GEOTECHNICAL INVESTIGATION
WEST POST ROAD SITE
WHITE PLAINS, NY

Grid Properties, Inc.
2309 Frederick Douglass Blvd.
New York, NY 10027

Mueser Rutledge Consulting Engineers
225 West 34th Street – 14 Penn Plaza
New York, NY 10122

March 13, 2015

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March 13, 2015

Grid Properties, Inc.
2309 Frederick Douglass Blvd.
New York, NY 10027

Attention: Mr. James Tuman

Re: Geotechnical Investigation
West Post Road Site
White Plains, NY
MRCE File 12316

Gentlemen:

In accordance with our proposal dated September 9, 2014, Mueser Rutledge Consulting Engineers (MRCE) has completed a geotechnical investigation at the West Post Road Site. The purpose of this report is to characterize subsurface conditions at the site for estimating foundation requirements. This report summarizes our field investigation and presents a summary of the results along with our interpretation and recommendations. An additional investigation may be needed once the development plans are close to final.

EXHIBITS

The following Exhibits are attached to illustrate our Report:

Drawing No. B-1	Boring and CPT Location Plan
Drawing No. B-2	Top of Bearing Stratum Contour Plan
Drawing No. GS-1	Geologic Section A-A
Drawing No. GS-2	Geologic Section B-B
Drawing No. GS-3	Geologic Section C-C
Drawing No. GS-R	Geotechnical Reference Standards
Drawing No. RC-1	Rock Core Classification Criteria
Appendix A	MRCE Boring Logs
Appendix B	CPT Data
Appendix C	Existing Monitoring Well Data

PROJECT DESCRIPTION

Grid Properties is planning to redevelop a site comprising approximately 4 acres along West Post Road in White Plains, New York. The site is bounded by West Post Road on the north, Maple Avenue on the south and Rathbun Avenue on the

west. The site stops short of South Lexington Avenue on the east. Current site grades range from Elev. +242 on the west end to Elev. +214 on the east.

The project will consist of five levels of retail, commercial, residential and parking structures. Proposed top of floor slab elevations range from Elev. +213 to Elev. +233. The planned building coverage area is 153,540 square ft.

We understand that the project vertical datum used on the architectural drawings is the City of White Plains Datum. According to our conversation on December 16, 2014 with Mr. Chris Robison of the City of White Plains City Public Works Department, the City of White Plains datum is approximately the same as the National Geodetic Vertical Datum of 1929 (NGVD 29), with maximum variation of 0.1 ft. White Plains does not have a requirement to use a specific vertical datum on plans. For consistency, all elevations in this report are referenced to City of White Plains Datum which is assumed equal to NGVD 29.

AVAILABLE INFORMATION

Grid Properties Inc. has provided the following:

1. *Topographic Survey of Property Situate in the City of White Plains, Westchester County, New York,* by Link Land Surveyors, dated December 20, 2002, Amended February 4, 2008.

2. Drawings entitled *Boulevard,* prepared by BLT Architects, dated March 2014.

3. Information in an e-mail dated October 15, 2012, regarding the likely presence of groundwater at the site at depths of 10 to 12 ft. below existing grades.

SUBSURFACE INVESTIGATIONS

Previous Investigations at the Site

Existing, functioning groundwater observation wells are present at the site from a previous investigation. We understand the previous investigation performed at the site also included geoprobes and borings. The data from that investigation was not provided to us.

2014 MRCE Investigation

The current subsurface investigation consists of 14 borings, three monitoring wells and 14 Cone Penetration Tests (CPTs). Locations of borings and CPTs are shown on Drawing No. B-1.

The borings were performed by Craig Geotechnical Drilling Co, Inc (Craig Drilling) of Mays Landing, New Jersey, from October 13 through October 17, 2014. All borings were continuously inspected by MRCE Resident Engineer, Mr. Geoffrey Smith who prepared field logs of all borings. The borings were made using truck-mounted drill rigs and rotary drilling techniques with casing and drilling mud to stabilize the boreholes. Boring depths ranged from 27 to 52 feet.

Continuous samples were taken in the upper 10 feet of each boring. Below 10 feet, soil samples

were generally taken at 5 foot intervals. Soil samples were obtained using a two-inch outside diameter, split-spoon sampler driven with a 140 pound hammer falling freely for 30 inches or an automatic hammer. The number of blows required to drive the sampler through each of the four six-inch increments was recorded. The sum of the blows for the second and third six-inch intervals is defined as the Standard Penetration Test (SPT) Resistance, or N-value. The N-value is an index of the in-situ density of the material and is reported in blows per foot (bpf). At locations where the sampler was unable to penetrate the full 24 inches due to dense soils or an obstruction, the sampler was driven until 100 blows were administered and the actual penetration of the sampler was measured and recorded. In that case, the sampler is said to encounter 'refusal'.

Bedrock was cored in five borings. Core runs were typically five foot long and used a double tube, N-series, diamond bit core barrel. Each core run was logged, including sketching the jointing patterns, measuring recovery lengths and calculating Rock Quality Designation (RQD). RQD is the sum of the lengths of core pieces of intact rock over four inches in length expressed as a percentage of the total core run. Fractures which occur as a result of the drilling operations or removal of the core samples are designated mechanical breaks and are not considered when calculating RQD.

Standpipe piezometer monitoring wells were installed in three borings, B-3P, B-8P and B-13P to supplement the existing wells. Installation logs of the piezometers are included with the boring logs in Appendix A. Water levels measured in the piezometers are reported on the logs and also shown on the appropriate geologic sections. The remaining borings were backfilled upon completion.

All soil and rock samples were delivered to the MRCE soil mechanics laboratory for verification of field classifications. Samples were removed from their containers and examined. Natural water contents were obtained for selected fine-grained samples. Field log descriptions were revised as needed. Individual sample descriptions are included in the typed logs in Appendix A. A summary of our geotechnical reference standards used for the boring logs and geologic sections is provided on Drawing No. GS-R.

The as-drilled boring locations were surveyed on October 24, 2014 by Dynamic Land Development Consultants under sub-contract to Craig Drilling and are shown on Drawing No. B-1.

On December 4, 2014, our engineer returned to the site to take groundwater measurements in both the 2014 wells and 6 previously installed wells.

After completion of the boring program, it was determined that additional information was needed to better define subsurface conditions at the site, specifically to better define areas of soft organic soils. Craig Drilling returned to the site on February 3 and 4, 2015 and performed 14 CPTs, ranging from 3.8 to 25.3 feet depth. MRCE Resident Engineer, Mr. Geoffrey Smith, observed the CPT work. CPT logs are included in Appendix B.

SUBSURFACE SOIL AND ROCK CONDITIONS

Our interpretation of the subsurface conditions at the site is illustrated on the geologic sections on Drawings Nos. GS-1 through GS-3. Boring information shown on the sections includes sample number and position, N-Value and Unified Soil Classification System (USCS) symbol for soil samples. For rock cores, core run number and position, percent recovery, and RQD are shown. The boring legend and explanation of the USCS symbols area shown on Drawing No. GS-R. Rock core classification criteria are described on Drawing No. RC-1.

CPT data shown on the geologic sections is our interpretation of the stratigraphy at each CPT location. Correlations based on cone tip resistance, side friction and pore water pressure variations were used to identify soil type and other parameters. CPT results at locations close to borings were used to calibrate the CPT output. Based on those results, stratigraphy was assigned at remaining CPT locations.

Sensitive, fine grained and organic soils encountered by the CPTs were assigned to Stratum O. Silty sand and sandy silt soils with N-values less 10 bpf were typically assigned to Stratum S. Sandy soils were assigned to Stratum T or Stratum DR. N-value correlations were used to assign top of bearing stratum at CPT locations. The top of bearing stratum was typically located at the depth where N-values exceeded 10 bpf.

The soil and rock strata encountered at the site are described below, in sequence of increasing depth below ground surface. The soil strata are classified in accordance with the Unified Soil Classification System. Environmental contamination / characteristics of the soil and groundwater were not within the scope of our investigation.

Stratum F – Fill: The uppermost material encountered at the site is fill. Stratum F typically consists of loose to medium compact brown fine to coarse sand, trace to some silt, gravel, trace vegetation, asphalt, miscellaneous debris. The thickness of Stratum F ranges from about 2 to 10 feet where encountered by borings, but is typically 5 feet or less. The CPTs showed similar thickness of fill.

N-Values in Stratum F range from 5 to 92 blows per foot (bpf). Typical values are less than 30 bpf, with an average of about 14 bpf. Higher values are attributed to obstructions such as asphalt or other debris.

CPT- 7 and CPT-8 encountered shallow obstructions in the fill. CPT-8 was offset and completed at an alternate location. CPT-7 was stopped at 3.8 feet. Stratum F also may contain remnant foundations from previous, believed to be small structures. The locations of those remnant foundations are not defined in this report.

Stratum O – Organic Silty Clay: Stratum O was encountered below Stratum F in 7 borings and 9 CPTs. It generally consists of soft brown organic silty clay, some peat, trace to some fine to coarse sand, trace gravel, or loose gray organic silty fine to medium sand, trace vegetation, coarse sand.

The thickness of Stratum O ranges between 3 and 6 feet where encountered by borings and CPTs.

N-Values within Stratum O range from 2 to 15 bpf in the sand samples and range from 2 to 11 bpf in the silty clay samples. Natural water content of the samples tested in the laboratory range from 22 to 43 percent in the sand samples, range from 41 to 64 percent for the silty clay samples.

Stratum S – Sand: Stratum S was encountered below Strata F or O. It consists of loose to medium compact brown or gray fine to coarse sand, some silt, trace to some gravel. In some locations, Stratum S also includes layers of clayey fine to medium sand, trace gravel. Stratum S was encountered in all borings and CPTs, except for Boring B-10, and is 2.5 ft. to 15 ft. thick.

The degree of compactness of Stratum S varies across the site. N-Values for Stratum S samples in Borings B-1 through B-3P (west side of site) range from 9 bpf to 37 bpf, with an average of 23 bpf. N-Values for Stratum S samples in Borings B-4 through B-14 range from 1 bpf to 27 bpf, with an average of 10 bpf.

Stratum T – Till: Stratum T was encountered below Stratum S and consists of medium compact to very compact gray fine to medium sand, some gravel to gravelly, trace to some silt, trace coarse sand. Thickness of Stratum T ranges from 10 to 35.5 feet where encountered by borings. CPTs generally penetrated about 5 to 10 ft. into Stratum T before encountering refusal.

N-Values in Stratum T range from 4 bpf to refusal. About half of the samples have N-Values of over 100 bpf or encountered refusal. Several low N-Values were recorded at the top the stratum and could be wash or disturbed samples.

Some borings drilled through one or more boulders in this stratum and hard drilling was noted on some boring logs during drilling through Stratum T, which typically indicates the presence of coarse gravel, cobbles, and/or boulders.

Stratum DR – Decomposed Rock: A stratum of decomposed rock is present above the bedrock surface. It consists of very compact white, black, brown, orange, gray or blue fine to coarse sand, trace to some silt, trace rock fragments.

N-Values in Stratum DR range from 17 bpf to refusal. Most samples have N-values in excess of 50 bpf or encountered refusal.

Natural water content of the samples that were tested in the laboratory range from 7 to 26 percent, with an average of 14.5 percent.

Stratum R – Bedrock: Bedrock was encountered in five of the borings between Elev +182 and +206. Other borings went as deep as Elev. +163 without encountering bedrock. Rock cores recovered in the borings consist of medium hard unweathered to moderately weathered gray gneiss or schistose gneiss, closely jointed to jointed, with weathered, iron stained joints. Rock core recoveries ranged from 91 to 100 percent. RQD ranged from 65 to 87 percent. Rock core sketches are included in the boring logs.

GROUNDWATER CONDITIONS

Three groundwater monitoring wells were installed at the site during the 2014 boring investigation. Groundwater levels measured in the wells range from Elev. +208.5 on the east to Elev. +230.5 on the west, corresponding to depths of 2 to 10 ft. below grade. Groundwater levels measured in the piezometers are shown graphically on Drawings GS-1 to GS-3.

Groundwater levels measured in the 6 existing wells at the site were approximately Elev. +228 at the northwest corner of the site, Elev. +214 to +220 in the center of the site and Elev. +212 at the southeast corner of the site. Ground surface elevations at each existing well location were not provided to us, we estimated the elevation at each well based on the topographic survey of the site. Data collected from existing wells is included in Appendix C.

In general, the groundwater surface slopes downward to the east, following the general trend of ground surface.

RECOMMENDATIONS

Foundation Design

Subsurface stratigraphy at the site includes a shallow water table, miscellaneous fill, compressible organic soils and loose to medium compact sands over more compact till and decomposed rock. The shallow soils are subject to compression and liquefaction and are not suitable for support of the proposed structures. Foundations should be designed to bear in the more compact portions of Stratum S, Stratum T or Stratum DR. Drawing No. B-2 shows the top of the bearing stratum at each boring and CPT location and interpolated contours of the bearing stratum elevation across the site. In most areas, the bearing stratum starts at the top of Stratum T. In zones where Stratum S is medium compact or better, it is included in the bearing stratum.

The lowest top of slab elevations of the proposed structures are shown on the plans and geologic sections. Depth from top of slab elevation to bearing stratum varies from 0 to 20 feet. In most areas of the site it is 10 feet or greater. Groundwater is within several feet of the top of slab elevations over most of the site.

Shallow foundations are generally not recommended because in order to reach the bearing stratum, local excavations, typically 10 feet to 20 feet deep, would be required over most of the site. Dewatering of those excavations would be necessary to construct footings.

Without some type of ground improvement program, we recommend that the structure be supported on pile foundations. Based on the available information on adjacent structures and utilities, it appears that driven pile foundations would be feasible. Types of driven piles that could be used include timber, steel pipe or steel H-piles. Column loads have not been provided to us. The selection of pile type and its capacity can be determined after computing the loads and required design capacity with an appropriate factor of safety.

Due to the miscellaneous nature of the fill and remnant foundations, some difficulty could be encountered in installing piles due to obstructions in Stratum F, but pile installation is acheivable. There is also the possibility of encountering cobbles or boulders in Stratum T. Relatively shallow obstructions may be overcome by drilling, augering or spudding during pile

installation. Deeper obstructions may limit driven pile penetration, in which case the pile capacity may need to be downgraded and additional piles driven to make up the required capacity.

Ground improvement should be considered to treat or bypass the weak shallow soils at the site and allow spread foundations to be used. Several ground improvement options are available including: geopiers, grouted impact piers and stone columns. Ground improvement elements should extend at least to the top of the recommended bearing stratum.

Seismic Design

Soils that are below the groundwater level, sufficiently free of fine grained binder, and loose in consistency are susceptible to liquefaction during an earthquake. The majority of the Stratum S soils in the middle and east portions of the site and portions of the fill are susceptible to liquefaction. The effect of liquefaction would be a reduction of soil strength and post-liquefaction settlement of the surface soils, and any foundations supported on these soils.

Measures to mitigate the loss of soil strength due to liquefaction during an earthquake event include designing foundations to bear below the potentially liquefiable soils. Foundation elements should be designed with liquefied soil properties (within the potentially liquefiable zone) and designed to accommodate potential drag loads induced by post-liquefaction settlement.

The New York State Building Code assigns the Seismic Site Class F to any soil profile that contains liquefiable soils. For Site Class F sites, the code requires a site specific seismic study to determine seismic design parameters.

Anticipated Settlements

The organic soils in Stratum O are highly compressible. If site grades are raised above current grades, consolidation of the organics will cause settlement of slabs-on-grade, pavements and utilities relative to the pile supported structures, which will undergo negligible settlement. The magnitude of settlement depends on the magnitude of the new loading that will be imposed on the soil, and the current state of stress within the organic deposits. Estimates of settlement can be computed once the proposed site grading plan is prepared. Pile capacities will also be reduced due to downdrag caused by consolidation settlement of the organic soils in Stratum O in areas of settlement.

In addition to any new loads from raising grades, if dewatering is required to lower groundwater levels during construction, it will cause an increase in effective stress on the organic soil and potential settlement of nearby ground surface and utilities. The magnitude of settlement depends on the depth of water lowering and the distance from the dewatered area.

Dewatering

Groundwater was observed in the monitoring wells between 2 and 12 feet below ground surface. In most areas of the site, the groundwater is within several feet of the proposed top of slab elevation.

Assuming a pile cap thickness of 3 feet and a base floor slab thickness of about 1 foot above the pile cap, the top of the base slab would need to be about 4 feet above the groundwater table in order to avoid any significant construction dewatering.

We recommend a more detailed study of groundwater levels prior to setting the final top of slab elevations for the proposed structures. The elevations of the existing wells on site should be established either by the installation records or by survey. We could then perform a series of readings in the wells and if needed, install new wells in targeted areas where the proposed slab elevations are within several feet of the interpolated groundwater levels.

