		10								51
50					6	20	SS	5 8 9 11	17	
	4									
					7	20	SS	3 4 7 6	11	
		15								
45			Boring terminated at 15 ft.							
	6	20								
40										
		25								
35	8									
		30								
30										
	10									
		35								
25										

TEST RESULTS
Plastic Limit ⊢ Liquid Limit
Moisture Content - ●
N-Value - ▨
10 20 30 40 50 60 70

Notes: *The topsoil thickness noted above is not expected to be indicative of the thicknesses that will be encountered across the site as the boring location was cleared for accessibility prior to drilling.

*The initial groundwater reading may not be indicative of the static groundwater level.

SS = Split Spoon Sample
ST = Shelby Tube Sample
HA = Hand Auger Sample
BS = Bulk Sample
WOH = Weight of Hammer

Standard Penetration Tests were performed in the field in general accordance with ASTM D 1586.

GET Solutions, Inc.
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BORING LOG
BMP-3

PROJECT: P984 Regimental Headquarters & P985 Bachelor Enlisted Quarters
CLIENT: The Walsh Group
PROJECT LOCATION: Naval Weapons Station, Yorktown, Virginia
PROJECT NO.: WM13-174g
BORING LOCATION: See attached boring location
SURFACE ELEVATION: 59'
DRILLER: GET Solutions, Inc.
LOGGED BY: J. Robinson, P.E.
DRILLING METHOD: Rotary wash "mud"
DATE: 12-3-13
DEPTH TO WATER - INITIAL*: NE **AFTER 24 HOURS:** NE **CAVING>** C

Elevation (MSL) (ft)	Depth (meters)	Depth (feet)	Description	Graphic	Sample No.	Sample Recovery	Sample Type	Blows Per 6"	N Value	% < #200
	0	0								
			1" Topsoil		1	12	SS	3 6 5 6	11	
			0.08 Dark Brown, Moist, Silty fine to medium SAND (SM) with Clay and trace fine Gravel, Medium Dense "FILL"							
			2 Mottled Orange to Gray, Moist, Clayey fine to medium SAND (SC), Medium Dense		2	14	SS	6 7 9 11	16	
55		5			3	20	SS	9 10 10 11	20	
	2				4	10	SS	12 12 12 12	24	
50					5	12	SS	12 12 11 10	23	
		10			6	16	SS	7 7 9 9	16	39
	4		13 Mottled Orange to Gray, Moist, Silty fine to medium SAND (SM) with trace Clay, Medium Dense		7	24	SS	10 10 10 7	20	
45		15	Boring terminated at 15 ft.							
40	6	20								
35		25								
	8									
30		30								
	10									
25		35								

TEST RESULTS
Plastic Limit ⊢ Liquid Limit
Moisture Content - ●
N-Value - ▨
10 20 30 40 50 60 70

Notes:

**The initial groundwater reading may not be indicative of the static groundwater level.*

SS = Split Spoon Sample
ST = Shelby Tube Sample
HA = Hand Auger Sample
BS = Bulk Sample
WOH = Weight of Hammer

Standard Penetration Tests were performed in the field in general accordance with ASTM D 1586.

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BORING LOG
BMP-4

PROJECT: P984 Regimental Headquarters & P985 Bachelor Enlisted Quarters
CLIENT: The Walsh Group
PROJECT LOCATION: Naval Weapons Station, Yorktown, Virginia
PROJECT NO.: WM13-174g
BORING LOCATION: See attached boring location
SURFACE ELEVATION: 66'
DRILLER: GET Solutions, Inc.
LOGGED BY: J. Robinson, P.E.
DRILLING METHOD: Rotary wash "mud"
DATE: 12-3-13
DEPTH TO WATER - INITIAL*: NE **AFTER 24 HOURS:** NE **CAVING>** C

Elevation (MSL) (ft)	Depth (meters)	Depth (feet)	Description	Graphic	Sample No.	Sample Recovery	Sample Type	Blows Per 6"	N Value	% < #200
	0	0								
65			1" Topsoil (0.08)		1	18	SS	2 4 8 10	12	
			Mottled Orange to Gray, Moist, fine Sandy lean CLAY (CL), Stiff							
		2	Mottled Orange to Gray, Moist, Clayey fine to medium SAND (SC), Medium Dense		2	18	SS	9 12 12 13	24	
		4	Mottled Orange to Gray, Moist, Silty fine to medium SAND (SM) with varying amounts of Clay, Medium Dense		3	24	SS	12 11 12 13	23	
60	2				4	24	SS	12 10 12 10	22	
		10			5	24	SS	9 10 9 10	19	
		10	Mottled Orange to Gray, Moist, Clayey fine to medium SAND (SC), Medium Dense		6	24	SS	6 7 9 11	16	44
55	4									
		15			7	20	SS	9 10 11 11	21	
50			Boring terminated at 15 ft.							
	6	20								
45										
	8	25								
40										
		30								
35	10									
		35								
30										

TEST RESULTS
Plastic Limit ⊢ Liquid Limit
Moisture Content - ●
N-Value - ▨
10 20 30 40 50 60 70

Notes:

**The initial groundwater reading may not be indicative of the static groundwater level.*

SS = Split Spoon Sample
ST = Shelby Tube Sample
HA = Hand Auger Sample
BS = Bulk Sample
WOH = Weight of Hammer

Standard Penetration Tests were performed in the field in general accordance with ASTM D 1586.

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BORING LOG
BMP-5

PROJECT: P984 Regimental Headquarters & P985 Bachelor Enlisted Quarters
CLIENT: The Walsh Group
PROJECT LOCATION: Naval Weapons Station, Yorktown, Virginia
PROJECT NO.: WM13-174g
BORING LOCATION: See attached boring location
SURFACE ELEVATION: 70'
DRILLER: GET Solutions, Inc.
LOGGED BY: J. Robinson, P.E.
DRILLING METHOD: Rotary wash "mud"
DATE: 12-3-13
DEPTH TO WATER - INITIAL*: NE **AFTER 24 HOURS:** NE **CAVING>** C

Elevation (MSL) (ft)	Depth (meters)	Depth (feet)	Description	Graphic	Sample No.	Sample Recovery	Sample Type	Blows Per 6"	N Value	% < #200
70	0	0								
			1" Topsoil							
			0.08							
			Mottled Orange to Gray, Moist, lean CLAY (CL) with trace to little fine Sand, Soft to Medium Stiff		1	20	SS	1 1 2 2	3	
					2	18	SS	2 2 5 6	7	
			4							
65		5	Mottled Orange to Gray, Moist, Clayey fine to medium SAND (SC), Medium Dense		3	20	SS	7 10 10 11	20	
	2				4	24	SS	15 13 13 14	26	
					5	16	SS	3 6 10 12	16	
60		10	9.5							17
			Mottled Orange to Gray, Moist, Silty fine to medium SAND (SM) with varying amounts of Clay, Loose to Medium Dense		6	24	SS	6 10 10 10	20	
	4									
					7	20	SS	2 4 5 7	9	
55		15								
			Boring terminated at 15 ft.							
50	6	20								
45		25								
	8									
40		30								
	10									
35		35								

TEST RESULTS
Plastic Limit ⊢ Liquid Limit
Moisture Content - ●
N-Value - ▨
10 20 30 40 50 60 70

Notes: *The topsoil thickness noted above is not expected to be indicative of the thicknesses that will be encountered across the site as the boring location was cleared for accessibility prior to drilling.

*The initial groundwater reading may not be indicative of the static groundwater level.

SS = Split Spoon Sample
ST = Shelby Tube Sample
HA = Hand Auger Sample
BS = Bulk Sample
WOH = Weight of Hammer

Standard Penetration Tests were performed in the field in general accordance with ASTM D 1586.

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BORING LOG
CBR-1

PROJECT: P984 Regimental Headquarters & P985 Bachelor Enlisted Quarters
CLIENT: The Walsh Group
PROJECT LOCATION: Naval Weapons Station, Yorktown, Virginia
PROJECT NO.: WM13-174g
BORING LOCATION: See attached boring location
SURFACE ELEVATION: 63'
DRILLER: GET Solutions, Inc.
LOGGED BY: J. Robinson, P.E.
DRILLING METHOD: Hollow Stem Auger
DATE: 12-2-13
DEPTH TO WATER - INITIAL*: NE **AFTER 24 HOURS:** ___
CAVING> C

Elevation (MSL) (ft)	Depth (meters)	Depth (feet)	Description	Graphic	Sample No.	Sample Recovery	Sample Type	Blows Per 6"	N Value	% < #200
	0	0								
			1" Topsoil							
			0.08							
			Mottled Orange to Gray, Moist, SILT (ML) with varying amounts of fine Sand, Soft to Medium Stiff		1	15	SS	2 2 2 3	4	71
60					2	12	SS	4 3 2 4	5	
		5			3	12	SS	5 4 3 6	7	
	2		6							
			Mottled Orange to Gray, Moist, Clayey fine to medium SAND (SC), Loose to Medium Dense		4	24	SS	4 3 4 4	7	
55					5	20	SS	4 6 8 9	14	
		10								
			Boring terminated at 10 ft.							
50	4									
		15								
45										
	6	20								
40										
		25								
	8									
35										
		30								
30	10									
		35								

TEST RESULTS
Plastic Limit ⊢ Liquid Limit
Moisture Content - ●
N-Value - ▨
10 20 30 40 50 60 70

Notes: *The topsoil thickness noted above is not expected to be indicative of the thicknesses that will be encountered across the site as the boring location was cleared for accessibility prior to drilling.

*The initial groundwater reading may not be indicative of the static groundwater level.

SS = Split Spoon Sample
ST = Shelby Tube Sample
HA = Hand Auger Sample
BS = Bulk Sample
WOH = Weight of Hammer

Standard Penetration Tests were performed in the field in general accordance with ASTM D 1586.

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BORING LOG
CBR-2

PROJECT: P984 Regimental Headquarters & P985 Bachelor Enlisted Quarters
CLIENT: The Walsh Group
PROJECT LOCATION: Naval Weapons Station, Yorktown, Virginia
PROJECT NO.: WM13-174g
BORING LOCATION: See attached boring location
SURFACE ELEVATION: 60'
DRILLER: GET Solutions, Inc.
LOGGED BY: J. Robinson, P.E.
DRILLING METHOD: Hollow Stem Auger
DATE: 12-3-13
DEPTH TO WATER - INITIAL*: NE **AFTER 24 HOURS:** **CAVING>** C

Elevation (MSL) (ft)	Depth (meters)	Depth (feet)	Description	Graphic	Sample No.	Sample Recovery	Sample Type	Blows Per 6"	N Value	% < #200
60	0	0								
			1" Topsoil (0.08)		1	18	SS	1 1 1 1	2	45
			Mottled Orange to Gray, Moist, Silty fine to medium SAND (SM), Very Soft to Medium Dense		2	18	SS	3 7 11 16	18	
55	5	5			3	18	SS	8 13 13 18	26	
	2				4	12	SS	13 13 16 14	29	
			(8) Mottled Orange to Gray, Moist, lean CLAY (CL) with little fine Sand, Very Stiff		5	24	SS	8 10 13 16	23	
50	10	10	Boring terminated at 10 ft.							
	4									
45		15								
	6									
40		20								
	8									
35		25								
	10									
30		30								
25		35								

TEST RESULTS
Plastic Limit ⊢ Liquid Limit
Moisture Content - ●
N-Value - ▨
10 20 30 40 50 60 70

Notes: *The topsoil thickness noted above is not expected to be indicative of the thicknesses that will be encountered across the site as the boring location was cleared for accessibility prior to drilling.

*The initial groundwater reading may not be indicative of the static groundwater level.

SS = Split Spoon Sample
ST = Shelby Tube Sample
HA = Hand Auger Sample
BS = Bulk Sample
WOH = Weight of Hammer

Standard Penetration Tests were performed in the field in general accordance with ASTM D 1586.

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BORING LOG
CBR-3

PROJECT: P984 Regimental Headquarters & P985 Bachelor Enlisted Quarters
CLIENT: The Walsh Group
PROJECT LOCATION: Naval Weapons Station, Yorktown, Virginia
PROJECT NO.: WM13-174g
BORING LOCATION: See attached boring location
SURFACE ELEVATION: 63'
DRILLER: GET Solutions, Inc.
LOGGED BY: J. Robinson, P.E.
DRILLING METHOD: Hollow Stem Auger
DATE: 12-3-13
DEPTH TO WATER - INITIAL*: NE **AFTER 24 HOURS:** **CAVING>** C

Elevation (MSL) (ft)	Depth (meters)	Depth (feet)	Description	Graphic	Sample No.	Sample Recovery	Sample Type	Blows Per 6"	N Value	% < #200
	0	0								
			4" Topsoil							
			0.33							
			Mottled Orange to Gray, Moist, lean CLAY (CL) varying amounts of fine Sand, Soft to Stiff		1	12	SS	3 4 5 7	9	71
60					2	15	SS	5 4 4 7	8	
		5			3	24	SS	5 3 2 2	5	
	2				4	24	SS	2 2 2 3	4	
55			8							
			Mottled Orange to Gray, Moist, Clayey fine to medium SAND (SC), Medium Dense		5	24	SS	3 6 6 8	12	
		10								
			Boring terminated at 10 ft.							
50	4									
		15								
45										
	6	20								
40										
		25								
	8									
35										
		30								
30	10									
		35								

TEST RESULTS
Plastic Limit ⊢ Liquid Limit
Moisture Content - ●
N-Value - ▨
10 20 30 40 50 60 70

Notes: *The topsoil thickness noted above is not expected to be indicative of the thicknesses that will be encountered across the site as the boring location was cleared for accessibility prior to drilling.

*The initial groundwater reading may not be indicative of the static groundwater level.

SS = Split Spoon Sample
ST = Shelby Tube Sample
HA = Hand Auger Sample
BS = Bulk Sample
WOH = Weight of Hammer

Standard Penetration Tests were performed in the field in general accordance with ASTM D 1586.

GET Solutions, Inc.
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BORING LOG
CBR-4

PROJECT: P984 Regimental Headquarters & P985 Bachelor Enlisted Quarters
CLIENT: The Walsh Group
PROJECT LOCATION: Naval Weapons Station, Yorktown, Virginia
PROJECT NO.: WM13-174g
BORING LOCATION: See attached boring location
SURFACE ELEVATION: 79'
DRILLER: GET Solutions, Inc.
LOGGED BY: J. Robinson, P.E.
DRILLING METHOD: Hollow Stem Auger
DATE: 12-3-13
DEPTH TO WATER - INITIAL*: NE **AFTER 24 HOURS:** ___
CAVING> C

Elevation (MSL) (ft)	Depth (meters)	Depth (feet)	Description	Graphic	Sample No.	Sample Recovery	Sample Type	Blows Per 6"	N Value	% < #200
	0	0								
			2" Topsoil							
			0.17							
			Mottled Orange to Gray, Moist, fine Sandy SILT (ML), Soft to Hard		1	12	SS	1 2 1 4	3	58
					2	16	SS	8 11 15 21	26	
75		5								
			5		3	20	SS	23 20 26 22	46	
	2		Mottled Orange to Gray, Moist, Clayey fine to medium SAND (SC), Dense							
					4	20	SS	19 17 22 20	39	
70					5	16	SS	21 16 17 17	33	
		10								
			Boring terminated at 10 ft.							
	4									
65		15								
	6									
60		20								
55		25								
	8									
50		30								
	10									
45		35								

TEST RESULTS
Plastic Limit ⊢ Liquid Limit
Moisture Content - ●
N-Value - ▨
10 20 30 40 50 60 70

Notes: *The topsoil thickness noted above is not expected to be indicative of the thicknesses that will be encountered across the site as the boring location was cleared for accessibility prior to drilling.

*The initial groundwater reading may not be indicative of the static groundwater level.

SS = Split Spoon Sample
ST = Shelby Tube Sample
HA = Hand Auger Sample
BS = Bulk Sample
WOH = Weight of Hammer

Standard Penetration Tests were performed in the field in general accordance with ASTM D 1586.

GET Solutions, Inc.
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BORING LOG
CBR-5

PROJECT: P984 Regimental Headquarters & P985 Bachelor Enlisted Quarters
CLIENT: The Walsh Group
PROJECT LOCATION: Naval Weapons Station, Yorktown, Virginia
PROJECT NO.: WM13-174g
BORING LOCATION: See attached boring location
SURFACE ELEVATION: 74'
DRILLER: GET Solutions, Inc.
LOGGED BY: J. Robinson, P.E.
DRILLING METHOD: Hollow Stem Auger
DATE: 12-3-13
DEPTH TO WATER - INITIAL*: NE **AFTER 24 HOURS:** ___ **CAVING>** C

Elevation (MSL) (ft)	Depth (meters)	Depth (feet)	Description	Graphic	Sample No.	Sample Recovery	Sample Type	Blows Per 6"	N Value	% < #200
	0	0								
			2" Topsoil							
			0.17							
			Mottled Orange to Gray, Moist, fine Sandy SILT (ML), Very Soft to Soft		1	14	SS	1 1 1 1	2	53
					2	14	SS	1 2 2 4	4	
70			4							
		5	Mottled Orange to Gray, Moist, Clayey fine to medium SAND (SC), Medium Dense		3	20	SS	8 8 11 11	19	
	2		6							
			Mottled Orange to Gray, Moist, Silty fine to medium SAND (SM), Medium Dense		4	14	SS	12 11 14 12	25	
65			8							
		10	Mottled Orange to Gray, Moist, Clayey fine to medium SAND (SC), Medium Dense		5	16	SS	10 10 12 12	22	
			Boring terminated at 10 ft.							
	4									
60		15								
55										
	6	20								
50										
		25								
	8									
45										
		30								
	10									
40										
		35								

TEST RESULTS
Plastic Limit ⊢ Liquid Limit
Moisture Content - ●
N-Value - ▨
10 20 30 40 50 60 70

Notes: *The topsoil thickness noted above is not expected to be indicative of the thicknesses that will be encountered across the site as the boring location was cleared for accessibility prior to drilling.

*The initial groundwater reading may not be indicative of the static groundwater level.

SS = Split Spoon Sample
ST = Shelby Tube Sample
HA = Hand Auger Sample
BS = Bulk Sample
WOH = Weight of Hammer

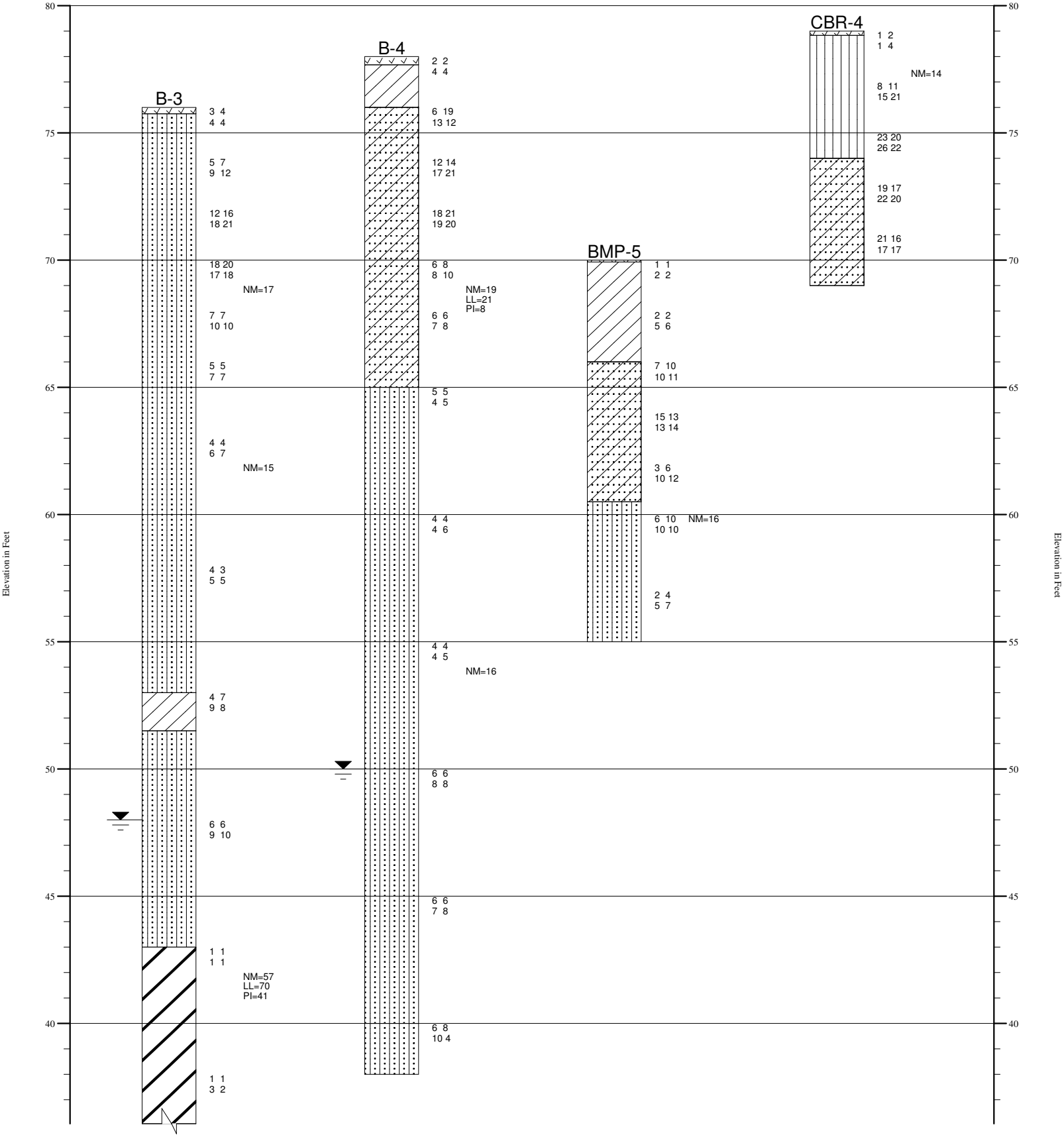
Standard Penetration Tests were performed in the field in general accordance with ASTM D 1586.