If the pile caps must be installed below groundwater, a localized ”drivepoint” wellpoint system could be considered.

Protection of Adjacent Structures

The proposed buildings on the site are adjacent to existing roads and buildings. Pile installation, foundation excavation and dewatering for the proposed development may affect nearby structures, roads and utilities. Settlement and cracking may result from ground vibrations due to pile driving, lateral movements due to excavations and settlement due to dewatering.

An investigation would be necessary prior to final design to determine the impact on nearby structures and utilities from dewatering, excavation and pile driving. This would require obtaining information on the types and depths of foundations and utilities that exist near the site.

A preconstruction survey should be performed to assess and document the condition of all roads, utilities, structures in the vicinity of the proposed construction. A program of monitoring of vibrations and settlement of nearby structures during excavation and pile driving is recommended.

Very truly yours,

MUESER RUTLEDGE CONSULTING ENGINEERS

By:_____
David R. Good, PE

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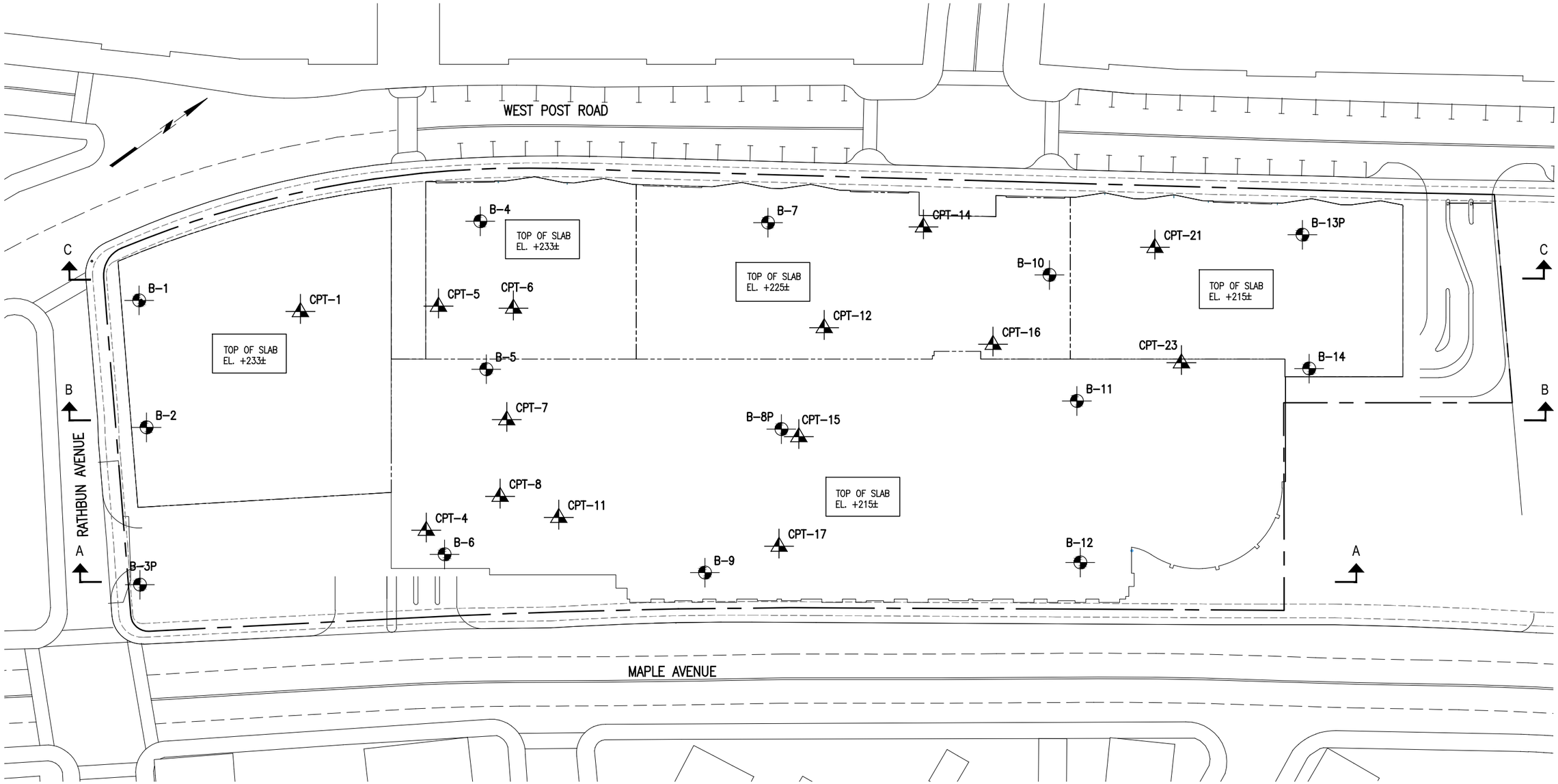
EXHIBITS



P L A N

GRAPHIC SCALE

30' 20' 10' 0 30' 60'

NOTES:

1. BASE PLAN TAKEN FROM A DRAWING PROVIDED BY GRID PROPERTIES, INC.
2. AS-DRILLED BORING LOCATIONS AND ELEVATIONS WERE SURVEYED BY DYNAMIC SURVEY, LLC. AS DRILLED CPT LOCATIONS WERE DETERMINED BY MRCE USING A GPS UNIT. CPT ELEVATIONS WERE ESTIMATED FROM THE TOPOGRAPHIC SURVEY PREPARED BY LINK LAND SURVEYORS.
3. BORINGS WERE MADE BY CRAIG DRILLING COMPANIES, INC, OF MAYS LANDING, NJ AND INSPECTED BY MUESER RUTLEDGE CONSULTING ENGINEERS (MRCE)BETWEEN OCTOBER 13 AND OCTOBER 17, 2014.
4. CONE PENETRATION TESTS (CPT) WERE MADE BY CRAIG DRILLING COMPANIES, INC. OF MAYS LANDING, NJ AND INSPECTED BY MUESER RUTLEDGE CONSULTING ENGINEERS ON FEBRUARY 3 AND 4, 2015.
5. FOR GEOLOGIC SECTIONS A-A THROUGH C-C REFER TO DRAWING NOS. GS-1 THROUGH GS-3.
6. CPT NOS. 2, 3, 7, 9, 10, 13, 18, 19, 20, 22 WERE NOT PERFORMED DUE TO SNOW AND OTHER OBSTRUCTIONS AT THE SITE.
7. CPT-7 ENCOUNTERED AN OBSTRUCTION AT 3.8 FT DEPTH AND WAS ABANDONED.

LEGEND:

B-8P – BORING MADE BY CRAIG DRILLING CO., INC, INSPECTED BY MRCE, 2014

"P" – PIEZOMETER

CPT-1 – CPT MADE BY CRAIG DRILLING CO INC. INSPECTED BY MRCE, 2015

REV.	DATE	BY	DESCRIPTION

WEST POST ROAD SITE

WHITE PLAINS NEW YORK

GRID PROPERTIES

NEW YORK NEW YORK

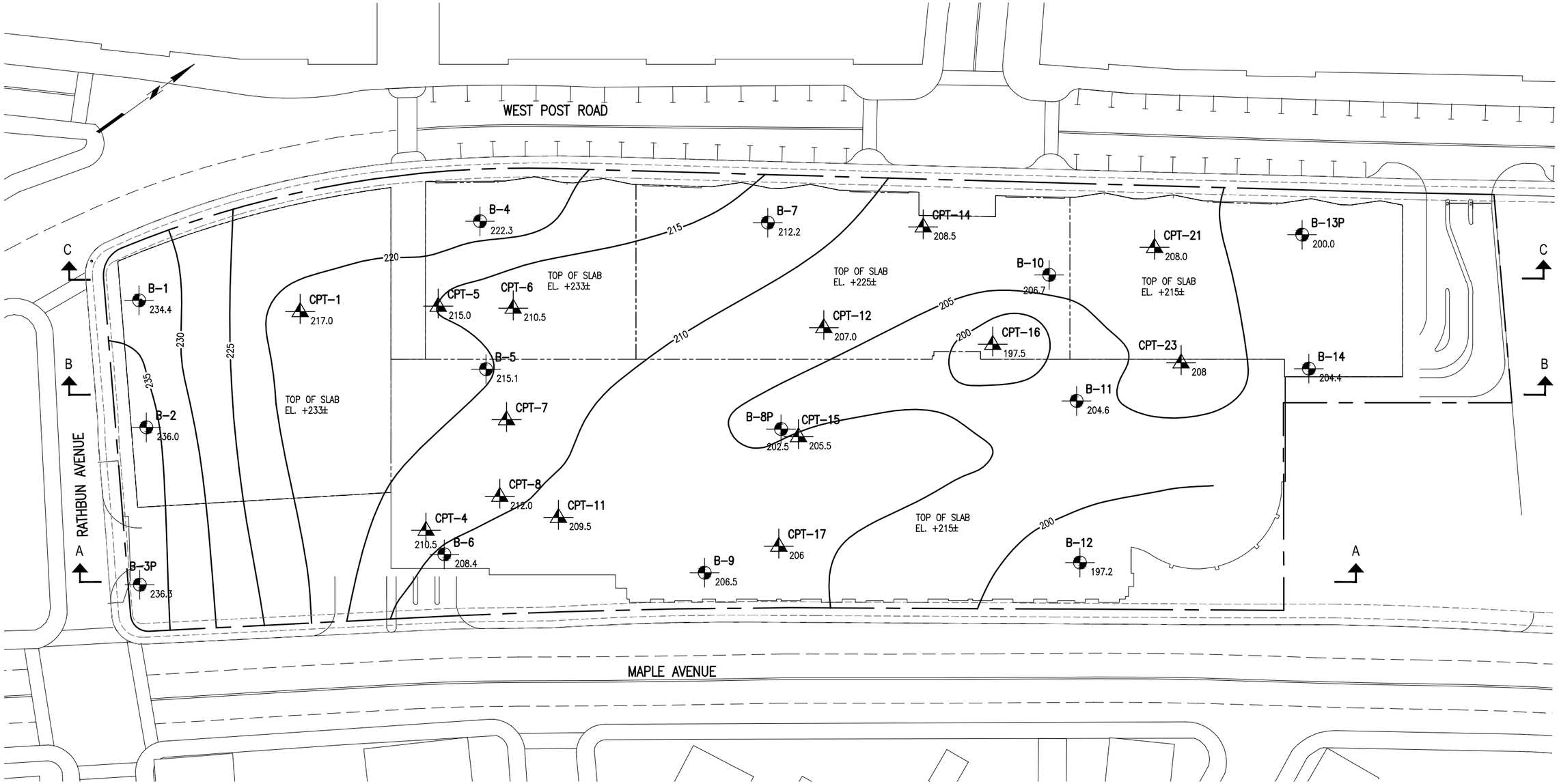
MUESER RUTLEDGE CONSULTING ENGINEERS

14 PENN PLAZA – 225 W. 34TH STREET, NY, NY 10122

SCALE	MADE BY: K.J.	DATE: 03-12-2015	FILE NUMBER
AS NOTED	CH'KD BY: C.L.	DATE: 03-12-2015	12316

BORING LOCATION PLAN

DRAWING NUMBER B-1



P L A N

GRAPHIC SCALE

30' 20' 10' 0 30' 60'

NOTES:

1. REFER TO DRAWING NO. B-1 FOR NOTES.

LEGEND:

B-8P
202.5 – BORING MADE BY CRAIG DRILLING CO., INC, INSPECTED BY MRCE, 2014

– ELEVATION OF TOP OF BEARING STRATUM

"P" – PIEZOMETER INSTALLED

CPT-1
217.0 – CPT MADE BY CRAIG DRILLING CO. INC., INSPECTED BY MRCE, 2015

REV.	DATE	BY	DESCRIPTION

WEST POST ROAD SITE

WHITE PLAINS NEW YORK

GRID PROPERTIES

NEW YORK NEW YORK

MUESER RUTLEDGE CONSULTING ENGINEERS

14 PENN PLAZA – 225 W. 34TH STREET, NY, NY 10122

SCALE	MADE BY: E.C.	DATE: 02-24-2015	FILE NUMBER
GRAPHIC	CH'KD BY: C.J.L.	DATE: 02-24-2015	12316

CONTOURS OF TOP OF BEARING STRATUM

DRAWING NUMBER B-2

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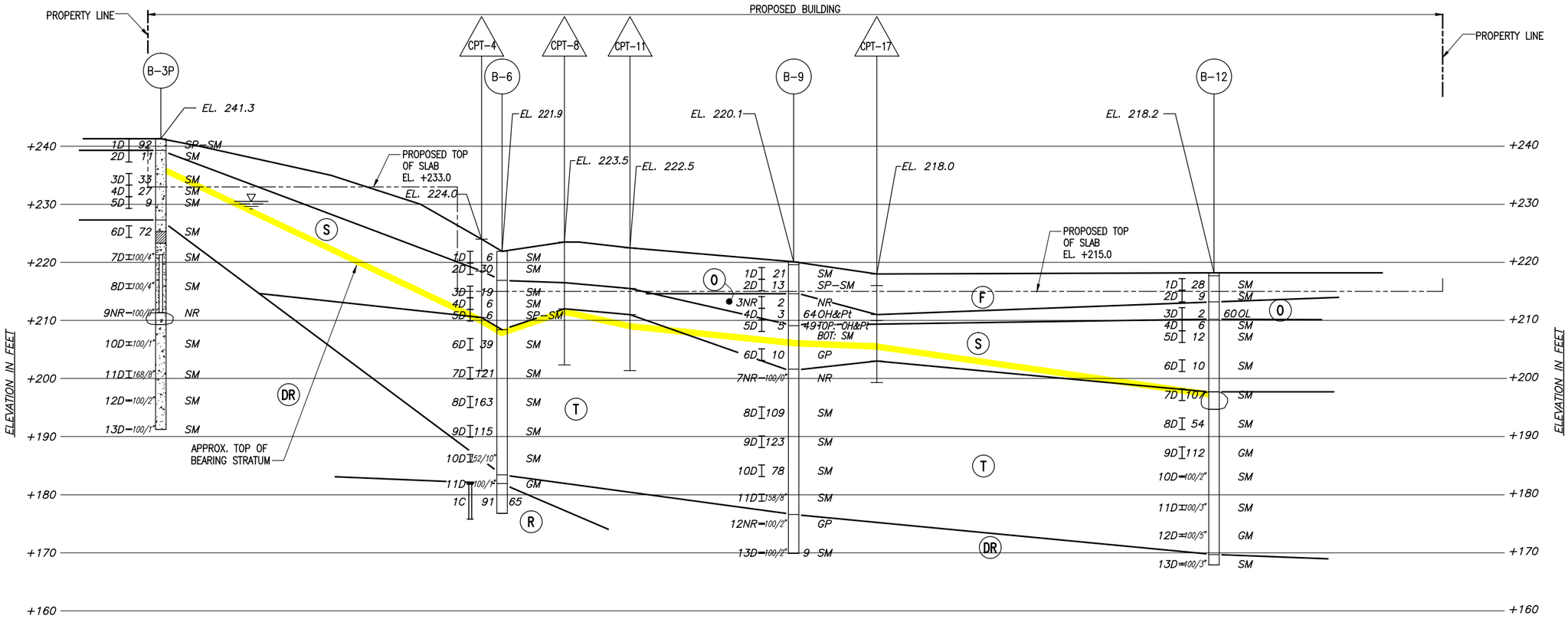


GEOLOGIC SECTION A-A

GEOLOGIC SECTION NOTES:

1. BORINGS AND SECTION LOCATIONS ARE SHOWN ON DRAWING NO. B-1.
2. STRATIFICATIONS SHOWN ON THE GEOLOGIC SECTIONS ARE BASED ON NECESSARY INTERPOLATION BETWEEN BORINGS AND MAY NOT REPRESENT ACTUAL SUBSURFACE CONDITIONS.
3. SEE DRAWING NO. GS-R FOR BORING LEGEND AND SUMMARY OF UNIFIED SOIL CLASSIFICATION SYSTEM.
4. DETAILED SOIL SAMPLE DESCRIPTIONS ARE PROVIDED ON THE BORING LOGS ATTACHED IN APPENDIX A.
5. ELEVATIONS REFER TO THE NATIONAL GEODETIC VERTICAL DATUM OF 1929(NGVD 29).

GENERAL STRATA DESCRIPTIONS:

(F) **FILL** BROWN FINE TO COARSE SAND, TRACE TO SOME SILT, GRAVEL, TRACE VEGETATION, ASPHALT, MISCELLANEOUS DEBRIS.

(O) **ORGANIC SILTY CLAY** SOFT BROWN ORGANIC SILTY CLAY, SOME PEAT, TRACE TO SOME FINE TO COARSE SAND.