APPENDIX IV

GENERALIZED SOIL PROFILE

LOG OF BORINGS

P984 Regimental Headquarters & P985 Bachelor Enlisted Quarters



Topsoil

Fat Clay

Silty Sand

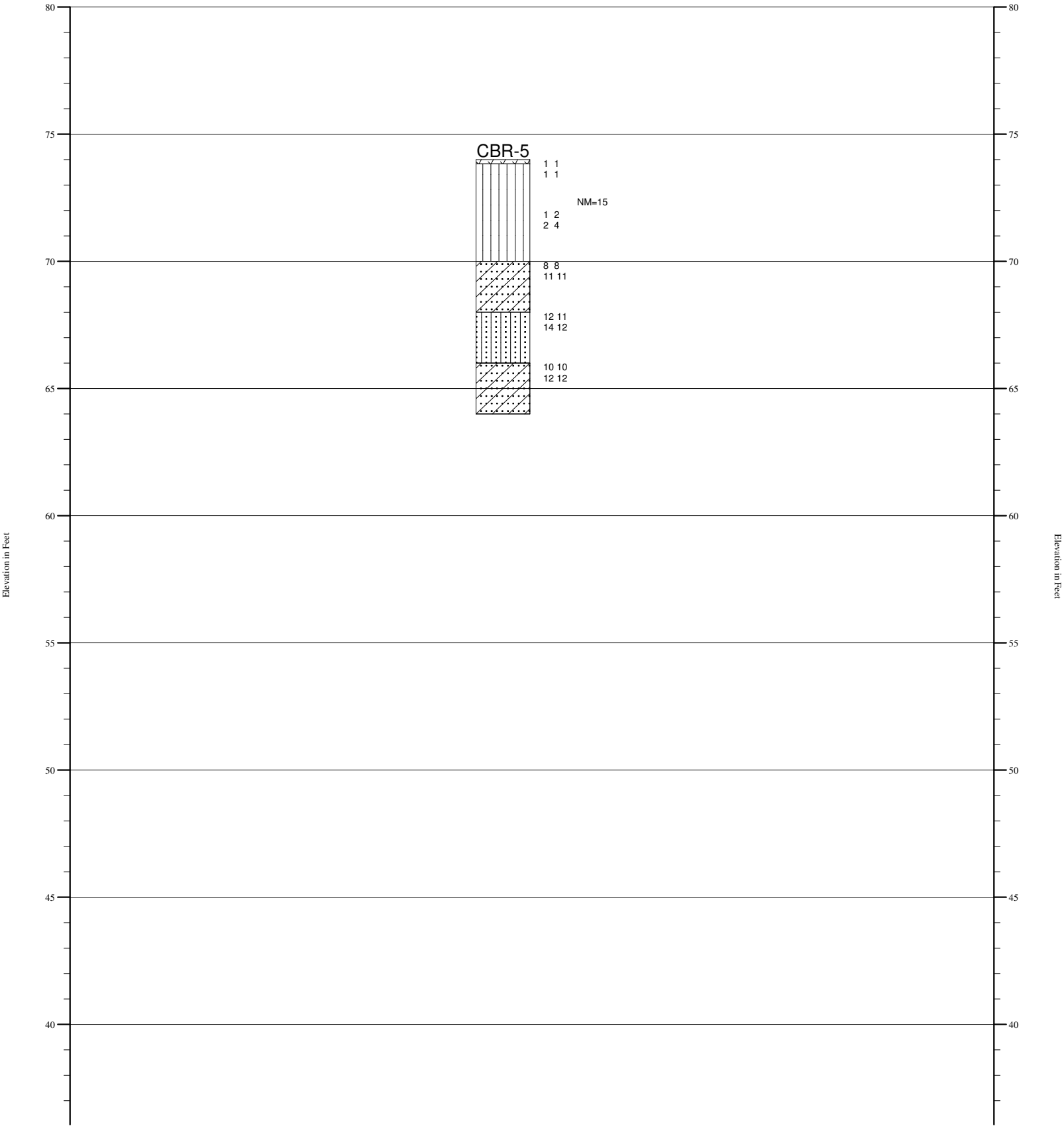
Clayey Sand

Lean Clay

Silt

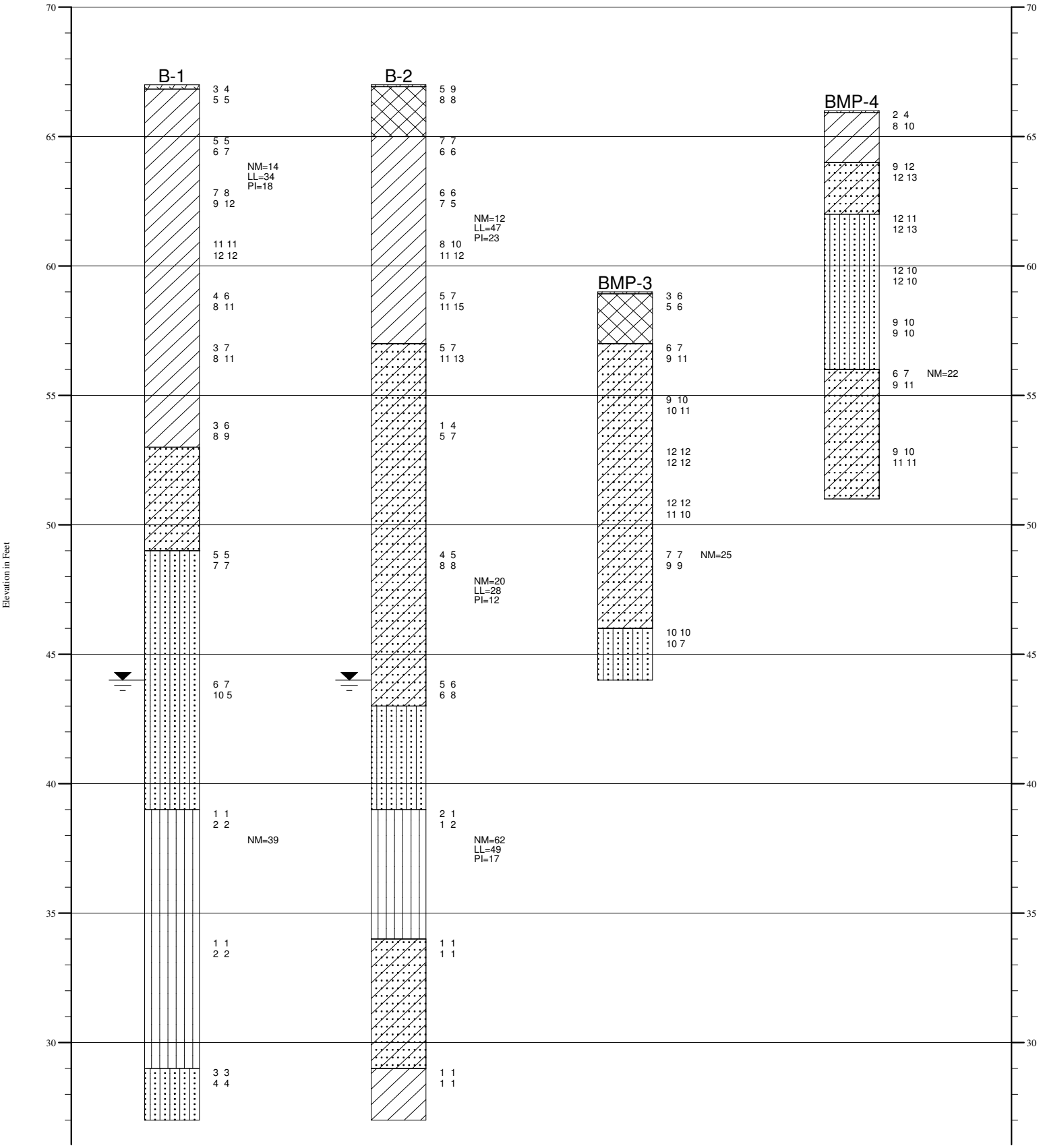
LOG OF BORINGS

P984 Regimental Headquarters & P985 Bachelor Enlisted Quarters



LOG OF BORINGS

P984 Regimental Headquarters & P985 Bachelor Enlisted Quarters



Topsoil

Lean Clay

Clayey Sand

Silty Sand

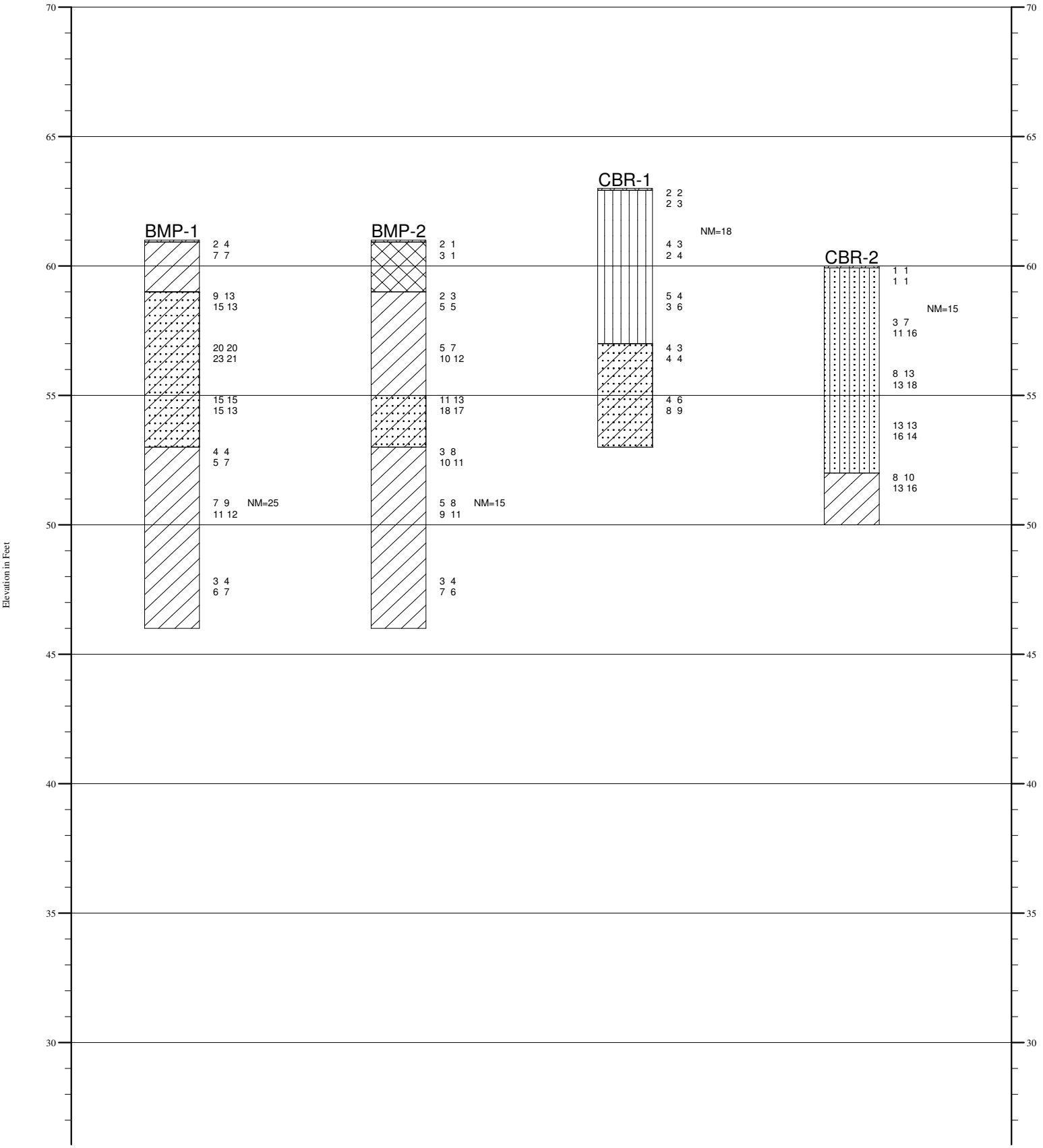
Silt

Fill

GET Solutions, Inc.

LOG OF BORINGS

P984 Regimental Headquarters & P985 Bachelor Enlisted Quarters

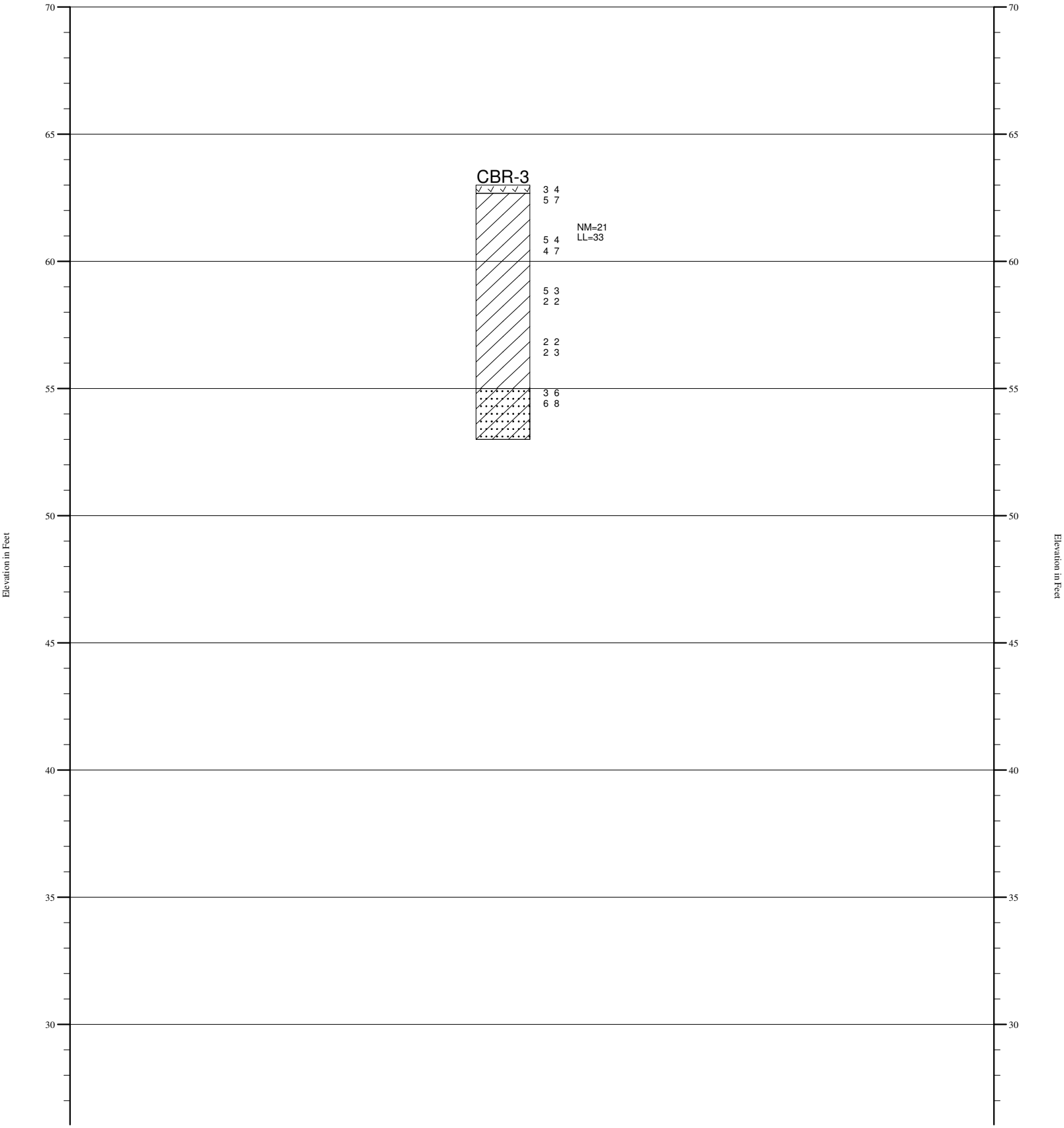


Topsoil
Fill
Lean Clay
Silt
Clayey Sand
Silty Sand

GET Solutions, Inc.

LOG OF BORINGS

P984 Regimental Headquarters & P985 Bachelor Enlisted Quarters



APPENDIX V

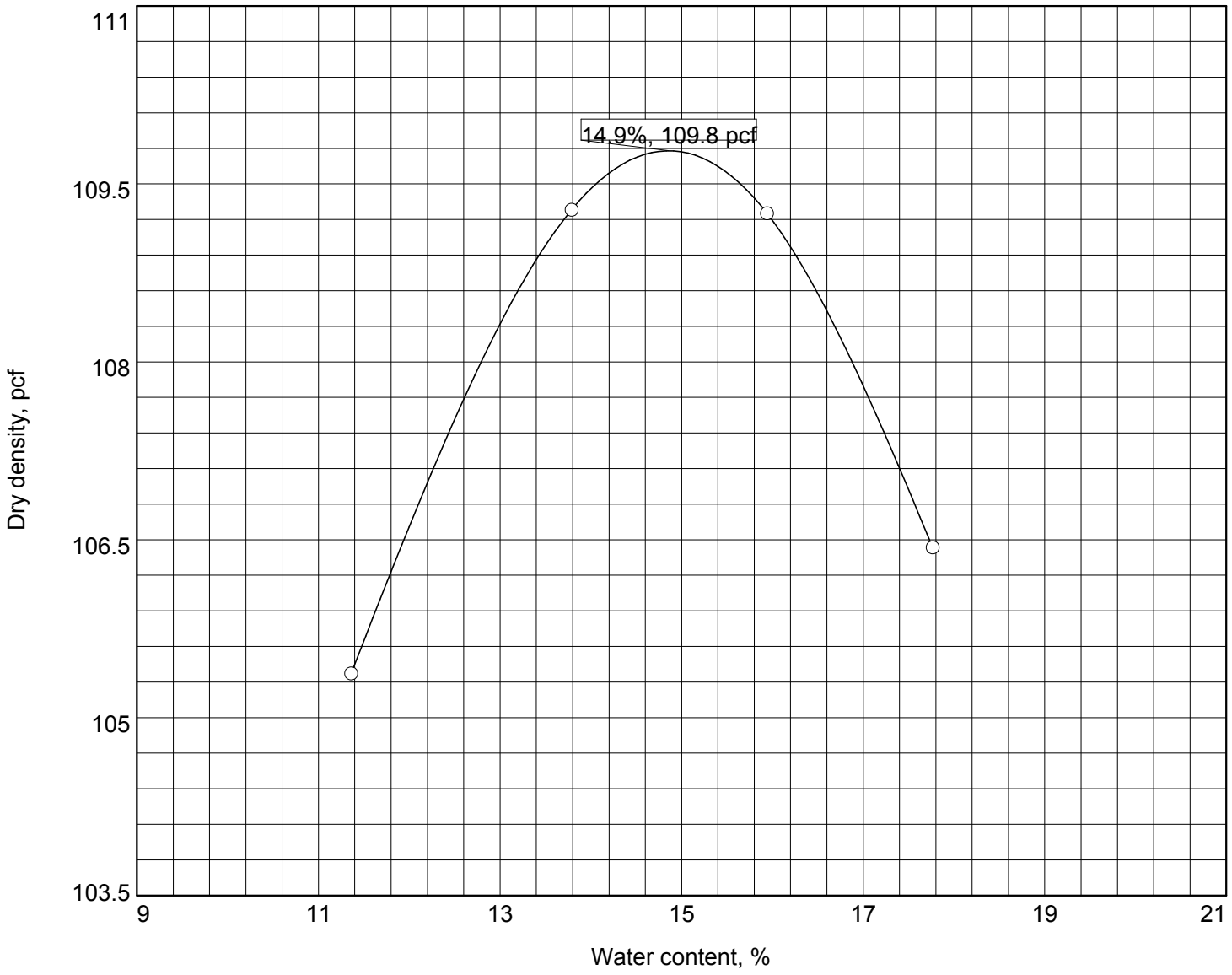
CBR TEST RESULTS

SUMMARY OF CBR TEST RESULTS

Sample Number	CBR-1	CBR-2	CBR-3	CBR-4	CBR-5
Sample Depth (ft.)	1-2	1-2	1-2	1-2	1-2
Unified Soil Classification Symbol	ML	SM	CL	ML	ML
Natural Moisture Content (%)	18	15	21	14	15
Atterberg Limits LL/PL/PI	Non-Plastic	Non-Plastic	33/17/16	Non-Plastic	Non-Plastic
% Passing #200 Sieve	71	45	71	58	53
Maximum Dry Density, pcf	109.8	114.5	105.8	120.5	118.0
Optimum Moisture %	14.9	12.4	18.8	9.9	10.3
Soaked CBR Value	13.6	15.8	11.9	15.7	13.5
Resiliency Factor	2.0	2.5	2.0	2.5	2.5
Swell %	0.2	0	1.7	0.2	0

P984 Regimental Headquarters & P985 Bachelor Enlisted Quarters
Naval Weapons Station, Yorktown, Virginia
G E T Project No: WM13-174G

MOISTURE DENSITY RELATIONSHIP (PROCTOR CURVE)



Test specification: ASTM D 698-07 Method A Standard

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > #4	% < No.200
	USCS	AASHTO						
1-2 Ft.	ML	A-4(0)	18	Estimated 2.7	NP	NP	0.0	71.1

TEST RESULTS

Maximum dry density = 109.8 pcf

Optimum moisture = 14.9 %

MATERIAL DESCRIPTION

Mottled Orange to Gray, SILT WITH SAND

Project No. WM13-174g **Client:** The Walsh Group

Project: P984 Regimental Headquarters & P985 Bachelor Enlisted Quarters

○ **Loc.:** CBR-1 - See Attached Boring Location Plan **Sample No.:** CBR-1

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Remarks:

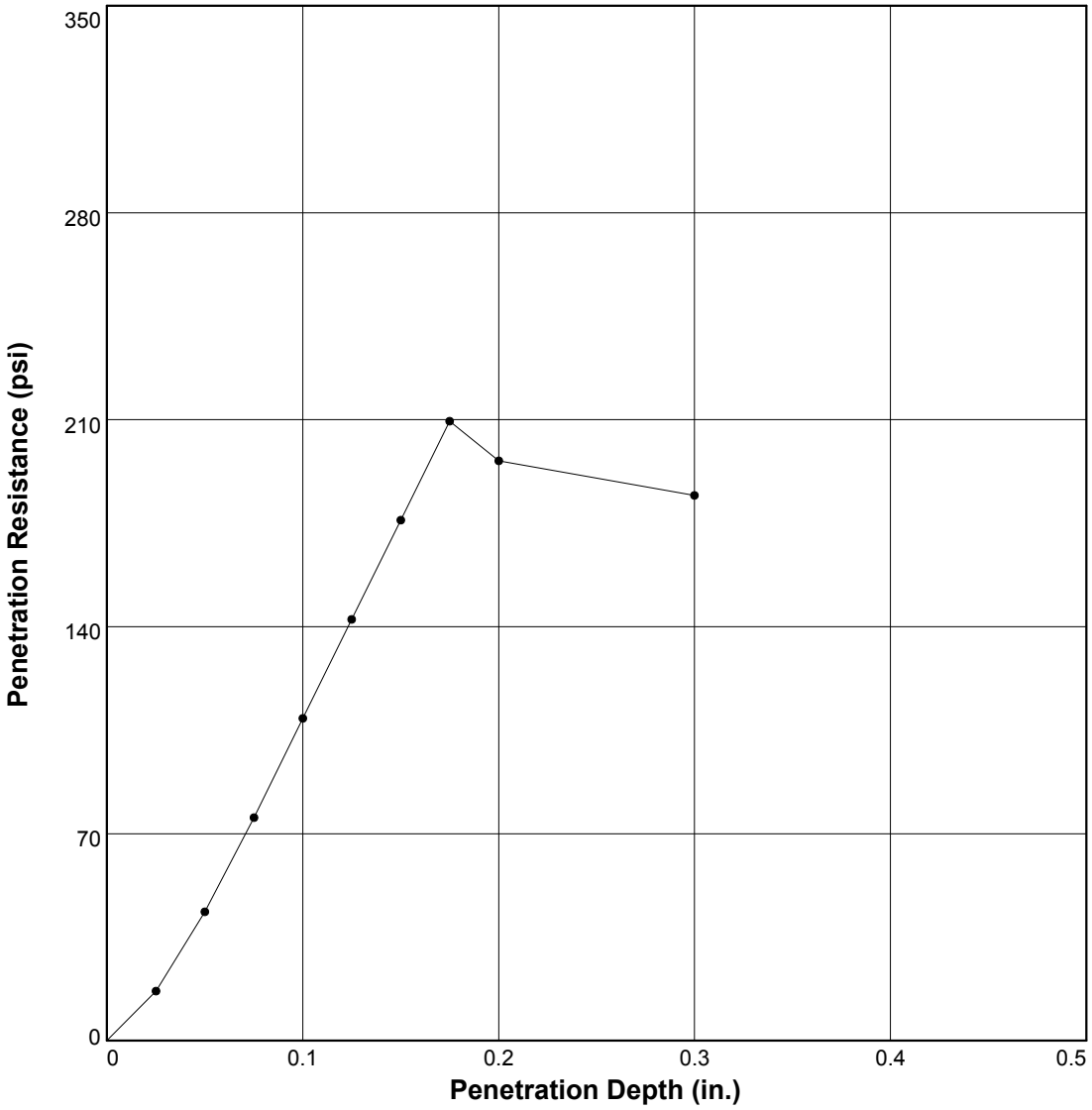
CBR-1

Sample Obtained: 12/2/2013

Figure 1

Tested By: T. Sabbah **Checked By:** J.Robinson

BEARING RATIO TEST REPORT
ASTM D 1883-07



	Molded			Soaked			CBR (%)		Linearity Correction (in.)	Surcharge (lbs.)	Max. Swell (%)
	Density (pcf)	Percent of Max. Dens.	Moisture (%)	Density (pcf)	Percent of Max. Dens.	Moisture (%)	0.10 in.	0.20 in.			
1 ●	109.8	100	14.4	109.6	99.8	18.5	13.6	12.9	0.020	10	0.2
2 ▲											
3 ■											

Material Description	USCS	Max. Dens. (pcf)	Optimum Moisture (%)	LL	PI
Mottled Orange to Gray, SILT WITH SAND	ML	109.8	14.9	NP	NP

Project No: WM13-174g

Project: P984 Regimental Headquarters & P985 Bachelor Enlisted Quarters

Location: CBR-1 - See Attached Boring Location Plan

Sample Number: CBR-1 **Depth:** 1-2 Ft.