(S1) **SAND** LOOSE TO MEDIUM COMPACT BROWN OR GRAY FINE TO COARSE SAND, SOME SILT, TRACE TO SOME GRAVEL.

(T) **TILL** MEDIUM COMPACT TO VERY COMPACT GRAY FINE TO MEDIUM SAND, SOME GRAVEL TO GRAVELLY, TRACE TO SOME SILT, TRACE COARSE SAND.

(DR) **DECOMPOSED ROCK** VERY COMPACT WHITE, BLACK, BROWN, ORANGE, GRAY OR BLUE FINE TO COARSE SAND, TRACE TO SOME SILT, TRACE ROCK FRAGMENTS.

(R) **ROCK** MEDIUM HARD UNWEATHERED TO MODERATELY WEATHERED GRAY GNEISS OR SCHISTOSE GNEISS, CLOSELY JOINTED TO JOINTED, WEATHERED, IRON STAINED JOINTS.

GRAPHIC SCALE

VERT. 10' 5' 0 10' 20'

HOR. 30' 20' 10' 0 30' 60'

REV.	DATE	BY	DESCRIPTION

WEST POST ROAD SITE

WHITE PLAINS NEW YORK

GRID PROPERTIES

NEW YORK NEW YORK

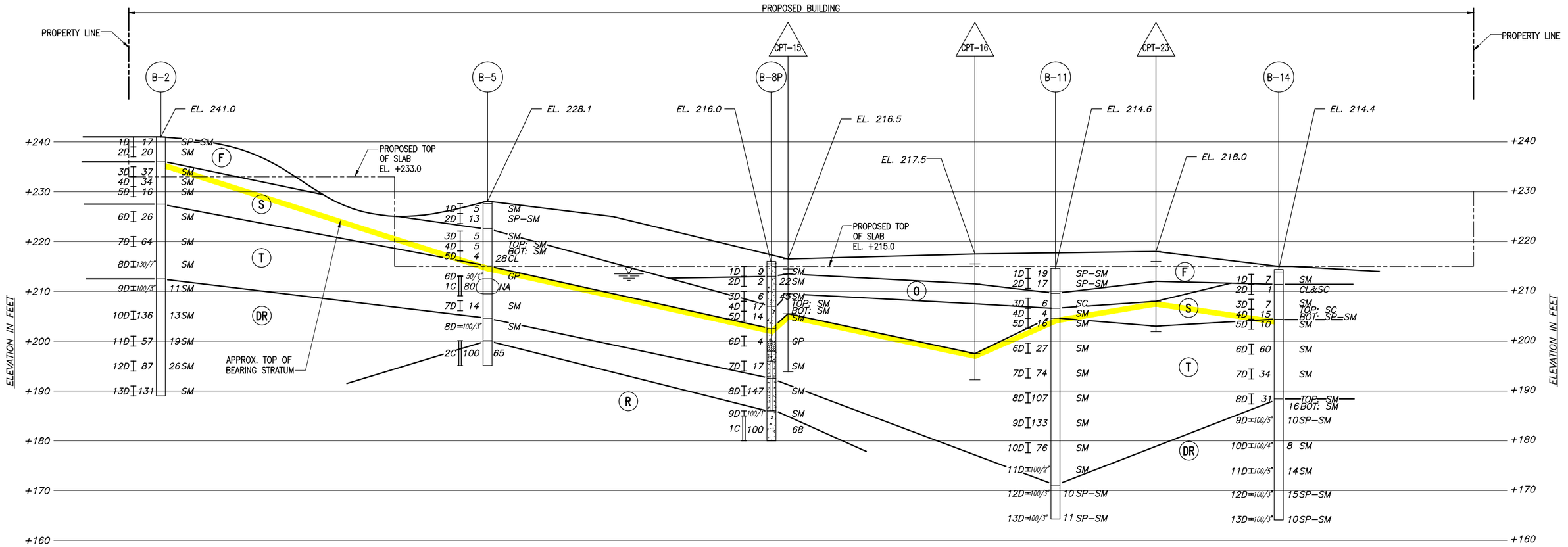
MUESER RUTLEDGE CONSULTING ENGINEERS

14 PENN PLAZA – 225 W. 34TH STREET, NY, NY 10122

SCALE	MADE BY: E.C.	DATE: 03-03-2015	FILE NUMBER
GRAPHIC	CH'KD BY: C.L.	DATE: 03-03-2015	12316

GEOLOGIC SECTION A-A

DRAWING NUMBER GS-1



GEOLOGIC SECTION B-B

NOTES:

1. REFER TO DWG. NO. GS-1 FOR GEOLOGIC SECTION NOTES AND GENERAL STRATA DESCRIPTIONS.

GRAPHIC SCALE

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HOR. 30' 20' 10' 0 30' 60'

REV.	DATE	BY	DESCRIPTION

WEST POST ROAD SITE

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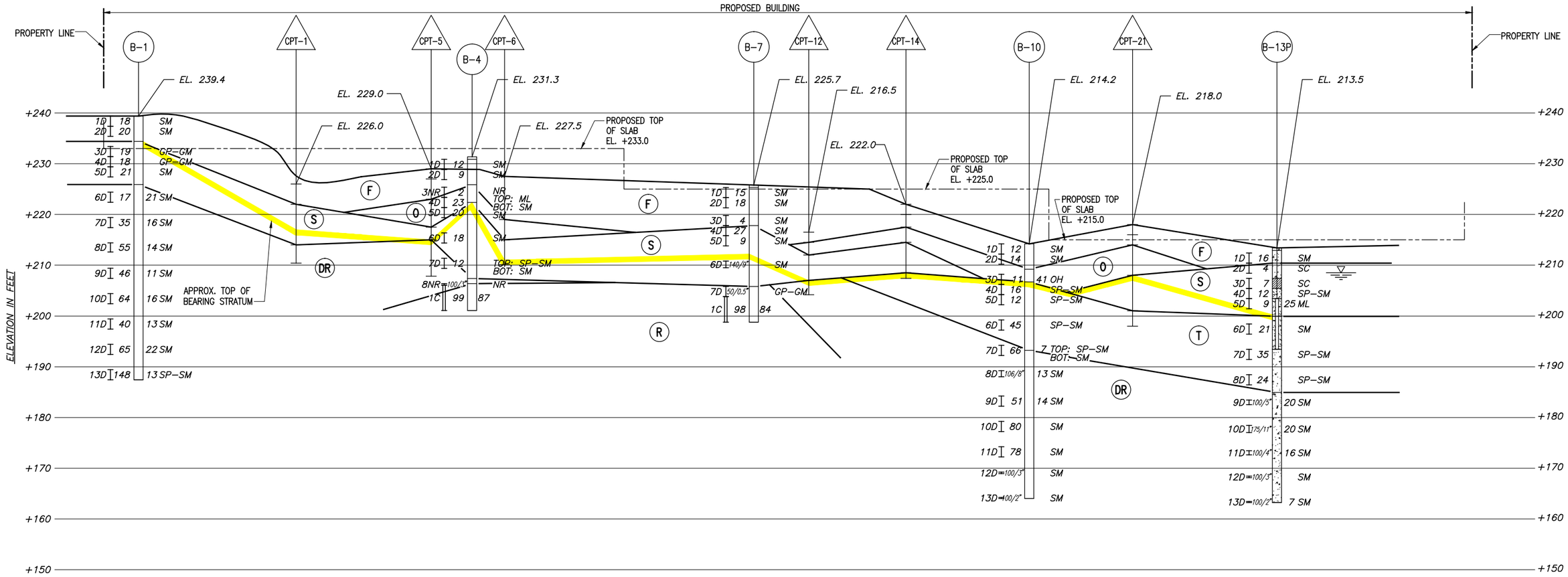
SCALE	MADE BY: E.C. DATE: 03-03-2015	FILE NUMBER
GRAPHIC	CH'KD BY: C.J.L. DATE: 03-03-2015	12316

GEOLOGIC SECTION B-B

DRAWING NUMBER GS-2



GEOLOGIC SECTION C-C

NOTES:

1. REFER TO DWG. NO. GS-1 FOR GEOLOGIC SECTION NOTES AND GENERAL STRATA DESCRIPTIONS.

GRAPHIC SCALE

VERT. 10' 5' 0 10' 20'

HOR. 30' 20' 10' 0 30' 60'

REV.	DATE	BY	DESCRIPTION

WEST POST ROAD SITE

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GRID PROPERTIES

NEW YORK NEW YORK

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14 PENN PLAZA – 225 W. 34TH STREET, NY, NY 10122

SCALE	MADE BY: E.C. DATE: 03-03-2015	FILE NUMBER
GRAPHIC	CH'KD BY: C.J.L. DATE: 03-03-2015	12316

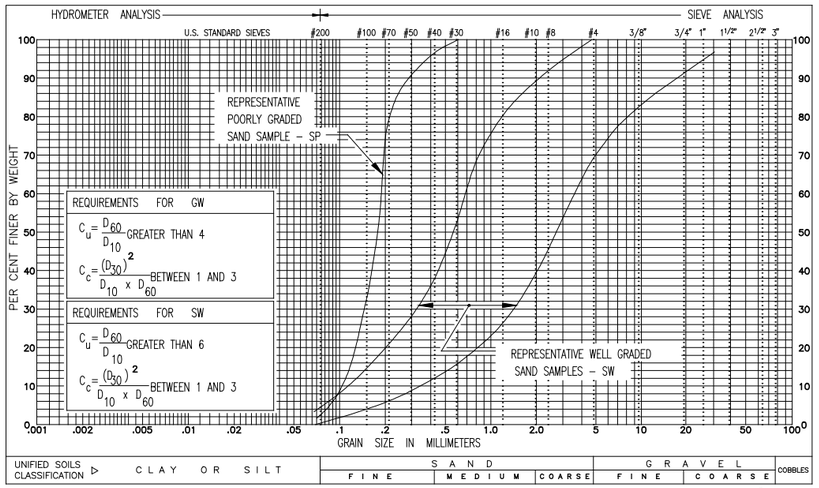
GEOLOGIC SECTION C-C — DRAWING NUMBER GS-3

UNIFIED SOIL CLASSIFICATION (INCLUDING IDENTIFICATION AND DESCRIPTION)

1 MAJOR DIVISIONS	2		3 GROUP SYMBOLS	4 TYPICAL NAMES	5 FIELD IDENTIFICATION PROCEDURES (EXCLUDING PARTICLES LARGER THAN 3 IN. AND BASING FRACTIONS ON ESTIMATED WEIGHTS)
COARSE-GRAINED SOILS: MORE THAN HALF OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE. THE NO. 200 SIEVE SIZE IS ABOUT THE SMALLEST PARTICLE VISIBLE TO THE NAKED EYE	GRAVELS: MORE THAN HALF OF COARSE FRACTION IS LARGER THAN NO. 4 SIEVE SIZE. (FOR VISUAL CLASSIFICATION, THE 1/4 -IN. SIZE MAY BE USED AS EQUIVALENT TO THE NO. 4 SIEVE SIZE)	CLEAN GRAVELS (LITTLE OR NO FINES)	GW	WELL GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES.	WIDE RANGE IN GRAIN SIZES AND SUBSTANTIAL AMOUNTS OF ALL INTERMEDIATE PARTICLE SIZES.
			GP	POORLY GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES.	PREDOMINANTLY ONE SIZE OR A RANGE OF SIZES WITH SOME INTERMEDIATE SIZES MISSING.
		GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES)	GM	SILTY GRAVELS, GRAVEL-SAND-SILT-MIXTURES.	NONPLASTIC FINES OR FINES WITH LOW PLASTICITY (FOR IDENTIFICATION PROCEDURES SEE ML BELOW)
			GC	CLAYEY GRAVELS, GRAVEL-SAND-CLAY MIXTURES.	PLASTIC FINES (FOR IDENTIFICATION PROCEDURES SEE CL BELOW)
	SANDS: MORE THAN HALF OF COARSE FRACTION IS SMALLER THAN NO. 4 SIEVE SIZE.	CLEAN SANDS (LITTLE OR NO FINES)	SW	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES.	WIDE RANGE IN GRAIN SIZES AND SUBSTANTIAL AMOUNTS OF ALL INTERMEDIATE PARTICLE SIZES.
			SP	POORLY GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES.	PREDOMINANTLY ONE SIZE OR A RANGE OF SIZES WITH SOME INTERMEDIATE SIZES MISSING.
		SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)	SM	SILTY SANDS, SAND-SILT-MIXTURES.	NONPLASTIC FINES OR FINES WITH LOW PLASTICITY (FOR IDENTIFICATION PROCEDURES SEE ML BELOW)
			SC	CLAYEY SANDS, SAND-CLAY MIXTURES.	PLASTIC FINES (FOR IDENTIFICATION PROCEDURES SEE CL BELOW)
FINE-GRAINED SOILS: MORE THAN HALF OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE. THE NO. 200 SIEVE SIZE IS ABOUT					IDENTIFICATION PROCEDURES ON FRACTION SMALLER THAN NO. 40 SIEVE SIZE
					DRY STRENGTH (CRUSHING CHARACTERISTICS) / DILATANCY (REACTION TO SHAKING) / TOUGHNESS (CONSISTENCY NEAR PL)
	SILTS AND CLAYS: LIQUID LIMIT IS LESS THAN 50		ML	INORGANIC SILTS, SANDY SILTS, ROCK FLOUR, OR CLAYEY SILTS WITH SLIGHT PLASTICITY.	NONE TO SLIGHT / QUICK TO SLOW / NONE
			CL	INORGANIC CLAYS, OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS.	MEDIUM TO HIGH / NONE TO VERY SLOW / MEDIUM
			OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY.	SLIGHT TO MEDIUM / SLOW / SLIGHT
	SILTS AND CLAYS: LIQUID LIMIT IS GREATER THAN 50		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SANDY OR SILTY SOILS, ELASTIC SILTS.	SLIGHT TO MEDIUM / SLOW TO NONE / SLIGHT TO MEDIUM
			CH	INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS.	HIGH TO VERY HIGH / NONE / HIGH
			OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS.	MEDIUM TO HIGH / NONE TO VERY SLOW / SLIGHT TO MEDIUM
HIGHLY ORGANIC SOILS			Pt	PEAT AND OTHER HIGHLY ORGANIC SOILS.	READILY IDENTIFIED BY COLOR, ODOR, SPONGY FEEL AND FREQUENTLY BY FIBROUS TEXTURE.

BOUNDARY CLASSIFICATIONS: SOILS POSSESSING CHARACTERISTICS OF TWO GROUPS ARE DESIGNATED BY COMBINATIONS OF GROUP SYMBOLS, I.E.: SP-SC POORLY GRADED SAND WITH CLAY BINDER.

LABORATORY CLASSIFICATION CRITERIA

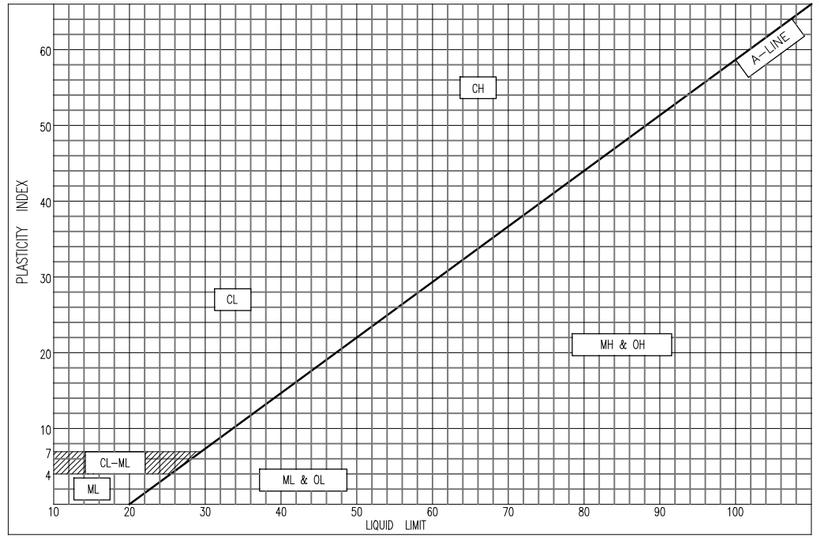


GRAIN SIZE PLOT

COBBLE 3-12"
BOULDER > 12"

DEPENDING ON PERCENTAGE OF FINES (FRACTION SMALLER THAN NO. 200 SIEVE SIZE) COARSE GRAINED SOILS ARE CLASSIFIED AS FOLLOWS:

LESS THAN 5%	GW, GP, SW, SP
MORE THAN 12%	GM, GC, SM, SC
5% TO 12%	BORDERLINE CASES REQUIRING USE OF DUAL SYMBOLS, I.E.: SP-SM, GP-GM.