Date: 12/2/2013

Test Description/Remarks:

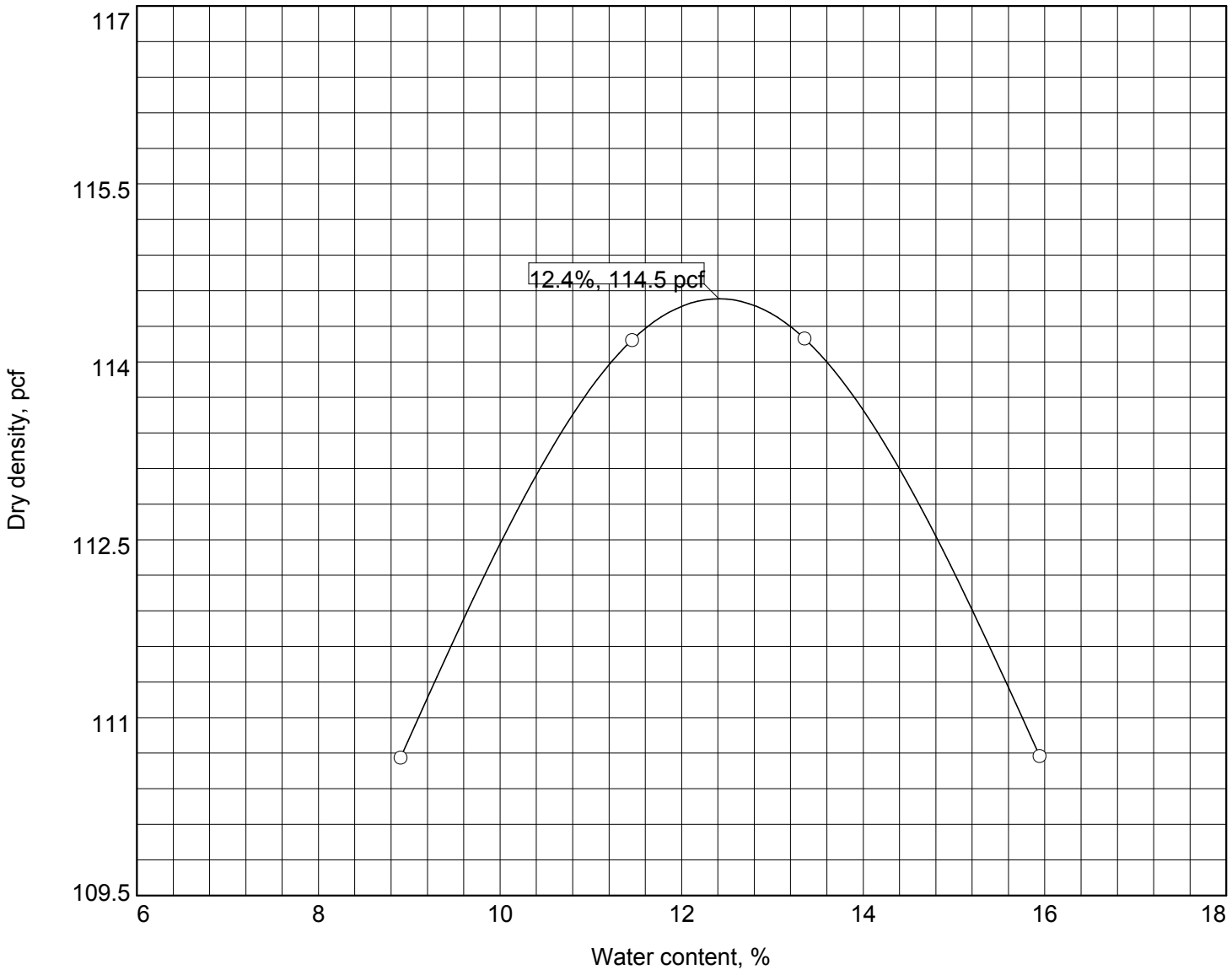
CBR-1
Sample Obtained: 12/2/2013
Resiliency Factor = 2.0

BEARING RATIO TEST REPORT

GET Solutions, Inc.

Figure 1a

MOISTURE DENSITY RELATIONSHIP (PROCTOR CURVE)



Test specification: ASTM D 698-07 Method A Standard

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > #4	% < No.200
	USCS	AASHTO						
1-2 Ft.	SM	A-4(0)	15	Estimated 2.5	NP	NP	0.0	45.3

TEST RESULTS

Maximum dry density = 114.5 pcf

Optimum moisture = 12.4 %

MATERIAL DESCRIPTION

Mottled Orange to Gray, fine, SILTY SAND

Project No. WM13-174g **Client:** The Walsh Group

Project: P984 Regimental Headquarters & P985 Bachelor Enlisted Quarters

○ **Loc.:** CBR-2 - See Attached Boring Location Plan **Sample No.:** CBR-2

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Williamsburg, VA

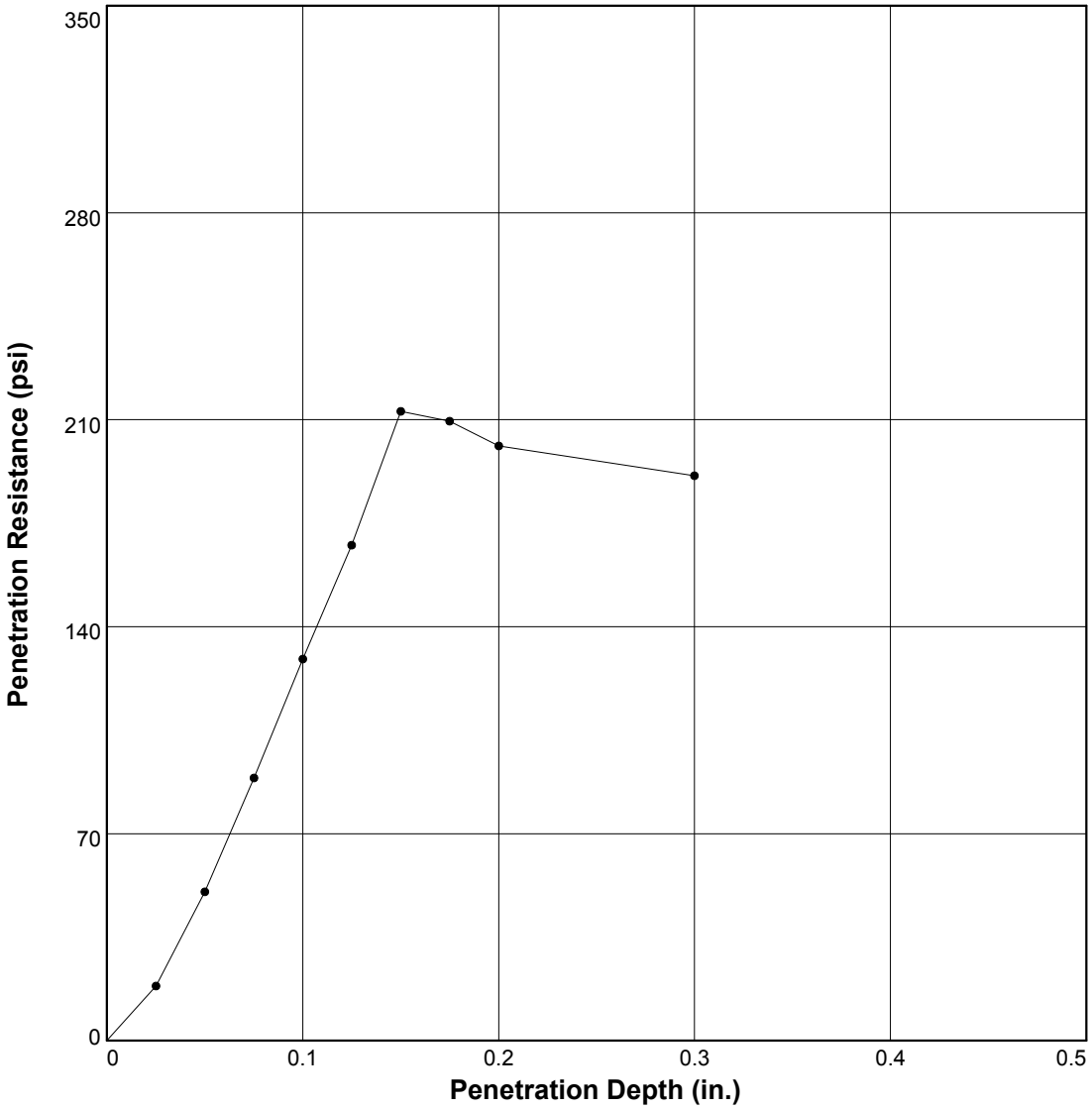
Remarks:

CBR-2
Sample Obtained: 12/2/2013

Figure 2

Tested By: T.Sabbah **Checked By:** J.Robinson

BEARING RATIO TEST REPORT
ASTM D 1883-07



	Molded			Soaked			CBR (%)		Linearity Correction (in.)	Surcharge (lbs.)	Max. Swell (%)
	Density (pcf)	Percent of Max. Dens.	Moisture (%)	Density (pcf)	Percent of Max. Dens.	Moisture (%)	0.10 in.	0.20 in.			
1 ●	114.5	100	12.4	114.5	100	15.1	15.8	13.3	0.018	10	0
2 ▲											
3 ■											

Material Description	USCS	Max. Dens. (pcf)	Optimum Moisture (%)	LL	PI
Mottled Orange to Gray, fine, SILTY SAND	SM	114.5	12.4	NP	NP

Project No: WM13-174g

Project: P984 Regimental Headquarters & P985 Bachelor Enlisted Quarters

Location: CBR-2 - See Attached Boring Location Plan

Sample Number: CBR-2 **Depth:** 1-2 Ft.

Date: 12/2/2013

Test Description/Remarks:

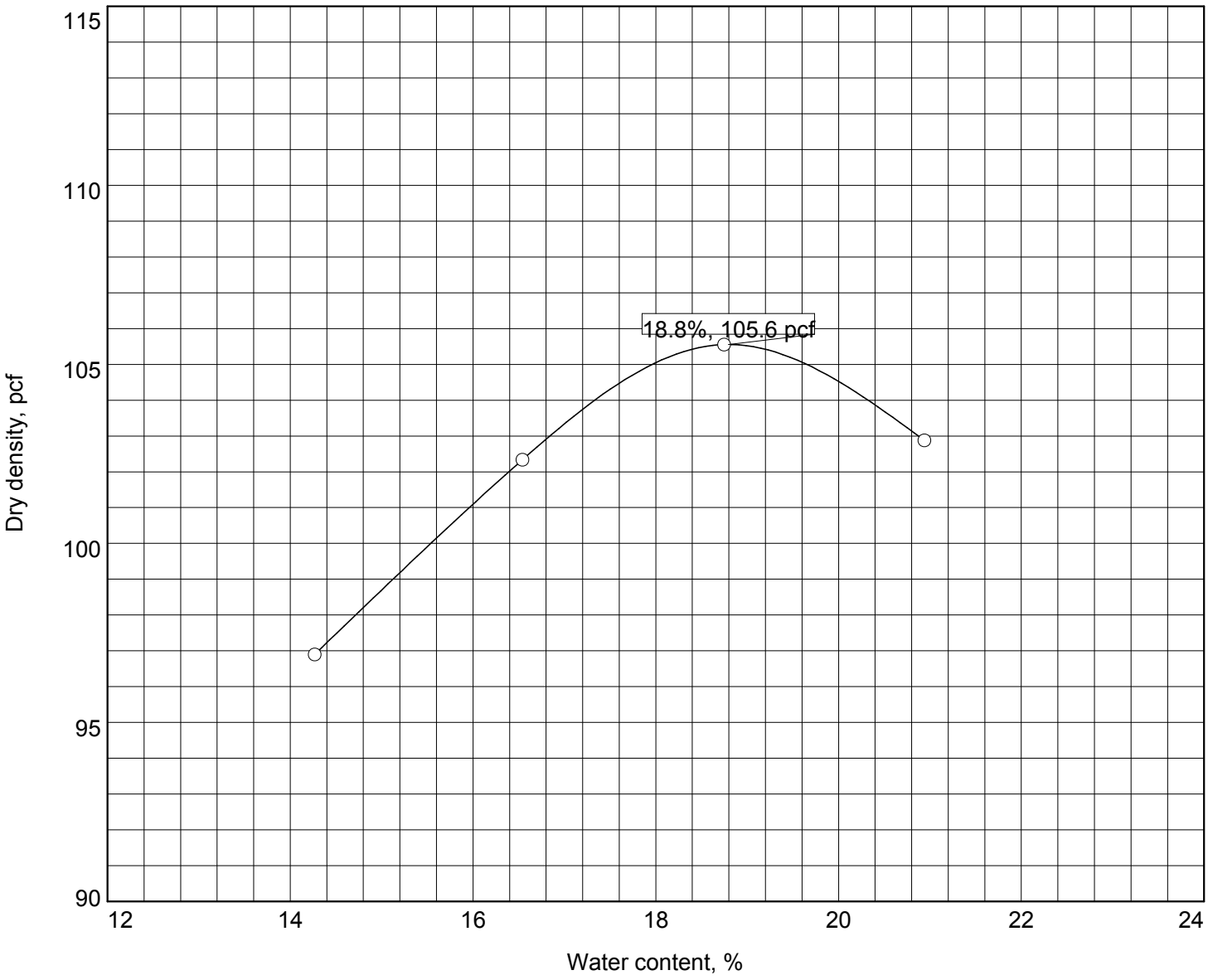
CBR-2
Sample Obtained: 12/2/2013
Resiliency Factor = 2.5

BEARING RATIO TEST REPORT

GET Solutions, Inc.