PLASTICITY CHART FOR CLASSIFICATION OF FINE GRAINED SOILS

TERMINOLOGY USED IN MRCE SOIL DESCRIPTIONS

DEGREE OF COMPACTION FOR NON-PLASTIC SOIL

DEGREE OF COMPACTION	BLOWS* PER FOOT
LOOSE	0 TO 10
MEDIUM COMPACT	11 TO 29
COMPACT	30 TO 50
VERY COMPACT	GREATER THAN 50

* STANDARD PENETRATION RESISTANCE USING 140 LB. HAMMER FREE FALLING 30 INCHES TO DRIVE A 2 INCH O.D. SPLIT-SPOON SAMPLER.

CONSISTENCY OF CLAY AND CLAYEY SILT+

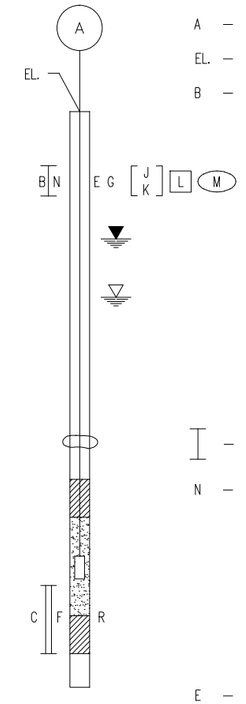
CONSISTENCY	UNCONFINED COMPRESSIVE STRENGTH (TSF)	IDENTIFICATION CHARACTERISTICS
SOFT	LESS THAN 0.5	EASILY REMOLDED WITH SLIGHT FINGER PRESSURE
MEDIUM	0.5 TO 1.0	REQUIRES SUBSTANTIAL PRESSURE FOR REMOLDING
STIFF	1.0 TO 4.0	DIFFICULT TO REMOLD WITH FINGERS
HARD	GREATER THAN 4.0	CANNOT BE REMOLDED WITH FINGERS

\+ NONPLASTIC SILTS ARE DESCRIBED USING DEGREE OF COMPACTION AS PRESENTED FOR NON-PLASTIC SOIL.

DESCRIPTION OF CONSTITUENT PERCENTAGES AS USED IN SOIL SAMPLE CLASSIFICATIONS

- 1% TO 12% - "TRACE"
- 13% TO 30% - "SOME"
- 31% TO 49% - ADJECTIVE FORM OF SOIL GROUP (EG. SANDY)
- EQUAL AMOUNT - "AND" (EG. SAND AND GRAVEL)

BORING LEGEND



- A — NUMBER, TYPE AND LOCATION OF BORING
- EL. — GROUND SURFACE ELEVATION AT BORING
- B — NUMBER AND TYPE OF SAMPLE
  - HA - HAND AUGER SAMPLE
  - D - DRY SAMPLE TAKEN WITH 2 INCH O.D. SPLIT SPOON
  - U - UNDISTURBED SAMPLE TAKEN WITH 3 INCH O.D. FIXED PISTON TYPE SAMPLER
  - UD - UNDISTURBED SAMPLE EXTRUDED IN FIELD AND PLACED IN JAR DUE TO POOR RECOVERY OR DISTURBANCE
  - S - THIN TUBE SAMPLE TAKEN WITH SHELBY TUBE SAMPLER
  - N - THIN TUBE SAMPLE TAKEN WITH DENISON BARREL SAMPLER
  - P - THIN TUBE SAMPLE TAKEN WITH PITCHER BARREL SAMPLER
  - NR - NO RECOVERY
- | — LENGTH OF SAMPLE ATTEMPT
- N — STANDARD PENETRATION RESISTANCE. NUMBER OF BLOWS FROM 140 LB. HAMMER FREE FALLING 30 INCHES REQUIRED TO DRIVE 2 INCH O.D. SPLIT SPOON SAMPLER ONE FOOT AFTER INITIAL PENETRATION OF 6 INCHES, UNLESS A SPECIFIC PENETRATION IS INDICATED.
  - P - PRESSED OR PUSH SAMPLE
  - WH - SAMPLE TAKEN UNDER WEIGHT OF HAMMER AND RODS
  - WR - SAMPLE TAKEN UNDER WEIGHT OF RODS
- E — AVERAGE NATURAL WATER CONTENT OF SAMPLE, IN PERCENT OF DRY WEIGHT
- G — UNIFIED SOIL CLASSIFICATON GROUP SYMBOL OF SAMPLE
- [J / K] = ATTERBERG LIQUID LIMIT VALUE / ATTERBERG PLASTIC LIMIT VALUE
- [L] — COMPRESSIVE STRENGTH IN TSF DETERMINED FROM UNCONFINED COMPRESSION TEST
- (M) — COMPRESSIVE STRENGTH IN TSF DETERMINED FROM UNCONSOLIDATED UNDRAINED TRIAXIAL COMPRESSION TEST
- ▼ — GROUNDWATER LEVEL OBSERVED IN BORING
  - * - MUD LEVEL
- ▽ — GROUNDWATER LEVEL OBSERVED IN PIEZOMETER
- C — ROCK CORE NUMBER
- | — LENGTH OF CORE RUN
- F — LENGTH OF CORE RECOVERED EXPRESSED AS A PERCENT OF THE LENGTH OF CORE RUN
- R — ROCK QUALITY DESIGNATION-THE SUM OF THE LENGTHS OF PIECES OF RECOVERED CORE WHICH ARE EQUAL TO OR GREATER THAN FOUR INCHES IN LENGTH, EXPRESSED AS A PERCENTAGE OF THE TOTAL LENGTH OF CORE RUN. LENGTHS ARE MEASURED BETWEEN IN-SITU SEPARATIONS AND MECHANICAL BREAKS RESULTING FROM CORING ARE IGNORED.
- IMPERVIOUS SEAL
- SAND FILTER SURROUNDING PIEZOMETER INTAKE ELEMENT
- INTAKE ELEMENT
- COBBLE OR BOULDER

REVISED 10-25-2012

MUESER RUTLEDGE CONSULTING ENGINEERS
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NEW YORK, NY 10122

GEOTECHNICAL REFERENCE STANDARDS

DRAWING NO. GS-R

TABLE R–1 ROCK CORE CLASSIFICATION CRITERIA

HARDNESS/SOUNDNESS CLASSIFICATION	TYPICAL GEOLOGIC CLASSIFICATION	IDENTIFICATION CHARACTERISTICS	GENERAL MINIMUM CORING CHARACTERISTICS				INTACT SPECIMEN TYPICAL MINIMUM COMPRESSIVE STRENGTH
			NX OR LARGER		BX OR SMALLER		
			REC	RQD	REC	RQD	PSI
HARD ROCK UNWEATHERED MAY BE JOINTED	–CRYSTALLINE IGNEOUS, OR METAMORPHIC ROCKS –HIGHLY SILICEOUS SEDIMENTARY ROCKS	– UNWEATHERED FABRIC – RINGS WHEN STRUCK WITH BAR – SHARP AND HARD FRACTURE SURFACE WHEN BROKEN MECHANICALLY – MAY BE JOINTED, BUT JOINTS ARE GENERALLY TIGHT. JOINTS MAY BE IRON STAINED. – DOES NOT DISINTEGRATE UPON EXPOSURE – DOES NOT SLAKE IN WATER	95 OR MORE	85 OR MORE	85 OR MORE	75 OR MORE	3000
MEDIUM HARD ROCK SLIGHTLY WEATHERED MAY BE CLOSELY JOINTED	AS FOR HARD ROCKS AND: – MODERATELY SILICEOUS SEDIMENTARY ROCKS – CERTAIN CALCAREOUS ROCKS	AS FOR HARD ROCK, EXCEPT: – FABRIC MAY BE IRON STAINED – MAY BE CLOSELY JOINTED, BUT JOINTS ARE GENERALLY TIGHT. JOINTS HAVE SLIGHT WEATHERING OR MAY BE IRON STAINED.	70	50	50	40	1500
INTERMEDIATE ROCK MODERATELY WEATHERED MAY BE CLOSELY JOINTED	AS FOR MEDIUM HARD ROCKS AND: – MOST SEDIMENTARY ROCKS OTHER THAN COMPACTION SHALES – MOST CALCAREOUS ROCKS WHICH ARE NOT POROUS	AS FOR MEDIUM HARD ROCK, EXCEPT: – MODERATELY WEATHERED FABRIC – WEATHERED JOINTS – THUDS WHEN STRUCK BY BAR – CAN BE INDENTED WITH A STEEL NAIL – BREAKS READILY WITH HAMMER – PIECES OF WEATHERED SURFACE CAN BE BROKEN OFF BY HAND – DOES NOT DISINTEGRATE UPON EXPOSURE – UNWEATHERED PIECES DO NOT SLAKE	50	35	35	25	500
WEATHERED ROCK HIGHLY WEATHERED MAY BE BROKEN	AS FOR INTERMEDIATE ROCKS AND: – COMPACTION SEDIMENTARIES – CALCAREOUS ROCKS WITH SOIL–FILLED CAVITIES	AS FOR INTERMEDIATE ROCK, EXCEPT: – HIGHLY WEATHERED FABRIC – CAN BE BROKEN EASILY, CRUMBLES WITH DIFFICULTY BY HAND – CAN BE SCRAPED BY KNIFE – MAY SOFTEN UPON EXPOSURE – MAY SLAKE IN WATER – STANDARD PENETRATION RESISTANCE EXCEEDS 50 BLOWS/FOOT	LESS THAN 50	LESS THAN 35	LESS THAN 35	LESS THAN 25	150
		WHEN RECOVERED WITH SOIL SAMPLING TECHNIQUES, DESCRIBED AS FOR SOILS INCLUDING USC GROUP SYMBOLS. (WTHD ROCK) ADDED TO DESCRIPTION.					
DECOMPOSED ROCK (RESIDUAL SOILS)	ALL ROCK TYPES	– ROCK TEXTURE AND STRUCTURE OFTEN PRESERVED – GENERALLY SOIL–LIKE IN CONSISTENCY – CAN BE CRUMPLED BY SLIGHT HAND PRESSURE – CAN BE PEELED WITH A KNIFE – STANDARD PENETRATION RESISTANCE LESS THAN 50 BLOWS/FOOT	GENERALLY RECOVERED WITH SOIL SAMPLING TECHNIQUES AND DESCRIBED AS FOR SOILS INCLUDING USC GROUP SYMBOLS. (DEC ROCK) ADDED TO DESCRIPTION.				

NOTES:

1. ROCK CORE DESCRIPTIONS REPRESENT ONLY THE MATERIAL RECOVERED IN THE CORING OPERATIONS.
2. GENERAL MINIMUM CORING CHARACTERISTICS ASSUME ROCK CORING WITH A DOUBLE TUBE SERIES "M" OR EQUIVALENT CORE BARREL USING GOOD CORING TECHNIQUES AND EQUIPMENT.
3. REC – RECOVERY IS THE LENGTH OF CORE RECOVERED, EXPRESSED AS A PERCENTAGE OF THE LENGTH OF CORE RUN.
4. RQD – ROCK QUALITY DESIGNATION IS THE SUM OF THE LENGTHS OF CORE PIECES FOUR INCHES OR LONGER EXPRESSED AS A PERCENTAGE OF THE TOTAL LENGTH OF CORE RUN. LENGTHS ARE MEASURED BETWEEN IN–SITU SEPARATIONS; MECHANICAL BREAKS RESULTING FROM CORING AND VERTICAL JOINTS ARE IGNORED.

TABLE R–2 WEATHERING AND JOINTING DEFINITIONS

DEGREE OF FABRIC WEATHERING

FABRIC WEATHERING		CHARACTERISTIC
Unweathered	UnW	No decomposition or discoloration rings when struck
Slightly Weathered	SlW	Iron Stained Rings when struck
Moderately Weathered	MdW	Deteriorated fabric Thuds when struck
Highly Weathered	HiW	Friable, easily broken by hand
Decomposed	Dec	Soil–like

DEGREE OF JOINT WEATHERING

JOINT WEATHERING		CHARACTERISTIC
Iron stained joints	FeJtS	Indicates movement of water along joints
Weathered joints	WJts	Joints are not tight and do not match. Joints have friable edges.

DEGREE OF JOINTING

JOINTING		JOINT FREQUENCY
Massive	Mssv	Less than 1 joint in 4 feet
Blocky	Blky	1 joint every 2 to 4 feet
Moderately Jointed	MdJtd	1 joint every foot to 2 feet
Jointed	Jtd	1 to 2 joints per foot
Closely Jointed	ClJtd	2 to 4 joints per foot
Broken	Bkn	More than 4 joints per foot

Vertical joints are ignored in RQD and joint frequency evaluations, but are noted in written descriptions and and on core sketches.

TABLE R–3 ABBREVIATIONS FOR ROCK CORE CLASSIFICATION

Blocky	Blky	Intermediate	Int
Broken	Bkn	Light	Lt
Brown	brn	Lignite	lign
Calcareous or Calcite	calc	Limestone	lms
Cavities	cvts	Jointed	Jtd
Chlorite	chl	Joints	Jts
Clay, Clayey	cl	Massive	Mssv
Closely Jointed	ClJtd	Medium Hard	MdHd
Coating on joint surface	coat	Mica, Micaceous	Mic
Crushed	crsh	Moderately Jointed	MdJtd
Dark	dk	Moderately Weathered	MdW
Decomposed	Dec	Pockets	pkts
Ditto	do	Quartz	qtz
Dolomite, Dolomitic	Dol	Recovery	Rec
Iron stained Joints	FeJts	Rock Quality Designation	RQD
Iron Stained	FeStn	Sand	sa
Feldspar	feld	Sandstone	ss
Foliation	Fol	Schist, Schistose	sch
Fractured	frct	Shale	sh
Fragments	fgmts	Shear zone	Sz
Gneiss, Gneissic	gns	Siliceous	sil
Gouge	gog	Silt	si
Granite, Granitic	gr	Slickensided	slks
Gray	gry	Slightly Weathered	SlW
Hard	Hd	Unweathered	UnW
Highly Weathered	HiW	Weathered	Wthd
Hornblende	Hbl	Weathered Joints	WJts
Injected	inj	Vein	Vn
Interbedded	Intrbd	Vertical Joints	VJts

TABLE R–4 ROCK CORE SKETCH KEY

SKETCH SYMBOLS

- Joint
- Healed Joint
- Broken
- Part of Core Not Recovered
- Cavities or Vugs in Core
- Clay
- Sand

JOINT ORIENTATION AND CONDITION

			SURFACE – CONDITION			
Parallel	–	//	Curved	– C	Slick	– 1
Crossing	–	X	Irregular	– I	Smooth	– 2
Foliation	–	F	Straight	– S	Rough	– 3
Stratification	–	S				
Unfoliated or Unstratified	–	U				
Mechanical Break	–	MB				

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NEW YORK, NY 10122

ROCK CORE CLASSIFICATION CRITERIA

DRAWING NO. RC–1

APPENDIX A

BORING LOGS

MUESER RUTLEDGE CONSULTING ENGINEERS

BORING LOG

BORING NO. B-1
SHEET 1 OF 2
PROJECT: WEST POST ROAD **FILE NO.** 12316
LOCATION: WHITE PLAINS, NEW YORK **SURFACE ELEV.** 239.4
RES. ENGR. GEOFFREY SMITH

DAILY PROGRESS	SAMPLE NO.	SAMPLE DEPTH	SAMPLE BLOWS/6"	SAMPLE DESCRIPTION	STRATA	DEPTH	CASING BLOWS	REMARKS
07:00	1D	0.0	5-8	Brown fine to medium sand, some silt, trace			DRILLED	
10-17-14		2.0	10-13	gravel, vegetation (SM)			AHEAD	
Friday	2D	2.0	12-10	Brown fine to medium sand, some silt, trace	F		4"	
Clear		4.0	10-6	gravel, vegetation, brick (SM)				
60°F						5		
	3D	6.0	9-9	Brown fine to coarse sandy gravel, trace silt				3D-5D: Odor.
		8.0	10-18	(GP-GM)				REC=6"
	4D	8.0	10-9	Do 3D (GP-GM)				
		10.0	9-11		S	10		
	5D	10.0	11-10	Gray fine to medium sand, some silt, trace				
		12.0	11-12	gravel (SM)				
						13.5		
						15		
	6D	15.0	5-5	Gray & white fine to coarse sand, some silt				WC=21
		17.0	12-11	(Decomposed Rock) (SM)				
						20		
	7D	20.0	17-17	Brown & white fine to medium sand, some				WC=16
		22.0	18-21	silt (Decomposed Rock) (SM)				
						25		
	8D	25.0	22-27	Brown & white fine to medium sand, some				WC=14
		26.8	28-100/4"	silt, trace rock fragments (Decomposed Rock)				Steady drilling through-
				(SM)				out decomposed rock.
						30		
	9D	30.0	22-20	Do 8D (Decomposed Rock) (SM)				WC=11
		32.0	26-35					
					DR			
						35		
	10D	35.0	30-32	Do 8D (Decomposed Rock) (SM)				WC=16
		37.0	32-33					
						40		
	11D	40.0	17-19	Do 8D (Decomposed Rock) (SM)				WC=13
		42.0	21-32					
						45		
	12D	45.0	17-20	Red brown fine to medium sand, some silt				WC=22
		47.0	45-57	(Decomposed Rock) (SM)				WC=Water Content
								in percent of dry
								weight.
						50		
	13D	50.0	34-80	Gray & white fine to coarse sand, trace silt				WC=13
09:30		52.0	68-69	(Decomposed Rock) (SP-SM)		52		End of Boring at 52'.