Figure 2a

MOISTURE DENSITY RELATIONSHIP (PROCTOR CURVE)



Test specification: ASTM D 698-07 Method A Standard

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > #4	% < No.200
	USCS	AASHTO						
1-2 Ft.	CL	A-6(9)	21	Estimated 2.8	33	16	0.0	70.8

TEST RESULTS

Maximum dry density = 105.6 pcf

Optimum moisture = 18.8 %

MATERIAL DESCRIPTION

Mottled Orange to Gray, LEAN CLAY WITH SAND

Project No. WM13-174g **Client:** The Walsh Group

Project: P984 Regimental Headquarters & P985 Bachelor Enlisted Quarters

○ **Loc.:** CBR-3 - See Attached Boring Location Plan **Sample No.:** CBR-3

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Remarks:

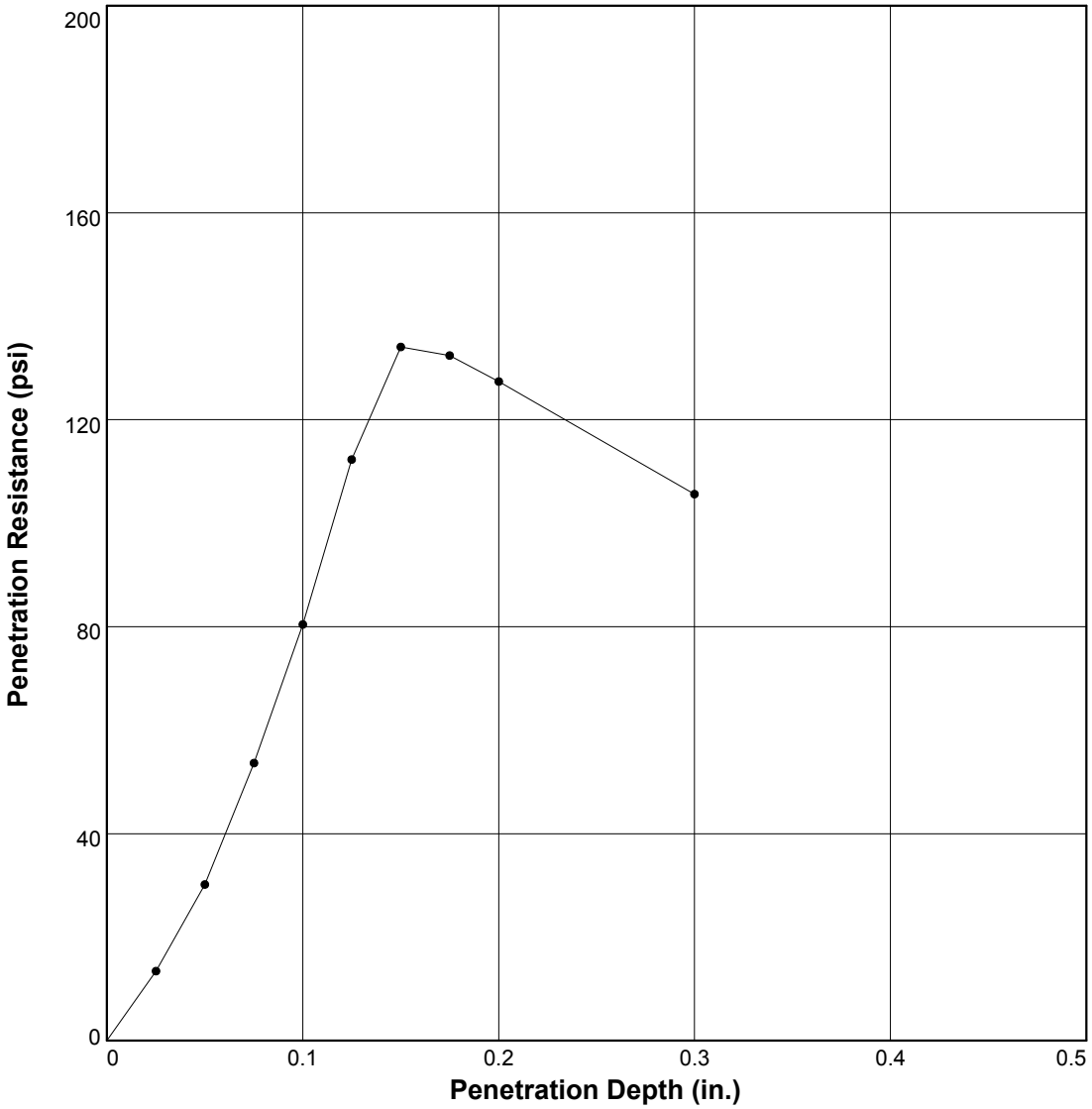
CBR-3

Sample Obtained: 12/2/2013

Figure 3

Tested By: T.Sabbah **Checked By:** J.Robinson

BEARING RATIO TEST REPORT
ASTM D 1883-07



	Molded			Soaked			CBR (%)		Linearity Correction (in.)	Surcharge (lbs.)	Max. Swell (%)
	Density (pcf)	Percent of Max. Dens.	Moisture (%)	Density (pcf)	Percent of Max. Dens.	Moisture (%)	0.10 in.	0.20 in.			
1 ○	105.6	100	19.3	103.8	98.3	22.4	11.9	8.0	0.033	10	1.7
2 △											
3 □											

Material Description	USCS	Max. Dens. (pcf)	Optimum Moisture (%)	LL	PI
Mottled Orange to Gray, LEAN CLAY WITH SAND	CL	105.6	18.8	33	16

Project No: WM13-174g

Project: P984 Regimental Headquarters & P985 Bachelor Enlisted Quarters

Location: CBR-3 - See Attached Boring Location Plan

Sample Number: CBR-3 **Depth:** 1-2 Ft.

Date: 12/2/2013

Test Description/Remarks:

CBR-3
Sample Obtained: 12/2/2013
Resiliency Factor = 2.0

BEARING RATIO TEST REPORT

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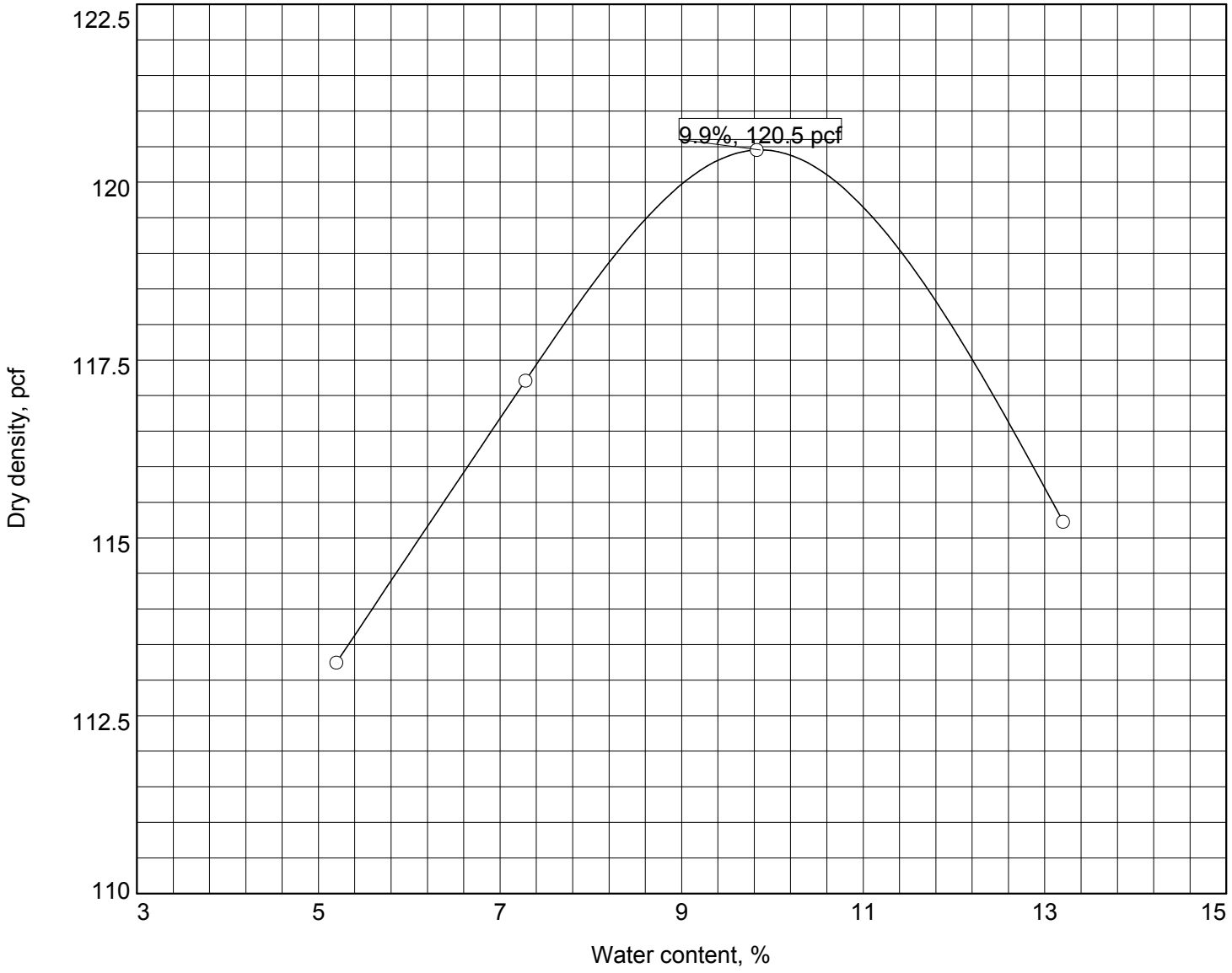
Figure 3a

MOISTURE DENSITY RELATIONSHIP (PROCTOR CURVE)



Test specification: ASTM D 698-07 Method A Standard

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > #4	% < No.200
	USCS	AASHTO						
1-2 Ft.	ML	A-4(0)	14	Estimated 2.7	NP	NP	0.0	58

TEST RESULTS

Maximum dry density = 120.5 pcf

Optimum moisture = 9.9 %

MATERIAL DESCRIPTION

Mottled Orange to Gray, SANDY SILT

Project No. WM13-174g **Client:** The Walsh Group

Project: P984 Regimental Headquarters & P985 Bachelor Enlisted Quarters

○ **Loc.:** CBR-4 - See Attached Boring Location Plan **Sample No.:** CBR-4

GET Solutions, Inc.

Williamsburg, VA

Remarks:

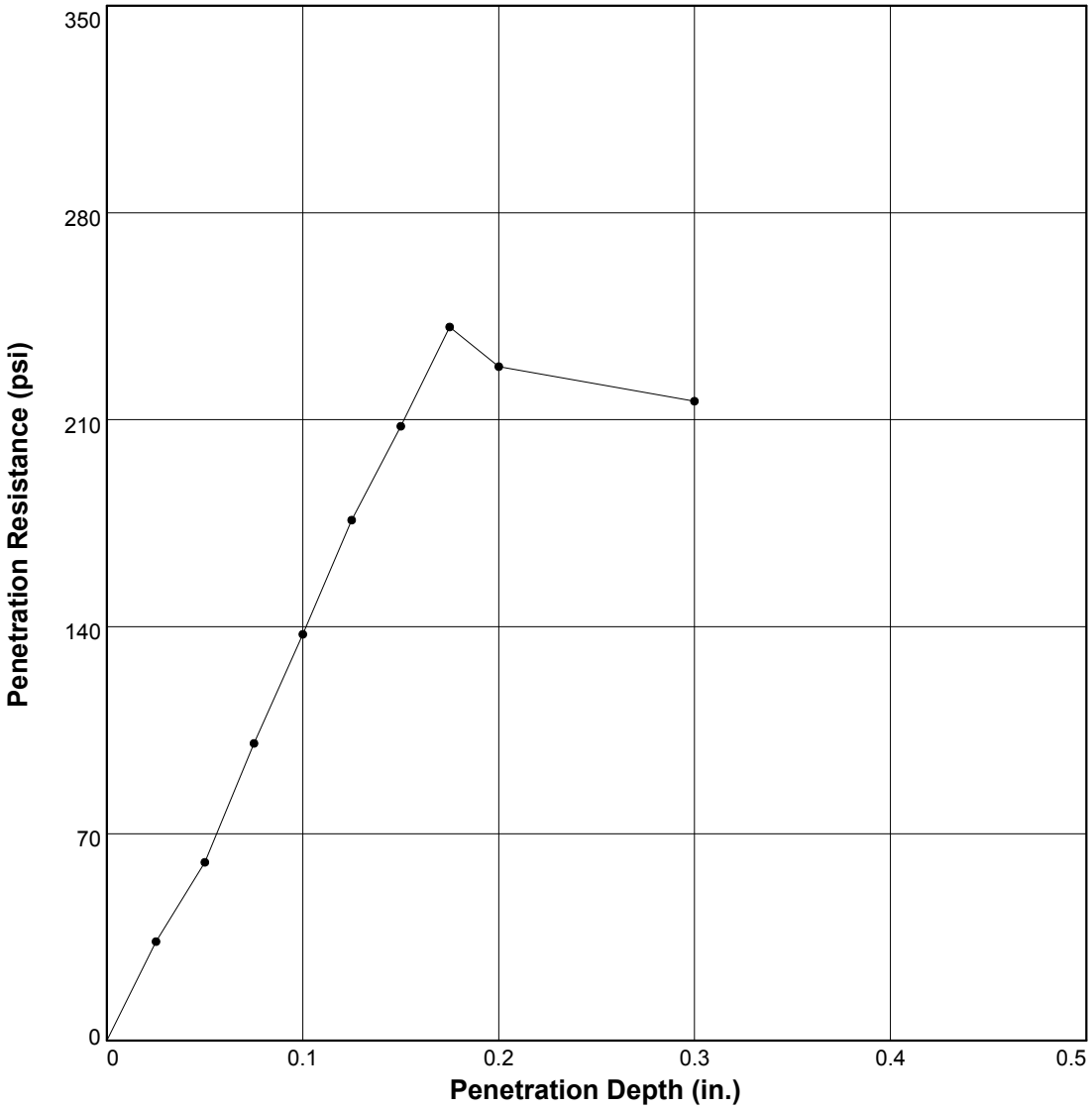
CBR-4

Sample Obtained: 12/2/2013

Figure 4

Tested By: T.Sabbah **Checked By:** J.Robinson

BEARING RATIO TEST REPORT
ASTM D 1883-07



	Molded			Soaked			CBR (%)		Linearity Correction (in.)	Surcharge (lbs.)	Max. Swell (%)
	Density (pcf)	Percent of Max. Dens.	Moisture (%)	Density (pcf)	Percent of Max. Dens.	Moisture (%)	0.10 in.	0.20 in.			
1 ○	120.5	100	9.4	120.3	99.8	12.9	15.7	15.1	0.013	10	0.2
2 △											
3 □											

Material Description	USCS	Max. Dens. (pcf)	Optimum Moisture (%)	LL	PI
Mottled Orange to Gray, SANDY SILT	ML	120.5	9.9	NP	NP

Project No: WM13-174g

Project: P984 Regimental Headquarters & P985 Bachelor Enlisted Quarters

Location: CBR-4 - See Attached Boring Location Plan

Sample Number: CBR-4 **Depth:** 1-2 Ft.

Date: 12/2/2013

Test Description/Remarks:

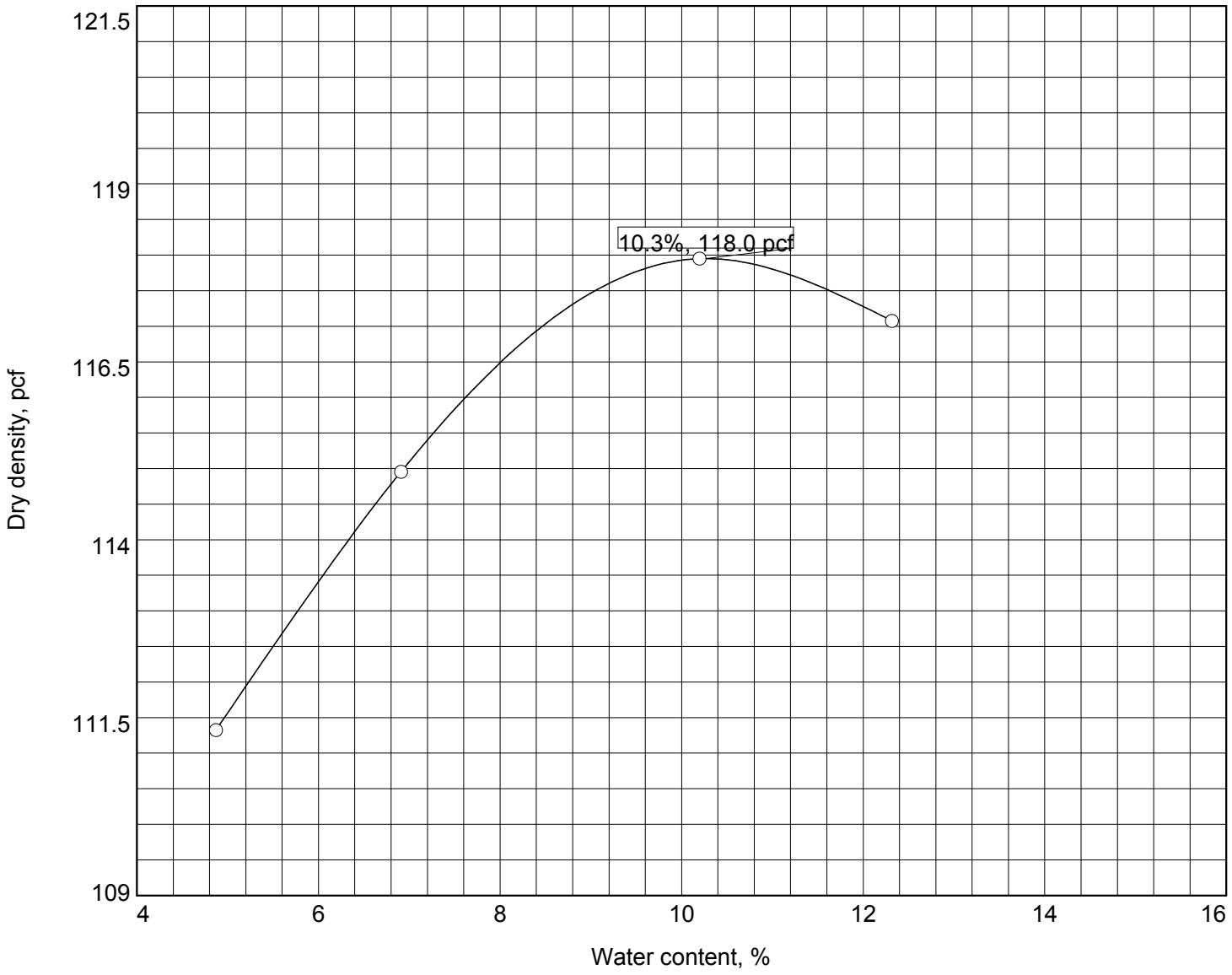
CBR-4
Sample Obtained: 12/2/2013
Resiliency Factor = 2.5

BEARING RATIO TEST REPORT

GET Solutions, Inc.

Figure 4a

MOISTURE DENSITY RELATIONSHIP (PROCTOR CURVE)



Test specification: ASTM D 698-07 Method A Standard

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > #4	% < No.200
	USCS	AASHTO						
1-2 Ft.	ML	A-4(0)	15	Estimated 2.7	NP	NP	0.0	53.4

TEST RESULTS

Maximum dry density = 118.0 pcf

Optimum moisture = 10.3 %

MATERIAL DESCRIPTION

Mottled Orange to Gray, SANDY SILT

Project No. WM13-174g **Client:** The Walsh Group

Project: P984 Regimental Headquarters & P985 Bachelor Enlisted Quarters

○ **Loc.:** CBR-5 - See Attached Boring Location Plan **Sample No.:** CBR-5

GET Solutions, Inc.

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Remarks:

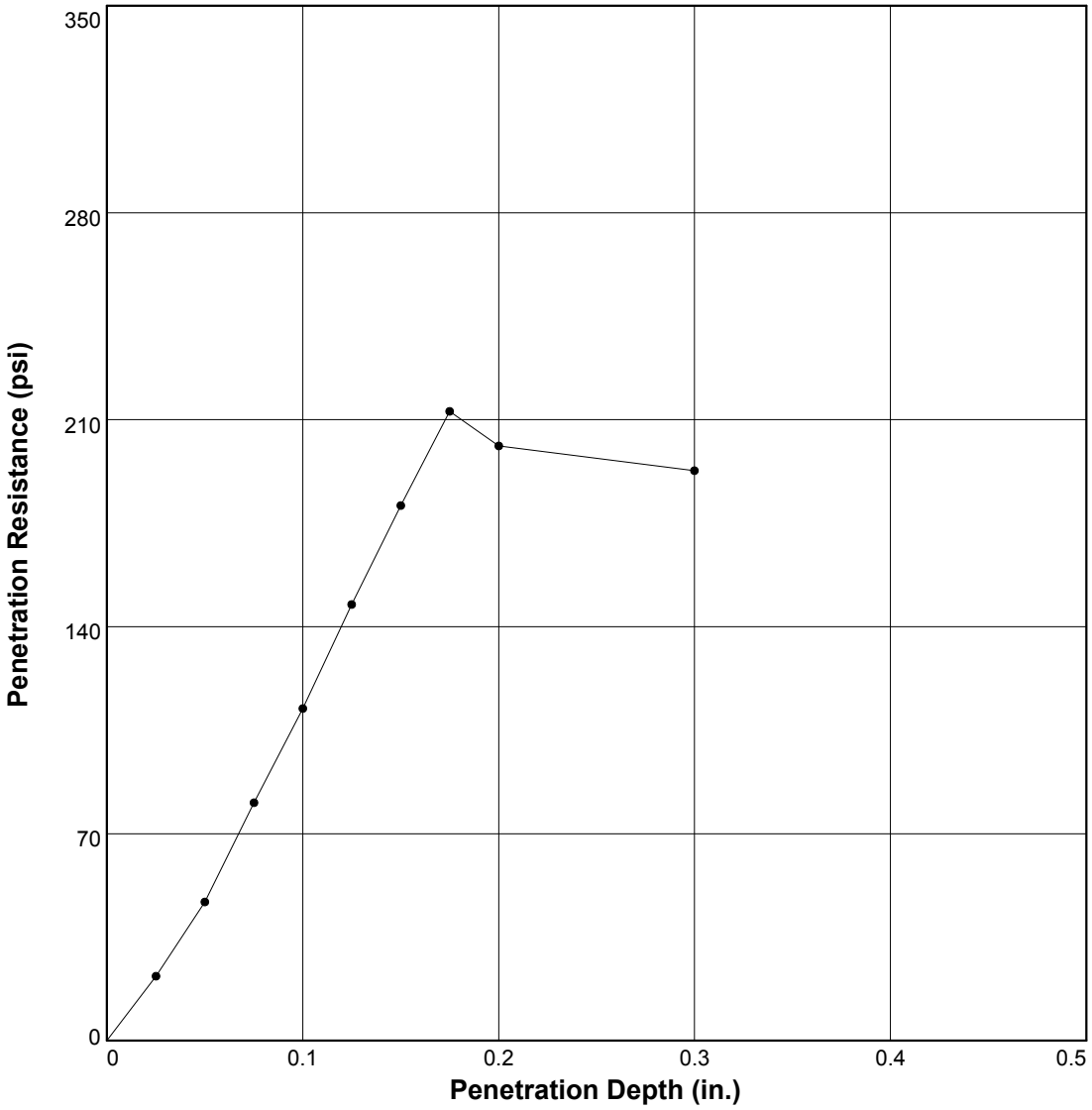
CBR-5

Sample Obtained: 12/2/2013

Figure 5

Tested By: T.Sabbah **Checked By:** J.Robinson

BEARING RATIO TEST REPORT
ASTM D 1883-07



	Molded			Soaked			CBR (%)		Linearity Correction (in.)	Surcharge (lbs.)	Max. Swell (%)
	Density (pcf)	Percent of Max. Dens.	Moisture (%)	Density (pcf)	Percent of Max. Dens.	Moisture (%)	0.10 in.	0.20 in.			
1 ○	118.0	100	9.8	118.0	100	13.6	13.5	13.3	0.016	10	0
2 △											
3 □											

Material Description	USCS	Max. Dens. (pcf)	Optimum Moisture (%)	LL	PI
Mottled Orange to Gray, SANDY SILT	ML	118.0	10.3	NP	NP

Project No: WM13-174g

Project: P984 Regimental Headquarters & P985 Bachelor Enlisted Quarters

Location: CBR-5 - See Attached Boring Location Plan

Sample Number: CBR-5 **Depth:** 1-2 Ft.