MUESER RUTLEDGE CONSULTING ENGINEERS

BORING NO. B-1
SHEET 2 **OF** 2

PROJECT WEST POST ROAD
FILE NO. 12316
LOCATION WHITE PLAINS, NEW YORK
SURFACE ELEV. 239.4
BORING LOCATION SEE BORING LOCATION PLAN
DATUM NGVD 29

BORING EQUIPMENT AND METHODS OF STABILIZING BOREHOLE

TYPE OF BORING RIG		TYPE OF FEED DURING CORING		CASING USED					
TRUCK	CME-75	MECHANICAL		DIA., IN.	4	DEPTH, FT. FROM	0	TO	10
SKID		HYDRAULIC	X	DIA., IN.		DEPTH, FT. FROM		TO	
BARGE		OTHER		DIA., IN.		DEPTH, FT. FROM		TO	
OTHER									

CASING USED: [X] YES [ ] NO

TYPE AND SIZE OF:

D-SAMPLER	2" O. D. SPLIT SPOON
U-SAMPLER	
S-SAMPLER	
CORE BARREL	
CORE BIT	
DRILL RODS	NWJ

DRILLING MUD USED: [X] YES [ ] NO
DIAMETER OF ROTARY BIT, IN. 3-7/8
TYPE OF DRILLING MUD QUIK GEL

AUGER USED: [ ] YES [X] NO
TYPE AND DIAMETER, IN.

*CASING HAMMER, LBS. 140 AVERAGE FALL, IN. 30
*SAMPLER HAMMER, LBS. 140 AVERAGE FALL, IN. 30
*USED AUTOMATIC HAMMER.

WATER LEVEL OBSERVATIONS IN BOREHOLE

DATE	TIME	DEPTH OF HOLE	DEPTH OF CASING	DEPTH TO WATER	CONDITIONS OF OBSERVATION
					NO WATER LEVEL OBSERVATIONS MADE.

PIEZOMETER INSTALLED [ ] YES [X] NO SKETCH SHOWN ON

STANDPIPE:	TYPE		ID, IN.		LENGTH, FT.		TOP ELEV.
INTAKE ELEMENT:	TYPE		OD, IN.		LENGTH, FT.		TIP ELEV.
FILTER:	MATERIAL		OD, IN.		LENGTH, FT.		BOT. ELEV.

PAY QUANTITIES

3.5" DIA. DRY SAMPLE BORING	LIN. FT.	52	NO. OF 3" SHELBY TUBE SAMPLES	
3.5" DIA. U-SAMPLE BORING	LIN. FT.		NO. OF 3" UNDISTURBED SAMPLES	
CORE DRILLING IN ROCK	LIN. FT.		OTHER:	

BORING CONTRACTOR CRAIG TEST BORING
DRILLER JOE SCHUSTER HELPERS JOHN MILLINGTON
REMARKS
RESIDENT ENGINEER GEOFFREY SMITH DATE 10-17-14
CLASSIFICATION CHECK: CHERYL J. MOSS TYPING CHECK: CHERYL J. MOSS

MUESER RUTLEDGE CONSULTING ENGINEERS

BORING LOG

BORING NO. B-2
SHEET 1 OF 2
PROJECT: WEST POST ROAD **FILE NO.** 12316
LOCATION: WHITE PLAINS, NEW YORK **SURFACE ELEV.** 241
RES. ENGR. GEOFFREY SMITH

DAILY PROGRESS	SAMPLE NO.	SAMPLE DEPTH	SAMPLE BLOWS/6"	SAMPLE DESCRIPTION	STRATA	DEPTH	CASING BLOWS	REMARKS
	1D	0.0	7-8	Brown fine to medium sand, some gravel, trace			DRILLED	
10-17-14		2.0	9-11	trace silt, vegetation (SP-SM)			AHEAD	
Friday	2D	2.0	16-10		F		4"	
Clear		4.0	10-13	Brown fine to medium sand, some gravel, silt,				
60°F				trace vegetation (SM)		5		
	3D	6.0	20-19	Brown fine to medium sand, some silt, trace				
		8.0	18-10	gravel (SM)				
	4D	8.0	22-18	Brown fine to coarse sand, some silt, trace				Rig chatter at 9'.
		10.0	16-18	gravel (SM)	S	10		
	5D	10.0	10-7	Brown fine to coarse sand, some gravel, silt				
		12.0	9-11	(SM)				
						13.5		
						15		
	6D	15.0	14-15	Gray fine to coarse sand, some gravel, silt				
		17.0	11-15	(SM)				
						20		
	7D	20.0	26-29	Brown gray fine to medium sand, some silt,	T			
		22.0	35-37	gravel (SM)				
						25		Possible
	8D	25.0	27-30	Do 7D (SM)				boulder at 26'.
		26.1	100/1"					
						28.5		
						30		
	9D	30.0	56-100/3"	Blue & orange fine to coarse sand, some silt				WC=11
		30.8		(Decomposed Rock) (SM)				REC=4"
						35		
	10D	35.0	37-49	Do 9D (Decomposed Rock) (SM)				WC=13
		36.6	87-100/1"					
						40		
	11D	40.0	23-24	Brown & white fine to medium sand, some silt	DR			WC=19
		42.0	33-37	(Decomposed Rock) (SM)				
						45		
	12D	45.0	21-27	Red brown fine to medium sand, some clayey				WC=26
		47.0	60-38	silt (Decomposed Rock) (SM)				
								WC=Water Content
								in percent of dry
						50		weight.
	13D	50.0	43-63	White fine to coarse sand, some clayey silt				
12:00		52.0	68-58	(Decomposed Rock) (SM)		52		End of Boring at 52'.

MUESER RUTLEDGE CONSULTING ENGINEERS

BORING NO. B-2
SHEET 2 **OF** 2

PROJECT WEST POST ROAD
FILE NO. 12316
LOCATION WHITE PLAINS, NEW YORK
SURFACE ELEV. 241
BORING LOCATION SEE BORING LOCATION PLAN
DATUM NGVD 29

BORING EQUIPMENT AND METHODS OF STABILIZING BOREHOLE

TYPE OF BORING RIG		TYPE OF FEED DURING CORING		CASING USED						
TRUCK	CME-75	MECHANICAL		DIA., IN.	4	[X] YES	[ ] NO	DEPTH, FT. FROM	0	TO 10
SKID		HYDRAULIC	X	DIA., IN.				DEPTH, FT. FROM		TO
BARGE		OTHER		DIA., IN.				DEPTH, FT. FROM		TO
OTHER										

TYPE AND SIZE OF:

D-SAMPLER	2" O. D. SPLIT SPOON
U-SAMPLER	
S-SAMPLER	
CORE BARREL	
CORE BIT	
DRILL RODS	NWJ

DRILLING MUD USED [X] YES [ ] NO
DIAMETER OF ROTARY BIT, IN. 3-7/8
TYPE OF DRILLING MUD QUIK GEL

AUGER USED [ ] YES [X] NO
TYPE AND DIAMETER, IN.

*CASING HAMMER, LBS. 140 AVERAGE FALL, IN. 30
*SAMPLER HAMMER, LBS. 140 AVERAGE FALL, IN. 30
*USED AUTOMATIC HAMMER.

WATER LEVEL OBSERVATIONS IN BOREHOLE

DATE	TIME	DEPTH OF HOLE	DEPTH OF CASING	DEPTH TO WATER	CONDITIONS OF OBSERVATION
					NO WATER LEVEL OBSERVATIONS MADE.

PIEZOMETER INSTALLED [ ] YES [X] NO SKETCH SHOWN ON

STANDPIPE:	TYPE		ID, IN.		LENGTH, FT.		TOP ELEV.
INTAKE ELEMENT:	TYPE		OD, IN.		LENGTH, FT.		TIP ELEV.
FILTER:	MATERIAL		OD, IN.		LENGTH, FT.		BOT. ELEV.

PAY QUANTITIES

3.5" DIA. DRY SAMPLE BORING	LIN. FT.	52	NO. OF 3" SHELBY TUBE SAMPLES	
3.5" DIA. U-SAMPLE BORING	LIN. FT.		NO. OF 3" UNDISTURBED SAMPLES	
CORE DRILLING IN ROCK	LIN. FT.		OTHER:	

BORING CONTRACTOR CRAIG TEST BORING
DRILLER JOE SCHUSTER HELPERS JOHN MILLINGTON
REMARKS
RESIDENT ENGINEER GEOFFREY SMITH DATE 10-17-14
CLASSIFICATION CHECK: CHERYL J. MOSS TYPING CHECK: CHERYL J. MOSS

MUESER RUTLEDGE CONSULTING ENGINEERS

BORING LOG

BORING NO. B-3P
SHEET 1 OF 4
PROJECT: WEST POST ROAD **FILE NO.** 12316
LOCATION: WHITE PLAINS, NEW YORK **SURFACE ELEV.** 241.3
RES. ENGR. GEOFFREY SMITH

DAILY PROGRESS	SAMPLE NO.	SAMPLE DEPTH	SAMPLE BLOWS/6"	SAMPLE DESCRIPTION	STRATA	DEPTH	CASING BLOWS	REMARKS
09:30	1D	0.0	5-88	Brown fine to medium sand, trace silt, gravel,	F		DRILLED	
10-15-14		2.0	4-7	vegetation (SP-SM)		2	AHEAD	
Wednesday	2D	2.0	4-6	Brown fine to medium sand, some silt, trace			4"	
Overcast		4.0	5-5	gravel, coarse sand (SM)				Rig chatter at 4'.
65°F						5		
	3D	6.0	15-15	Brown fine to medium sand, some silt, trace				
		8.0	18-20	gravel (SM)				
	4D	8.0	21-16	Brown fine to coarse sand, some silt, gravel	S			
		10.0	11-11	(SM)		10		
	5D	10.0	5-4	Brown fine to medium sand, some silt, trace				
		12.0	5-2	gravel, coarse sand (SM)				
						14		Rig chatter at 14'.
						15		
	6D	15.0	25-34	Gray fine to medium sand, some silt, gravel,				
		17.0	38-51	trace coarse sand (SM)				
								Rig chatter at 19'.
						20		
	7D	20.0	36-100/4"	Gray gravelly fine to medium sand, some silt,				
		20.8		trace coarse sand (SM)	T			
						25		
	8D	25.0	54-100/4"	Gray fine to medium sand, some silt, gravel,				REC=6"
		25.8		trace coarse sand (SM)				
								Drilled through
						30		boulder from 30'
	9NR	30.0	100/0"	No recovery	BLDR			to 32'.
		30.0				32		
						35		
	10D	35.0	37-100/1"	Gray & orange fine to medium sand, some silt				REC=2"
		35.6		(Decomposed Rock) (SM)				
						40		
	11D	40.0	28-68	Orange fine to medium sand, some silt				REC=6"
		41.2	100/2"	(Decomposed Rock) (SM)	DR			
						45		
	12D	45.0	100/2"	Gray fine to medium sand, some silt				REC=1"
		45.2		(Decomposed Rock) (SM)				
						50		13D: REC=1"
12:00	13D	50.0	100/1"	Gray brown fine to medium sand, some silt,		50.1		End of Boring at 50.1'.
		50.1		trace rock fragments (Decomposed Rock)(SM)				

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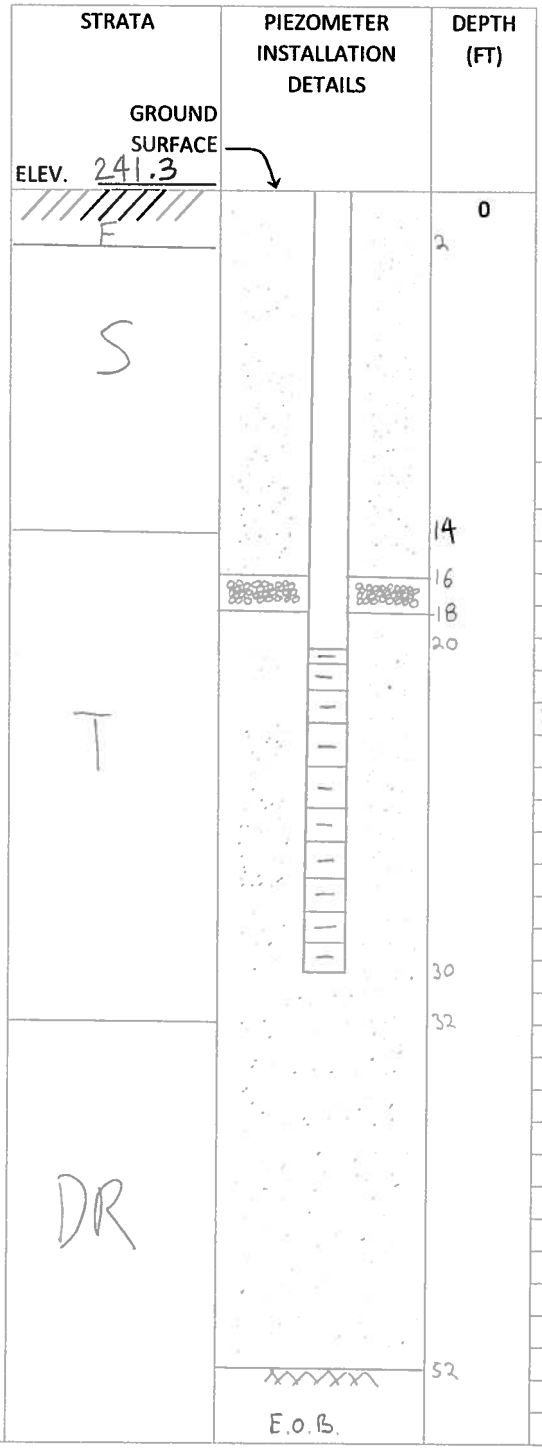
PIEZOMETER RECORD

PIEZOMETER OR BORING NO. B-3P
SHEET 2 OF 4
FILE NO. 12316
INSTALLATION DATE 10/15/14
RES ENGR. G. SMITH

PROJECT: WEST POST ROAD
LOCATION: WHITE PLAINS, NY
PIEZOMETER LOCATION: SEE PLP

☐ SEE SKETCH ON BACK



PIEZOMETER TYPE PVC SLOTTED PIPE

INTAKE POINT
depth to bottom, ft = 30
depth to top, ft = 18
length, ft = 12 = L
diameter, in = 4 , ft = 0.33 = 2R

STANDPIPE/RISER
elevation of rim, ft = 241.3
diameter, in = 2 , ft = 0.17 = 2r

READING TIME		DEPTH – RIM TO WATER	ELEVATION OF WATER	REMARKS
DATE	CLOCK			
10/17/14	8:30	14.5'	226.8	
12/4/14	10:35	10.65	230.65	*BAILED WATER LEVEL TO A DEPTH OF 15.2 AND RAN A RISING HEAD TEST.
12/4/14	11:10	12.50	228.8	

SAND
GRAVEL
BENTONITE
GROUT

GROUND SURFACE ELEV. 241.3

PIEZOMETER NO. B-3P

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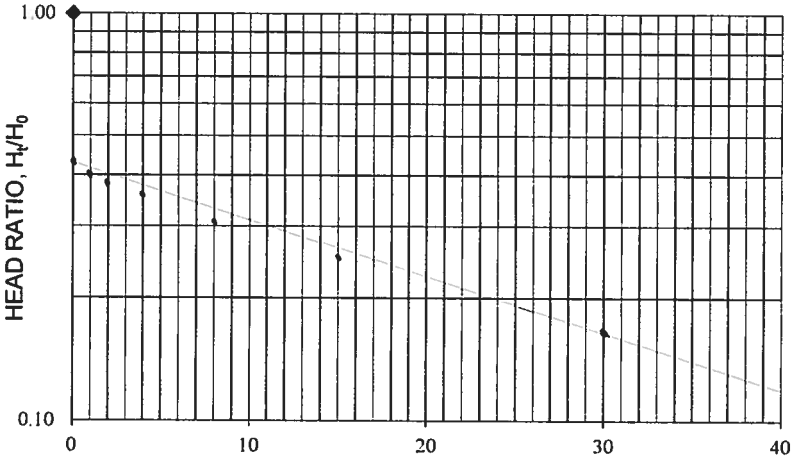
VARIABLE HEAD PERMEABILITY TEST

☐ BOREHOLE OR ☒ PIEZOMETER NO. B-3P

PROJECT: WEST POST ROAD
LOCATION: WHITE PLAINS, NY
PIEZOMETER LOCATION: SEE BLP

SHEET 3 OF 4
FILE NO. 12316
TEST NO. 1
RES ENGR. G. SMITH
CALC. BY GAS DATE 12/4/14
CH'KD BY ____ DATE ____



INTAKE POINT
depth to bottom, ft = 30
depth to top, ft = 18
length, ft = 12 = L
diameter, in = 4, ft = 0.33 = 2R

STANDPIPE/RISER
elevation of rim, ft = 240.3
diameter, in = 2, ft = 0.17 = 2r

depth of casing, ft = –

depth to which stand-pipe was bailed, ft = 15.2 = Z

READING TIME			ORIGINAL TEST DEPTH, H_0 (ft.)	DEPTH AT TIME t, H_t (ft.)	UNBALANCED HEAD $\Delta H_t = H_t - H_0$ (ft.)	HEAD RATIO $\Delta H_t/\Delta H_0$	REMARKS
DATE	CLOCK	Δt MIN.					
12/4/14	10:40	0	10.65	15.2	4.55	0.43	RISING HEAD
	10:41	1		14.9	4.25	0.40	TEST
	10:42	2		14.7	4.05	0.38	
	10:44	4		14.5	3.85	0.36	
	10:48	8		14.0	3.35	0.31	
	10:55	15		13.4	2.75	0.26	
	11:10	30		12.5	1.85	0.17	

PIEZOMETER NO. B-3P

MUESER RUTLEDGE CONSULTING ENGINEERS

BORING NO. B-3P
SHEET 4 **OF** 4

PROJECT WEST POST ROAD
FILE NO. 12316
LOCATION WHITE PLAINS, NEW YORK
SURFACE ELEV. 241.3
BORING LOCATION SEE BORING LOCATION PLAN
DATUM NGVD 29

BORING EQUIPMENT AND METHODS OF STABILIZING BOREHOLE

TYPE OF BORING RIG		TYPE OF FEED DURING CORING		CASING USED		X YES		NO		
TRUCK	CME-75	MECHANICAL		DIA., IN.	4	DEPTH, FT. FROM	0	TO	10	
SKID		HYDRAULIC	X	DIA., IN.		DEPTH, FT. FROM		TO		
BARGE		OTHER		DIA., IN.		DEPTH, FT. FROM		TO		
OTHER										

TYPE AND SIZE OF:

D-SAMPLER	2" O. D. SPLIT SPOON
U-SAMPLER	
S-SAMPLER	
CORE BARREL	
CORE BIT	
DRILL RODS	NWJ

DRILLING MUD USED X YES NO
DIAMETER OF ROTARY BIT, IN. 3-7/8
TYPE OF DRILLING MUD REVERT

AUGER USED YES X NO
TYPE AND DIAMETER, IN.

*CASING HAMMER, LBS. 140 AVERAGE FALL, IN. 30
*SAMPLER HAMMER, LBS. 140 AVERAGE FALL, IN. 30
*USED AUTOMATIC HAMMER.

WATER LEVEL OBSERVATIONS IN BOREHOLE

DATE	TIME	DEPTH OF HOLE	DEPTH OF CASING	DEPTH TO WATER	CONDITIONS OF OBSERVATION
					SEE SHEET NO. 2

PIEZOMETER INSTALLED X YES NO SKETCH SHOWN ON SEE SHEET NO. 2

STANDPIPE:	TYPE	2" PVC	ID, IN.		LENGTH, FT.	20	TOP ELEV.	
INTAKE ELEMENT:	TYPE	0.10 SLOTTED PVC	OD, IN.	2	LENGTH, FT.	10	TIP ELEV.	
FILTER:	MATERIAL	SAND	OD, IN.	4	LENGTH, FT.	34	BOT. ELEV.	

PAY QUANTITIES

3.5" DIA. DRY SAMPLE BORING	LIN. FT.	50.1	NO. OF 3" SHELBY TUBE SAMPLES	
3.5" DIA. U-SAMPLE BORING	LIN. FT.		NO. OF 3" UNDISTURBED SAMPLES	
CORE DRILLING IN ROCK	LIN. FT.		OTHER:	

BORING CONTRACTOR CRAIG TEST BORING
DRILLER JOE SCHUSTER HELPERS JOHN MILLINGTON
REMARKS PIEZOMETER INSTALLED.
RESIDENT ENGINEER GEOFFREY SMITH DATE 10-15-14
CLASSIFICATION CHECK: CHERYL J. MOSS TYPING CHECK: CHERYL J. MOSS

MUESER RUTLEDGE CONSULTING ENGINEERS

BORING LOG

BORING NO. B-4
SHEET 1 OF 3
PROJECT: WEST POST ROAD **FILE NO.** 12316
LOCATION: WHITE PLAINS, NEW YORK **SURFACE ELEV.** 231.3
RES. ENGR. GEOFFREY SMITH

DAILY PROGRESS	SAMPLE NO.	SAMPLE DEPTH	SAMPLE BLOWS/6"	SAMPLE DESCRIPTION	STRATA	DEPTH	CASING BLOWS	REMARKS
07:20	1D	0.5	7-8	Brown fine to medium sand, some silt, trace	**	0.5	DRILLED	**Asphalt from 0' to 0.5'.
10-13-14		2.5	4-4	gravel, coarse sand (SM)			AHEAD	
Monday	2D	2.5	6-6	Do 1D (SM)	F		4"	
Overcast		4.5	3-3					
50°F						5		
						5.5		
	3NR	6.0	4-1	No recovery	O			
		8.0	1-3					
	4D	8.0	4-5	Top 6": Brown silt, some fine sand (ML)		9		
		10.0	18-11	Bot 6": Brown gray f-m sand, sm silt, tr gvl (SM)		10		
	5D	10.0	38-15	Gray fine to medium sand, some silt, trace				Odor.
		12.0	5-7	gravel (SM)				
								Rig chatter at 14'.
						15		
	6D	15.0	4-8	Brown fine to coarse sand, some silt, gravel (SM)				
		17.0	10-8		S			
						20		
	7D	20.0	6-4	Top 6": Red orange fine to medium sand, trace				
		22.0	8-9	silt, gravel (SP-SM)				
				Bot 5": Gray fine to coarse sand, some silt,				
				gravel (SM)		24		Hard drilling at 24';
					DR	25		felt like decomposed
	8NR	25.0	100/3"	No recovery			4*	rock.
		25.3					3*	
	1C	25.3	REC=99%	Medium hard unweathered to slightly weathered	R		3*	*Coring time in
		30.3	RQD=87%	gray schistose gneiss, jointed, weathered			3*	minutes per foot.
				joints		30	3*	
09:00						30.3	3*	End of Boring at 30.3'.
						35		
						40		
						45		
						50		

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ROCK CORE SKETCH

PROJECT: WEST POST RD
LOCATION: WHITE PLAINS, NY
TEST/INSP. EQUIPMENT
REF. CODES/STANDARDS

BORING NO. B-4
SHEET 2 OF 3
FILE NO. 12316
SURFACE ELEV. 231.3
RES ENGR. G. SMITH

Run No.	REC/RQD

Run No.	REC/RQD

Run No.	REC/RQD

Run No.	REC/RQD
1C	99/87

TOP

TOP

TOP

25.25 TOP

60XFI2

45//FI2

20XFI3

10XFI3

30XFI3

20XFI3

30,2D

30.25 BOTTOM

BOTTOM

BOTTOM

BOTTOM

SCALE: 1 division = 0.1 feet

1

2

3

4

ROCK CORE SKETCH
LEGEND

JOINTING
J - Joint
MB - Mechanical Break
D - Angle w/ Horizontal
// - Parallel
X - Crossing
F - Foliation
S - Stratification
U - Unfoliated or Unstratified

JOINT SURFACE
C - Curved
I - Irregular
S - Straight

JOINT CONDITION
1 - Slick
2 - Smooth
3 - Rough

SKETCH SYMBOLS
Joint
Healed Joint
Broken
Part of Core Not Recovered
Cavities or Vugs in Core
Clay
Sand
Empty Space

NOTES

MUESER RUTLEDGE CONSULTING ENGINEERS

BORING NO. B-4
SHEET 3 **OF** 3

PROJECT WEST POST ROAD
FILE NO. 12316
LOCATION WHITE PLAINS, NEW YORK
SURFACE ELEV. 231.3
BORING LOCATION SEE BORING LOCATION PLAN
DATUM NGVD 29

BORING EQUIPMENT AND METHODS OF STABILIZING BOREHOLE

TYPE OF BORING RIG		TYPE OF FEED DURING CORING		CASING USED		X YES		NO		
TRUCK	CME-75	MECHANICAL		DIA., IN.	4	DEPTH, FT. FROM	0	TO	10	
SKID		HYDRAULIC	X	DIA., IN.		DEPTH, FT. FROM		TO		
BARGE		OTHER		DIA., IN.		DEPTH, FT. FROM		TO		
OTHER										

TYPE AND SIZE OF:

D-SAMPLER	2" O. D. SPLIT SPOON
U-SAMPLER	
S-SAMPLER	
CORE BARREL	NX DOUBLE BARREL
CORE BIT	NX DIAMOND BIT
DRILL RODS	NWJ

DRILLING MUD USED X YES NO
DIAMETER OF ROTARY BIT, IN. 3-7/8
TYPE OF DRILLING MUD QUIK GEL

AUGER USED YES X NO
TYPE AND DIAMETER, IN.

*CASING HAMMER, LBS. 140 AVERAGE FALL, IN. 30
*SAMPLER HAMMER, LBS. 140 AVERAGE FALL, IN. 30
*USED AUTOMATIC HAMMER.

WATER LEVEL OBSERVATIONS IN BOREHOLE

DATE	TIME	DEPTH OF HOLE	DEPTH OF CASING	DEPTH TO WATER	CONDITIONS OF OBSERVATION
					NO WATER LEVEL OBSERVATIONS MADE.

PIEZOMETER INSTALLED YES X NO SKETCH SHOWN ON

STANDPIPE:	TYPE		ID, IN.		LENGTH, FT.	TOP ELEV.	
INTAKE ELEMENT:	TYPE		OD, IN.		LENGTH, FT.	TIP ELEV.	
FILTER:	MATERIAL		OD, IN.		LENGTH, FT.	BOT. ELEV.	

PAY QUANTITIES

3.5" DIA. DRY SAMPLE BORING	LIN. FT.	25.3	NO. OF 3" SHELBY TUBE SAMPLES	
3.5" DIA. U-SAMPLE BORING	LIN. FT.		NO. OF 3" UNDISTURBED SAMPLES	
CORE DRILLING IN ROCK	LIN. FT.	5	OTHER:	

BORING CONTRACTOR CRAIG TEST BORING
DRILLER JOE SCHUSTER HELPERS JOHN MILLINGTON
REMARKS
RESIDENT ENGINEER GEOFFREY SMITH DATE 10-13-14
CLASSIFICATION CHECK: CHERYL J. MOSS TYPING CHECK: CHERYL J. MOSS

MUESER RUTLEDGE CONSULTING ENGINEERS

BORING LOG

BORING NO. B-5
SHEET 1 OF 3
PROJECT: WEST POST ROAD **FILE NO.** 12316
LOCATION: WHITE PLAINS, NEW YORK **SURFACE ELEV.** 228.1
RES. ENGR. GEOFFREY SMITH

DAILY PROGRESS	SAMPLE NO.	SAMPLE DEPTH	SAMPLE BLOWS/6"	SAMPLE DESCRIPTION	STRATA	DEPTH	CASING BLOWS	REMARKS
09:30	1D	0.5	3-3	Brown fine to medium sand, some silt, trace	**	0.5	DRILLED	**Asphalt from 0' to 0.5'.
10-13-14		2.5	2-2	coarse sand, asphalt (Fill) (SM)			AHEAD	
Monday	2D	2.5	3-10	Brown tan fine to medium sand, some gravel,	F		4"	
Overcast		4.5	3-4	trace silt, brick, asphalt (Fill) (SP-SM)				
55°F						5		
						5.5		
	3D	6.0	3-3	Brown fine to medium sand, some silt, trace				
		8.0	2-4	gravel (SM)				
	4D	8.0	4-3	Top 8": Do 3D (SM)				4D-5D: Odor.
		10.0	2-3	Bot 8": Gray f-m sand, some silt, tr gvl (SM)	S	10		
	5D	10.0	1-1	Soft gray silty clay, trace fine to medium sand,				WC=28
		12.0	3-3	gravel (CL)				Possible boulder
						13		from 13' to 15'.
					T			
						15		
	6D	15.0	50/1"	Gray boulder fragments (GP)			3*	6D: REC=1" in tip.
	1C	15.1	REC=80%	Medium hard slightly weathered gray schistose	BLDR		1.5*	
		19.0	RQD=NA	gneiss boulder			1.5*	
							0.5*	*Coring time in
						20		minutes per foot.
	7D	20.0	5-7	Gray fine to coarse sand, some rock fragments,	T			
		22.0	7-13	silt (SM)				
						23.5		
						25		
	8D	25.0	100/3"	Tan brown fine sand, some silt (Decomposed	DR			REC=3"
		25.3		Rock) (SM)				
						28		Refusal at 28'.
	2C	28.0	REC=100%	Medium hard slightly weathered to moderately			5*	
		33.0	RQD=65%	weathered gray schistose gneiss, closely		30	2*	
				jointed to jointed, weathered joints	R		2*	
							2*	
11:45						33	2.5*	Heavy chatter at 32.5'.
								End of Boring at 33'.
						35		
								WC=Water Content
								in percent of dry
								weight.
						40		
						45		
						50		

MRCE Form BL-1

BORING NO. B-5

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New York, NY 10122
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www.mrce.com

ROCK CORE SKETCH

PROJECT: WEST POST RD
LOCATION: WHITE PLAINS, NY
TEST/INSP. EQUIPMENT
REF. CODES/STANDARDS

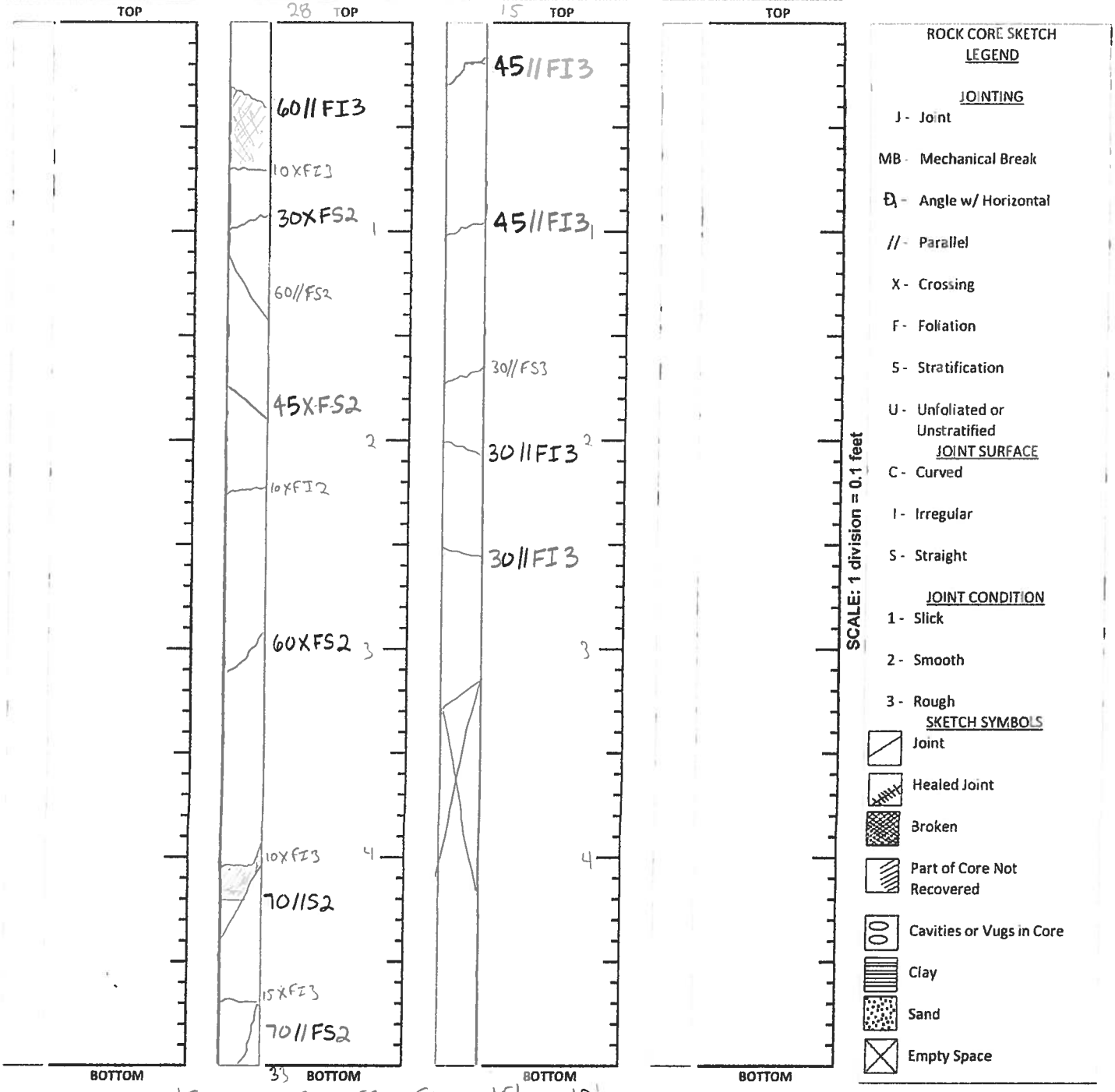
BORING NO. B-5
SHEET 2 OF 3
FILE NO. 12316
SURFACE ELEV. 228.1
RES ENGR. G. SMITH