Date: 12/2/2013

Test Description/Remarks:

CBR-5
Sample Obtained: 12/2/2013
Resiliency Factor = 2.5

BEARING RATIO TEST REPORT

GET Solutions, Inc.

Figure 5a

APPENDIX VI

INFILTRATION TEST RESULTS

GET Solutions, Inc.	SATURATED HYDRAULIC CONDUCTIVITY WORKSHEET	Sheet No.: 3 of 5

Project Name.:	P984 HQ & P985 BEQ	**Parcel…….:**	NWS, Yorktown, Virginia	**Terminology and Solution**	
Boring No…..:	BMP-3	**Date……..:**	12-5-13	Ksat :	Saturated hydraulic conductivity
Investigators.:	J. Wagner	**File Name……..:**	WM13-174G	Q:	Steady-state rate of water flow into the soil
Boring Depth.:	10'	**WCU Base. Ht. h:**	15.0 **cm**	H:	Constant height of water in borehole
Boring Dia…..:	8.3 **cm**	**WCU Susp. Ht. S:**	0.0 **cm**	r:	Radius of cylindrical borehole
Boring Rad. (r):	4.15 **cm**	**Const. Wtr. Ht. H:**	15.0 **cm**	Ksat = Q[sinh-1(H/r) - $(r^2/H^2+1)^{.5}$ + r/H] / ($2piH^2$) [Glover, R. E.]	

VOLUME (ml)	Volume Out (ml) [a]	TIME (hr:min:sec a/p)	Elapsed Time (hr:min:sec)	Elapsed Time (min) [b]	Flow Rate Q (ml/min) [a/b]	Ksat Equivalent Values (cm/min)	(cm/sec)	(cm/day)	(in/hr)	(ft/day)
170		11:05:00 AM								
160	10	11:07:01 AM	0:02:01	2.02	4.96	0.004	7.22E-05	6.2	0.102	0.20
150	10	11:08:59 AM	0:01:58	1.97	5.08	0.004	7.41E-05	6.4	0.105	0.21
140	10	11:11:01 AM	0:02:02	2.03	4.92	0.004	7.17E-05	6.2	0.102	0.20
130	10	11:13:01 AM	0:02:00	2.00	5.00	0.004	7.28E-05	6.3	0.103	0.21
120	10	11:15:00 AM	0:01:59	1.98	5.04	0.004	7.35E-05	6.3	0.104	0.21
110	10	11:17:00 AM	0:02:00	2.00	5.00	0.004	7.28E-05	6.3	0.103	0.21
100	10	11:19:04 AM	0:02:04	2.07	4.84	0.004	7.05E-05	6.1	0.100	0.20
90	10	11:21:24 AM	0:02:20	2.33	4.29	0.004	6.24E-05	5.4	0.088	0.18
80	10	11:23:26 AM	0:02:02	2.03	4.92	0.004	7.17E-05	6.2	0.102	0.20
70	10	11:25:27 AM	0:02:01	2.02	4.96	0.004	7.22E-05	6.2	0.102	0.20
60	10	11:27:29 AM	0:02:02	2.03	4.92	0.004	7.17E-05	6.2	0.102	0.20
50	10	11:29:42 AM	0:02:13	2.22	4.51	0.004	6.57E-05	5.7	0.093	0.19
40	10	11:31:59 AM	0:02:17	2.28	4.38	0.004	6.38E-05	5.5	0.090	0.18
30	10	11:34:25 AM	0:02:26	2.43	4.11	0.004	5.99E-05	5.2	0.085	0.17
20	10	11:36:43 AM	0:02:18	2.30	4.35	0.004	6.33E-05	5.5	0.090	0.18
10	10	11:38:54 AM	0:02:11	2.18	4.58	0.004	6.67E-05	5.8	0.095	0.19
0	10	11:40:59 AM	0:02:05	2.08	4.80	0.004	6.99E-05	6.0	0.099	0.20
Natural Moisture: 25		**Init. Satur.Time:** 11:00:00 AM		**ESTIMATED FIELD Ksat……..:**		0.004	6.80E-05	**5.9**	0.096	0.19
Texture/Classif: SC		**Consistency:** Medium Dense		**Water Temp. BH:**		**Notes:** Ksat Class = Moderately Low				
Structure/Fabric: N/A		**Water Tbl. Dpth:** Not Encountered		**Soil Temp:**						

GET Solutions, Inc.	SATURATED HYDRAULIC CONDUCTIVITY WORKSHEET	Sheet No.: 4 of 5

Project Name.:	P984 HQ & P985 BEQ	**Parcel……..:**	NWS, Yorktown, Virginia	**Terminology and Solution**	
Boring No…...:	BMP-4	**Date……..:**	12-5-13	Ksat :	Saturated hydraulic conductivity
Investigators.:	J. Wagner	**File Name……..:**	WM13-174G	Q:	Steady-state rate of water flow into the soil
Boring Depth.:	10'	**WCU Base. Ht. h:**	15.0 **cm**	H:	Constant height of water in borehole
Boring Dia…..:	8.3 **cm**	**WCU Susp. Ht. S:**	0.0 **cm**	r:	Radius of cylindrical borehole
Boring Rad. (r):	4.15 **cm**	**Const. Wtr. Ht. H:**	15.0 **cm**	Ksat = Q[sinh-1(H/r) - $(r^2/H^2+1)^{.5}$ + r/H] / ($2piH^2$) [Glover, R. E.]	

VOLUME (ml)	Volume Out (ml) [a]	TIME (hr:min:sec a/p)	Elapsed Time (hr:min:sec)	Elapsed Time (min) [b]	Flow Rate Q (ml/min) [a/b]	Ksat Equivalent Values (cm/min)	(cm/sec)	(cm/day)	(in/hr)	(ft/day)
170		12:05:00 PM								
160	10	12:06:40 PM	0:01:40	1.67	6.00	0.005	8.74E-05	7.6	0.124	0.25
150	10	12:08:17 PM	0:01:37	1.62	6.19	0.005	9.01E-05	7.8	0.128	0.26
140	10	12:09:56 PM	0:01:39	1.65	6.06	0.005	8.83E-05	7.6	0.125	0.25
130	10	12:11:34 PM	0:01:38	1.63	6.12	0.005	8.92E-05	7.7	0.126	0.25
120	10	12:13:13 PM	0:01:39	1.65	6.06	0.005	8.83E-05	7.6	0.125	0.25
110	10	12:14:53 PM	0:01:40	1.67	6.00	0.005	8.74E-05	7.6	0.124	0.25
100	10	12:16:31 PM	0:01:38	1.63	6.12	0.005	8.92E-05	7.7	0.126	0.25
90	10	12:18:15 PM	0:01:44	1.73	5.77	0.005	8.41E-05	7.3	0.119	0.24
80	10	12:19:54 PM	0:01:39	1.65	6.06	0.005	8.83E-05	7.6	0.125	0.25
70	10	12:21:32 PM	0:01:38	1.63	6.12	0.005	8.92E-05	7.7	0.126	0.25
60	10	12:23:20 PM	0:01:48	1.80	5.56	0.005	8.09E-05	7.0	0.115	0.23
50	10	12:24:59 PM	0:01:39	1.65	6.06	0.005	8.83E-05	7.6	0.125	0.25
40	10	12:26:39 PM	0:01:40	1.67	6.00	0.005	8.74E-05	7.6	0.124	0.25
30	10	12:28:27 PM	0:01:48	1.80	5.56	0.005	8.09E-05	7.0	0.115	0.23
20	10	12:30:03 PM	0:01:36	1.60	6.25	0.005	9.11E-05	7.9	0.129	0.26
10	10	12:31:43 PM	0:01:40	1.67	6.00	0.005	8.74E-05	7.6	0.124	0.25
0	10	12:33:26 PM	0:01:43	1.72	5.83	0.005	8.49E-05	7.3	0.120	0.24

Natural Moisture: 22	**Init. Satur.Time:** 12:00:00 PM	**ESTIMATED FIELD Ksat……..:**	0.005	8.67E-05	**7.5**	0.123	0.25
Texture/Classif: SM	**Consistency:** Medium Dense	**Water Temp. BH:**	**Notes:** Ksat Class = Moderately Low				
Structure/Fabric: N/A	**Water Tbl. Dpth:** Not Encountered	**Soil Temp:**					

GET Solutions, Inc.	SATURATED HYDRAULIC CONDUCTIVITY WORKSHEET	Sheet No.: 5 of 5

Project Name.:	P984 HQ & P985 BEQ	**Parcel…….:**	NWS, Yorktown, Virginia	**Terminology and Solution**	
Boring No…..:	BMP-5	**Date……..:**	12-5-13	Ksat :	Saturated hydraulic conductivity
Investigators.:	J. Wagner	**File Name……..:**	WM13-174G	Q:	Steady-state rate of water flow into the soil
Boring Depth.:	10'	**WCU Base. Ht. h:**	15.0 **cm**	H:	Constant height of water in borehole
Boring Dia…..:	8.3 **cm**	**WCU Susp. Ht. S:**	0.0 **cm**	r:	Radius of cylindrical borehole
Boring Rad. (r):	4.15 **cm**	**Const. Wtr. Ht. H:**	15.0 **cm**	Ksat = Q[sinh-1(H/r) - $(r^2/H^2+1)^{.5}$ + r/H] / ($2piH^2$) [Glover, R. E.]	

VOLUME (ml)	Volume Out (ml) [a]	TIME (hr:min:sec a/p)	Elapsed Time (hr:min:sec)	Elapsed Time (min) [b]	Flow Rate Q (ml/min) [a/b]	Ksat Equivalent Values (cm/min)	(cm/sec)	(cm/day)	(in/hr)	(ft/day)
170		10:00:00 AM								
160	10	10:00:17 AM	0:00:17	0.28	35.29	0.031	5.14E-04	44.4	0.729	1.46
150	10	10:00:35 AM	0:00:18	0.30	33.33	0.029	4.86E-04	42.0	0.688	1.38
140	10	10:00:53 AM	0:00:18	0.30	33.33	0.029	4.86E-04	42.0	0.688	1.38
130	10	10:01:12 AM	0:00:19	0.32	31.58	0.028	4.60E-04	39.8	0.652	1.30
120	10	10:01:32 AM	0:00:20	0.33	30.00	0.026	4.37E-04	37.8	0.619	1.24
110	10	10:01:52 AM	0:00:20	0.33	30.00	0.026	4.37E-04	37.8	0.619	1.24
100	10	10:02:11 AM	0:00:19	0.32	31.58	0.028	4.60E-04	39.8	0.652	1.30
90	10	10:02:31 AM	0:00:20	0.33	30.00	0.026	4.37E-04	37.8	0.619	1.24
80	10	10:02:48 AM	0:00:17	0.28	35.29	0.031	5.14E-04	44.4	0.729	1.46
70	10	10:03:05 AM	0:00:17	0.28	35.29	0.031	5.14E-04	44.4	0.729	1.46
60	10	10:03:25 AM	0:00:20	0.33	30.00	0.026	4.37E-04	37.8	0.619	1.24
50	10	10:03:47 AM	0:00:22	0.37	27.27	0.024	3.97E-04	34.3	0.563	1.13
40	10	10:04:04 AM	0:00:17	0.28	35.29	0.031	5.14E-04	44.4	0.729	1.46
30	10	10:04:24 AM	0:00:20	0.33	30.00	0.026	4.37E-04	37.8	0.619	1.24
20	10	10:04:46 AM	0:00:22	0.37	27.27	0.024	3.97E-04	34.3	0.563	1.13
10	10	10:05:05 AM	0:00:19	0.32	31.58	0.028	4.60E-04	39.8	0.652	1.30
0	10	10:05:24 AM	0:00:19	0.32	31.58	0.028	4.60E-04	39.8	0.652	1.30
Natural Moisture: 16		**Init. Satur.Time:** 9:55:00 AM		**ESTIMATED FIELD Ksat……..:**		0.027	4.54E-04	**39.2**	0.644	1.29
Texture/Classif: SM		**Consistency:** Medium Dense		**Water Temp. BH:**		**Notes:** Ksat Class = Moderately High				
Structure/Fabric: N/A		**Water Tbl. Dpth:** Not Encountered		**Soil Temp:**						