Run No.	REC/ROD

Run No.	REC/ROD
2C	100/65

Run No.	REC/ROD
1C	80/NA

Run No.	REC/ROD



ROCK CORE SKETCH
LEGEND

JOINTING
J - Joint
MB - Mechanical Break
Θ - Angle w/ Horizontal
// - Parallel
X - Crossing
F - Foliation
S - Stratification
U - Unfoliated or Unstratified

JOINT SURFACE
C - Curved
I - Irregular
S - Straight

JOINT CONDITION
1 - Slick
2 - Smooth
3 - Rough

SKETCH SYMBOLS
Joint
Healed Joint
Broken
Part of Core Not Recovered
Cavities or Vugs in Core
Clay
Sand
Empty Space

NOTES 1C WAS A BOULDER FROM 15' TO 19'

MUESER RUTLEDGE CONSULTING ENGINEERS

BORING NO. B-5
SHEET 3 **OF** 3

PROJECT WEST POST ROAD
FILE NO. 12316
LOCATION WHITE PLAINS, NEW YORK
SURFACE ELEV. 228.1
BORING LOCATION SEE BORING LOCATION PLAN
DATUM NGVD 29

BORING EQUIPMENT AND METHODS OF STABILIZING BOREHOLE

TYPE OF BORING RIG		TYPE OF FEED DURING CORING		CASING USED		X YES		NO		
TRUCK	CME-75	MECHANICAL		DIA., IN.	4	DEPTH, FT. FROM	0	TO	13	
SKID		HYDRAULIC	X	DIA., IN.		DEPTH, FT. FROM		TO		
BARGE		OTHER		DIA., IN.		DEPTH, FT. FROM		TO		
OTHER										

TYPE AND SIZE OF:

D-SAMPLER	2" O. D. SPLIT SPOON
U-SAMPLER	
S-SAMPLER	
CORE BARREL	NX DOUBLE BARREL
CORE BIT	NX DIAMOND BIT
DRILL RODS	NWJ

DRILLING MUD USED X YES NO
DIAMETER OF ROTARY BIT, IN. 3-7/8
TYPE OF DRILLING MUD QUIK GEL

AUGER USED YES X NO
TYPE AND DIAMETER, IN.

*CASING HAMMER, LBS. 140 AVERAGE FALL, IN. 30
*SAMPLER HAMMER, LBS. 140 AVERAGE FALL, IN. 30
*USED AUTOMATIC HAMMER.

WATER LEVEL OBSERVATIONS IN BOREHOLE

DATE	TIME	DEPTH OF HOLE	DEPTH OF CASING	DEPTH TO WATER	CONDITIONS OF OBSERVATION
					NO WATER LEVEL OBSERVATIONS MADE.

PIEZOMETER INSTALLED YES X NO SKETCH SHOWN ON

STANDPIPE:	TYPE		ID, IN.		LENGTH, FT.		TOP ELEV.		
INTAKE ELEMENT:	TYPE		OD, IN.		LENGTH, FT.		TIP ELEV.		
FILTER:	MATERIAL		OD, IN.		LENGTH, FT.		BOT. ELEV.		

PAY QUANTITIES

3.5" DIA. DRY SAMPLE BORING	LIN. FT.	24	NO. OF 3" SHELBY TUBE SAMPLES	
3.5" DIA. U-SAMPLE BORING	LIN. FT.		NO. OF 3" UNDISTURBED SAMPLES	
CORE DRILLING IN ROCK	LIN. FT.	9	OTHER:	

BORING CONTRACTOR CRAIG TEST BORING
DRILLER JOE SCHUSTER HELPERS JOHN MILLINGTON
REMARKS
RESIDENT ENGINEER GEOFFREY SMITH DATE 10-13-14
CLASSIFICATION CHECK: CHERYL J. MOSS TYPING CHECK: CHERYL J. MOSS

MUESER RUTLEDGE CONSULTING ENGINEERS

BORING LOG

BORING NO. B-6
SHEET 1 OF 3
PROJECT: WEST POST ROAD **FILE NO.** 12316
LOCATION: WHITE PLAINS, NEW YORK **SURFACE ELEV.** 221.9
RES. ENGR. GEOFFREY SMITH

DAILY PROGRESS	SAMPLE NO.	SAMPLE DEPTH	SAMPLE BLOWS/6"	SAMPLE DESCRIPTION	STRATA	DEPTH	CASING BLOWS	REMARKS
07:20	1D	0.0	3-3	Brown fine to medium sand, some silt, trace			DRILLED	
10-14-14		2.0	3-4	gravel (SM)			AHEAD	
Tuesday	2D	2.0	4-22	Do 1D (SM)	F		4"	
Overcast		4.0	8-5					
55°F						5		
	3D	6.0	3-2	Brown fine to medium sand, some silt, trace				REC=6"
		8.0	17-8	gravel (SM)				
	4D	8.0	3-3	Brown fine to coarse sand, some silt, trace				
		10.0	3-2	gravel (SM)	S	10		
	5D	10.0	2-3	Brown fine to medium sand, trace silt, gravel				Odor.
		12.0	3-4	(SP-SM)				
						13.5		
						15		
	6D	15.0	11-19	Gray fine to medium sand, some gravel, silt				
		17.0	20-26	(SM)				
						20		
	7D	20.0	18-67	Gray fine to medium sand, some silt, gravel				Odor.
		22.0	54-47	(SM)				
								Rig chatter at 23'.
						25		
	8D	25.0	45-79	Gray fine to medium sand, some silt, trace	T			
		26.9	84-100/5"	gravel (SM)				
								Rig chatter at 28'.
						30		
	9D	30.0	40-48	Do 8D (SM)				
		32.0	67-36					
						35		
	10D	35.0	46-52	Gray fine to medium sand, some silt, trace				
		36.3	100/4"	gravel (SM)				
						38.5		
					DR	40		
	11D	40.0	100/1"	Gray & brown rock fragments, some fine to			5*	*Coring time in
		40.1		coarse sand, silt (Decomposed Rock) (GM)			5*	minutes per foot.
	1C	40.1	REC=91%	Medium hard slightly weathered to moderately	R		5*	
		46.1	RQD=65%	weathered gray gneiss, jointed to broken,			5*	
				weathered joints		45	5*	
09:20						45.1		End of Boring at 45.1'.
						50		

MRCE Form BL-1

BORING NO. B-6

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ROCK CORE SKETCH

PROJECT: WEST POST ROAD
LOCATION: WHITE PLAINS, NY
TEST/INSP. EQUIPMENT
REF. CODES/STANDARDS

BORING NO. B-6
SHEET 2 OF 3
FILE NO. 12316
SURFACE ELEV. 221.9
RES ENGR. G. SMITH

Run No.	REC/RQD

Run No.	REC/RQD

Run No.	REC/RQD

Run No.	REC/RQD
1C	91/65

TOP

40.1

10XFI3
20XFI3
60//FI2
15XFI3
10XFI3
20XFI3
10XFI2
10XFI2
70//FS3
MB
10XFI3
10XFI3
10XFI3
10XFI3

SCALE: 1 division = 0.1 feet

BOTTOM

45.1

ROCK CORE SKETCH
LEGEND

JOINTING
J - Joint
MB - Mechanical Break
Θ - Angle w/ Horizontal
// - Parallel
X - Crossing
F - Foliation
S - Stratification
U - Unfoliated or Unstratified

JOINT SURFACE
C - Curved
I - Irregular
S - Straight

JOINT CONDITION
1 - Slick
2 - Smooth
3 - Rough

SKETCH SYMBOLS
Joint
Healed Joint
Broken
Part of Core Not Recovered
Cavities or Vugs in Core
Clay
Sand
Empty Space

NOTES

MUESER RUTLEDGE CONSULTING ENGINEERS

BORING NO. B-6
SHEET 3 **OF** 3

PROJECT WEST POST ROAD
FILE NO. 12316
LOCATION WHITE PLAINS, NEW YORK
SURFACE ELEV. 221.9
BORING LOCATION SEE BORING LOCATION PLAN
DATUM NGVD 29

BORING EQUIPMENT AND METHODS OF STABILIZING BOREHOLE

TYPE OF BORING RIG		TYPE OF FEED DURING CORING		CASING USED		X YES		NO		
TRUCK	CME-75	MECHANICAL		DIA., IN.	4	DEPTH, FT. FROM	0	TO	10	
SKID		HYDRAULIC	X	DIA., IN.		DEPTH, FT. FROM		TO		
BARGE		OTHER		DIA., IN.		DEPTH, FT. FROM		TO		
OTHER										

TYPE AND SIZE OF:

D-SAMPLER	2" O. D. SPLIT SPOON
U-SAMPLER	
S-SAMPLER	
CORE BARREL	NX DOUBLE BARREL
CORE BIT	NX DIAMOND BIT
DRILL RODS	NWJ

DRILLING MUD USED X YES NO
DIAMETER OF ROTARY BIT, IN. 3-7/8
TYPE OF DRILLING MUD QUIK GEL

AUGER USED YES X NO
TYPE AND DIAMETER, IN.

*CASING HAMMER, LBS. 140 AVERAGE FALL, IN. 30
*SAMPLER HAMMER, LBS. 140 AVERAGE FALL, IN. 30
*USED AUTOMATIC HAMMER.

WATER LEVEL OBSERVATIONS IN BOREHOLE

DATE	TIME	DEPTH OF HOLE	DEPTH OF CASING	DEPTH TO WATER	CONDITIONS OF OBSERVATION
					NO WATER LEVEL OBSERVATIONS MADE.

PIEZOMETER INSTALLED YES X NO SKETCH SHOWN ON

STANDPIPE:	TYPE		ID, IN.		LENGTH, FT.		TOP ELEV.		
INTAKE ELEMENT:	TYPE		OD, IN.		LENGTH, FT.		TIP ELEV.		
FILTER:	MATERIAL		OD, IN.		LENGTH, FT.		BOT. ELEV.		

PAY QUANTITIES

3.5" DIA. DRY SAMPLE BORING	LIN. FT.	40.1	NO. OF 3" SHELBY TUBE SAMPLES	
3.5" DIA. U-SAMPLE BORING	LIN. FT.		NO. OF 3" UNDISTURBED SAMPLES	
CORE DRILLING IN ROCK	LIN. FT.	5	OTHER:	

BORING CONTRACTOR CRAIG TEST BORING
DRILLER JOE SCHUSTER HELPERS JOHN MILLINGTON
REMARKS
RESIDENT ENGINEER GEOFFREY SMITH DATE 10-14-14
CLASSIFICATION CHECK: CHERYL J. MOSS TYPING CHECK: CHERYL J. MOSS

MUESER RUTLEDGE CONSULTING ENGINEERS

BORING LOG

BORING NO. B-7
SHEET 1 OF 3
PROJECT: WEST POST ROAD **FILE NO.** 12316
LOCATION: WHITE PLAINS, NEW YORK **SURFACE ELEV.** 225.7
RES. ENGR. GEOFFREY SMITH

DAILY PROGRESS	SAMPLE NO.	SAMPLE DEPTH	SAMPLE BLOWS/6"	SAMPLE DESCRIPTION	STRATA	DEPTH	CASING BLOWS	REMARKS
07:20	1D	0.5	7-7	Gray brown fine to medium sand, some silt,	**	0.5	DRILLED	Asphalt from 0' to 0.5'.
10-14-14		2.5	8-19	trace gravel, vegetation (SM)			AHEAD	
Tuesday	2D	2.5	14-10	Gray fine to medium sand, some silt, gravel			4"	
Overcast		4.5	8-7	(SM)				
55°F					F	5		
	3D	6.0	5-2	Tan brown gravelly fine to coarse sand, some				
		8.0	2-2	silt (SM)		8		
	4D	8.0	9-11	Brown fine to medium sand, some silt (SM)				
		10.0	16-10			10		
	5D	10.0	7-5	Brown fine to medium sand, some silt, trace				
		12.0	4-7	gravel (SM)				
					S			
						15		
	6D	15.0	30-40	Brown fine to medium sand, some gravel, silt				
		16.3	100/3"	(SM)				
								Rig chatter at 19'.
						20		
	7D	20.0	50/0.5"	Gray rock fgmts, sm f-c sand, tr silt (GP-GM)				REC=0.5" in tip.
	1C	22.0	REC=98%	Medium hard slightly weathered to unweathered				
		27.0	RQD=84%	gray schistose gneiss, moderately jointed,			3.5*	*Coring time in
				weathered joints & iron stained joints & mineral	R		4*	minutes per foot.
				coated joints		25	3.5*	
							3*	
09:15						27	3.5*	End of Boring at 27'.
						30		
						35		
						40		
						45		
						50		

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ROCK CORE SKETCH

PROJECT: West Post Road
LOCATION: White Plains, NY
TEST/INSP. EQUIPMENT
REF. CODES/STANDARDS

BORING NO. B-7
SHEET 2 OF 3
FILE NO. 12316
SURFACE ELEV. 225.7
RES ENGR. G. Smith

Run No.	REC/RQD

TOP

BOTTOM

Run No.	REC/RQD

TOP

BOTTOM

Run No.	REC/RQD

TOP

BOTTOM

Run No.	REC/RQD
1C	98/70

TOP

20XFS2
fe+min+
wjt

15XFS2

60XFS2
fe+min jt

15XFI3

BOTTOM

SCALE: 1 division = 0.1 feet

ROCK CORE SKETCH
LEGEND

JOINTING
J - Joint
MB - Mechanical Break
Θ - Angle w/ Horizontal
// - Parallel
X - Crossing
F - Foliation
S - Stratification
U - Unfoliated or Unstratified

JOINT SURFACE
C - Curved
I - Irregular
S - Straight

JOINT CONDITION
1 - Slick
2 - Smooth
3 - Rough

SKETCH SYMBOLS
Joint
Healed Joint
Broken
Part of Core Not Recovered
Cavities or Vugs in Core
Clay
Sand
Empty Space

NOTES

MUESER RUTLEDGE CONSULTING ENGINEERS

BORING NO. B-7
SHEET 3 **OF** 3

PROJECT WEST POST ROAD
FILE NO. 12316
LOCATION WHITE PLAINS, NEW YORK
SURFACE ELEV. 225.7
BORING LOCATION SEE BORING LOCATION PLAN
DATUM NGVD 29

BORING EQUIPMENT AND METHODS OF STABILIZING BOREHOLE

TYPE OF BORING RIG		TYPE OF FEED DURING CORING		CASING USED						
TRUCK	CME-75	MECHANICAL		DIA., IN.	4	X YES		DEPTH, FT. FROM	0	TO 10
SKID		HYDRAULIC	X	DIA., IN.			NO	DEPTH, FT. FROM		TO
BARGE		OTHER		DIA., IN.				DEPTH, FT. FROM		TO
OTHER										

TYPE AND SIZE OF:

D-SAMPLER	2" O. D. SPLIT SPOON
U-SAMPLER	
S-SAMPLER	
CORE BARREL	NX DOUBLE BARREL
CORE BIT	NX DIAMOND BIT
DRILL RODS	NWJ

DRILLING MUD USED X YES NO
DIAMETER OF ROTARY BIT, IN. 3-7/8
TYPE OF DRILLING MUD QUIK GEL

AUGER USED YES X NO
TYPE AND DIAMETER, IN.

*CASING HAMMER, LBS. 140 AVERAGE FALL, IN. 30
*SAMPLER HAMMER, LBS. 140 AVERAGE FALL, IN. 30
*USED AUTOMATIC HAMMER.

WATER LEVEL OBSERVATIONS IN BOREHOLE

DATE	TIME	DEPTH OF HOLE	DEPTH OF CASING	DEPTH TO WATER	CONDITIONS OF OBSERVATION
					NO WATER LEVEL OBSERVATIONS MADE.

PIEZOMETER INSTALLED YES X NO SKETCH SHOWN ON

STANDPIPE:	TYPE		ID, IN.		LENGTH, FT.		TOP ELEV.
INTAKE ELEMENT:	TYPE		OD, IN.		LENGTH, FT.		TIP ELEV.
FILTER:	MATERIAL		OD, IN.		LENGTH, FT.		BOT. ELEV.

PAY QUANTITIES

3.5" DIA. DRY SAMPLE BORING	LIN. FT.	22	NO. OF 3" SHELBY TUBE SAMPLES	
3.5" DIA. U-SAMPLE BORING	LIN. FT.		NO. OF 3" UNDISTURBED SAMPLES	
CORE DRILLING IN ROCK	LIN. FT.	5	OTHER:	

BORING CONTRACTOR CRAIG TEST BORING
DRILLER ED FLANAGAN HELPERS ANDY MACLEAN
REMARKS
RESIDENT ENGINEER GEOFFREY SMITH DATE 10-14-14
CLASSIFICATION CHECK: CHERYL J. MOSS TYPING CHECK: CHERYL J. MOSS

MUESER RUTLEDGE CONSULTING ENGINEERS

BORING LOG

BORING NO. B-8P
SHEET 1 OF 4
PROJECT: WEST POST ROAD **FILE NO.** 12316
LOCATION: WHITE PLAINS, NEW YORK **SURFACE ELEV.** 216.0
RES. ENGR. GEOFFREY SMITH

DAILY PROGRESS	SAMPLE NO.	SAMPLE DEPTH	SAMPLE BLOWS/6"	SAMPLE DESCRIPTION	STRATA	DEPTH	CASING BLOWS	REMARKS
09:30					**	0.5	DRILLED	**Asphalt from 0' to 0.5'.
10-14-14	1D	1.0	6-5	Brown fine to coarse sand, some gravel, silt,	F		AHEAD	
Tuesday		3.0	4-5	trace broken pipe, glass (Fill) (SM)		3	4"	
Overcast	2D	3.0	3-1	Gray organic silty fine to medium sand (SM)				WC=22
60°F		5.0	1-1			5		2D-3D: Odor.
					O			
	3D	6.0	1/12"	Gray organic silty fine to medium sand, trace				WC=43
		8.0	6-4	coarse sand, vegetation (SM)				
	4D	8.0	7-8	Top 12": Do 3D (SM)		9		
		10.0	9-12	Bot 12": Gray f-m sand, sm silt, tr gravel (SM)		10		
	5D	10.0	4-6	Gray fine to medium sand, some silt, gravel,	S			REC=6"
		12.0	8-11	trace coarse sand (SM)				
						13.5		
						15		
	6D	15.0	2-2	Gray gravel, some fine to coarse sand, trace				REC=4", possible wash.
		17.0	2-3	silt (GP)				
					T			
						20		
	7D	20.0	8-8	Gray fine to medium sand, some gravel, silt,				
		22.0	9-12	trace coarse sand (SM)				
						23.5		
						25		
	8D	25.0	10-68	Gray fine to coarse sand, some silt				
		27.0	79-36	(Decomposed Rock) (SM)	DR			
						30		
	9D	30.0	100/1"	Do 8D (Decomposed Rock) (SM)				REC=1"
	1C	31.0					4*	*Coring time in
		36.0	REC=100%	Medium hard slightly weathered to unweathered	R		3*	minutes per foot.
			RQD=68%	gray gneiss, jointed to closely jointed, weathered			3*	
				joints & iron stained joints		35	3.5*	
12:00						36	3*	End of Boring at 36'.
								WC=Water Content
								in percent of dry
						40		weight.
						45		
						50		

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ROCK CORE SKETCH

PROJECT: WEST POST ROAD
LOCATION: WHITE PLAINS, NY
TEST/INSP. EQUIPMENT
REF. CODES/STANDARDS

BORING NO. B-8P
SHEET 2 OF 4
FILE NO. 12316
SURFACE ELEV. 216.0
RES ENGR. G. SMITH

Run No.	REC/RQD

Run No.	REC/RQD

Run No.	REC/RQD
2C	100/68

Run No.	REC/RQD

TOP

30XFS2
30XFI2
20XFS2
fe+Wjts
70//FS2
20XFS2
10XFS2
30XFI3
45//FI2
30//FI3
3
30//FI3
70XFS2
4
30//FI3
70XFS2
W+fejt

BOTTOM

SCALE: 1 division = 0.1 feet

ROCK CORE SKETCH
LEGEND

JOINTING
J - Joint
MB - Mechanical Break
Ø - Angle w/ Horizontal
// - Parallel
X - Crossing
F - Foliation
S - Stratification
U - Unfoliated or Unstratified

JOINT SURFACE
C - Curved
I - Irregular
S - Straight

JOINT CONDITION
1 - Slick
2 - Smooth
3 - Rough

SKETCH SYMBOLS
Joint
Healed Joint
Broken
Part of Core Not Recovered
Cavities or Vugs in Core
Clay
Sand
Empty Space

NOTES POORLY FOLIATED

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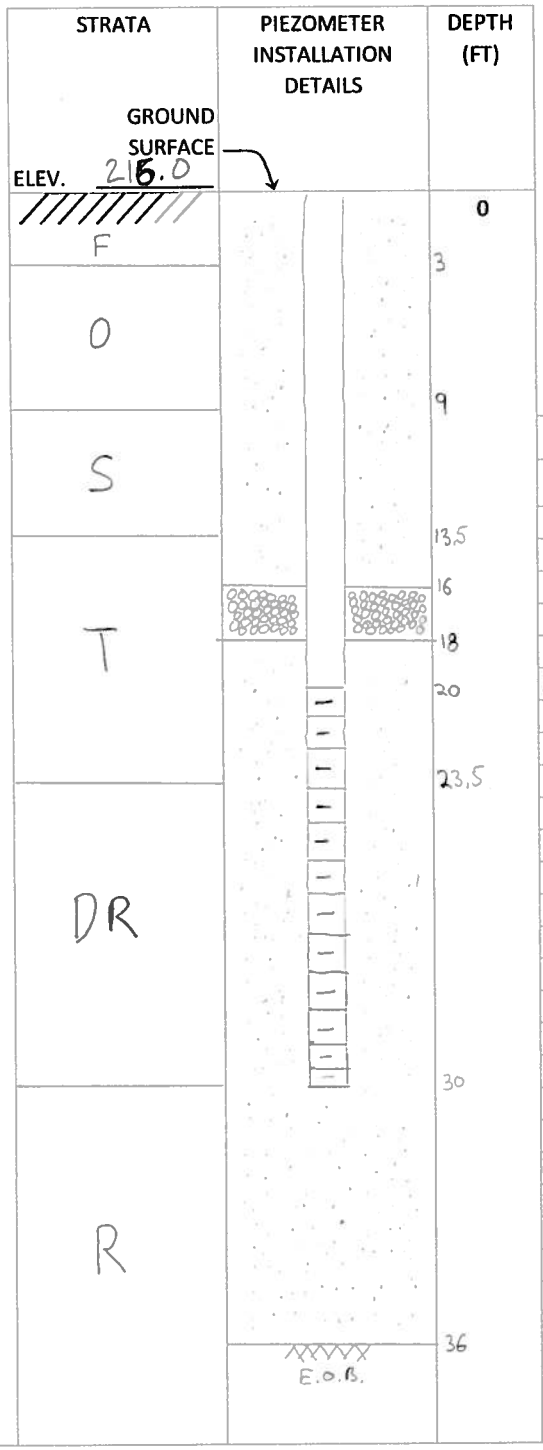
PIEZOMETER RECORD

PIEZOMETER OR BORING NO. B-8P
SHEET 3 OF 4
FILE NO. 12316
INSTALLATION DATE 10/14/14
RES ENGR. G. SMITH

PROJECT: WEST POST ROAD
LOCATION: WHITE PLAINS, NY
PIEZOMETER LOCATION: SFF BLP

☐ SEE SKETCH ON BACK



PIEZOMETER TYPE PVC SLOTTED PIPE

INTAKE POINT
depth to bottom, ft = 30
depth to top, ft = 18
length, ft = 12 = L
diameter, in = 4 , ft = 0.33 = 2R

STANDPIPE/RISER
elevation of rim, ft = 215.0
diameter, in = 2 , ft = 0.17 = 2r

READING TIME		DEPTH – RIM TO WATER	ELEVATION OF WATER	REMARKS
DATE	CLOCK			
10/15/14	13:30	3.50'	212.5	24HRS AFTER COMPL.
10/17/14	8:15	2.50'	213.5	
12/4/14	8:50	2.55	213.45	* BAILED WATER LEVEL TO A DEPTH OF 4.4
12/4/14	9:05	2.60	213.4	

SAND
GRAVEL
BENTONITE
GROUT

GROUND SURFACE ELEV. 216.0
PIEZOMETER NO. B-8P

MUESER RUTLEDGE CONSULTING ENGINEERS

BORING NO. B-8P
SHEET 4 **OF** 4

PROJECT WEST POST ROAD
FILE NO. 12316
LOCATION WHITE PLAINS, NEW YORK
SURFACE ELEV. 216.0
BORING LOCATION SEE BORING LOCATION PLAN
DATUM NGVD 29

BORING EQUIPMENT AND METHODS OF STABILIZING BOREHOLE

TYPE OF BORING RIG		TYPE OF FEED DURING CORING		CASING USED		X YES		NO		
TRUCK	CME-75	MECHANICAL		DIA., IN.	4	DEPTH, FT. FROM	0	TO	15	
SKID		HYDRAULIC	X	DIA., IN.		DEPTH, FT. FROM		TO		
BARGE		OTHER		DIA., IN.		DEPTH, FT. FROM		TO		
OTHER										

TYPE AND SIZE OF:					
D-SAMPLER	2" O. D. SPLIT SPOON	DRILLING MUD USED	X YES		NO
U-SAMPLER		DIAMETER OF ROTARY BIT, IN.	3-7/8		
S-SAMPLER		TYPE OF DRILLING MUD	REVERT		
CORE BARREL	NX DOUBLE BARREL	AUGER USED		YES	X NO
CORE BIT	NX DIAMOND BIT	TYPE AND DIAMETER, IN.			
DRILL RODS	NWJ				

*CASING HAMMER, LBS. 140 AVERAGE FALL, IN. 30
*SAMPLER HAMMER, LBS. 140 AVERAGE FALL, IN. 30
*USED AUTOMATIC HAMMER.

WATER LEVEL OBSERVATIONS IN BOREHOLE

DATE	TIME	DEPTH OF HOLE	DEPTH OF CASING	DEPTH TO WATER	CONDITIONS OF OBSERVATION
					SEE SHEET NO. 3

PIEZOMETER INSTALLED X YES NO SKETCH SHOWN ON SEE SHEET NO. 3

STANDPIPE:	TYPE	2" PVC	ID, IN.		LENGTH, FT.	20	TOP ELEV.	
INTAKE ELEMENT:	TYPE	0.10 SLOTTED PVC	OD, IN.	2	LENGTH, FT.	10	TIP ELEV.	
FILTER:	MATERIAL	SAND	OD, IN.	4	LENGTH, FT.	18	BOT. ELEV.	

PAY QUANTITIES

3.5" DIA. DRY SAMPLE BORING	LIN. FT.	31	NO. OF 3" SHELBY TUBE SAMPLES	
3.5" DIA. U-SAMPLE BORING	LIN. FT.		NO. OF 3" UNDISTURBED SAMPLES	
CORE DRILLING IN ROCK	LIN. FT.	5	OTHER:	

BORING CONTRACTOR CRAIG TEST BORING
DRILLER ED FLANAGAN HELPERS ANDY MACLEAN
REMARKS PIEZOMETER INSTALLED.
RESIDENT ENGINEER GEOFFREY SMITH DATE 10-14-14
CLASSIFICATION CHECK: CHERYL J. MOSS TYPING CHECK: CHERYL J. MOSS

MUESER RUTLEDGE CONSULTING ENGINEERS

BORING LOG

BORING NO. B-9
SHEET 1 OF 2
PROJECT: WEST POST ROAD **FILE NO.** 12316
LOCATION: WHITE PLAINS, NEW YORK **SURFACE ELEV.** 220.1
RES. ENGR. GEOFFREY SMITH

DAILY PROGRESS	SAMPLE NO.	SAMPLE DEPTH	SAMPLE BLOWS/6"	SAMPLE DESCRIPTION	STRATA	DEPTH	CASING BLOWS	REMARKS
09:30					**	0.5	DRILLED	**Asphalt from 0' to 0.5'.
10-14-14	1D	1.0	4-8	Brown fine to coarse sand, some silt, gravel			AHEAD	
Tuesday		3.0	13-13	(Fill) (SM)	F		4"	
Overcast	2D	3.0	13-8	Brown fine to coarse sand, some gravel, asphalt,				
60°F		5.0	5-4	trace silt (Fill) (SP-SM)		5		
						5.5		
	3NR	6.0	3-1	No recovery				
		8.0	1-2					
	4D	8.0	3-1	Soft brown organic silty clay, some peat, trace	O			3" Split spoon from 8'
		10.0	2-2	fine to medium sand, gravel (OH&Pt)		10		to 10'.
	5D	10.0	7-2	Top 7": Do 4D, trace wood (OH&Pt)		11		4D: WC=64
		12.0	3-3	Bot 7": Gray fine to medium sand, some silt,				4D: Odor.
				trace gravel (SM)				5D Top: WC=49
					S	15		
	6D	15.0	4-4	Gray gravel, trace gray brown fine to medium				REC=1"
		17.0	6-9	sand, silt (GP)				
								Possible
						18.5		boulder from 19' to 23'.
						20		
	7NR	20.0	100/0"	No recovery				
		20.0						
						25		
	8D	25.0	28-52	Gray fine to medium sand, some gravel, silt,				Rig chatter at 26'.
		27.0	57-44	trace coarse sand (SM)				
						30		
	9D	30.0	35-69	Do 8D (SM)	T			
		32.0	54-61					
						35		
	10D	35.0	30-37	Do 8D (SM)				
		37.0	41-52					
						40		
	11D	40.0	47-58	Do 8D (SM)				WC=Water Content
		41.2	100/2"					in percent of dry
								weight.
						43.5		
						45		
	12D	45.0	100/2"	Gray gravel in tip (GP)				
		45.2			DR			
						50		
12:00	13D	50.0	100/2"	Black & white fine to medium sand, some silt		50.2		WC=9
		50.2		(Decomposed Rock) (SM)				End of Boring at 50.2'.

MUESER RUTLEDGE CONSULTING ENGINEERS

BORING NO. B-9
SHEET 2 **OF** 2

PROJECT WEST POST ROAD
FILE NO. 12316
LOCATION WHITE PLAINS, NEW YORK
SURFACE ELEV. 220.1
BORING LOCATION SEE BORING LOCATION PLAN
DATUM NGVD 29

BORING EQUIPMENT AND METHODS OF STABILIZING BOREHOLE

TYPE OF BORING RIG		TYPE OF FEED DURING CORING		CASING USED					
TRUCK	CME-75	MECHANICAL		DIA., IN.	4	DEPTH, FT. FROM	0	TO	15
SKID		HYDRAULIC	X	DIA., IN.		DEPTH, FT. FROM		TO	
BARGE		OTHER		DIA., IN.		DEPTH, FT. FROM		TO	
OTHER									

CASING USED: [X] YES [ ] NO

TYPE AND SIZE OF:

D-SAMPLER	2" O. D. SPLIT SPOON
U-SAMPLER	
S-SAMPLER	
CORE BARREL	
CORE BIT	
DRILL RODS	NWJ

DRILLING MUD USED: [X] YES [ ] NO
DIAMETER OF ROTARY BIT, IN. 3-7/8
TYPE OF DRILLING MUD QUIK GEL

AUGER USED: [ ] YES [X] NO
TYPE AND DIAMETER, IN.

*CASING HAMMER, LBS. 140 AVERAGE FALL, IN. 30
*SAMPLER HAMMER, LBS. 140 AVERAGE FALL, IN. 30
*USED AUTOMATIC HAMMER.

WATER LEVEL OBSERVATIONS IN BOREHOLE

DATE	TIME	DEPTH OF HOLE	DEPTH OF CASING	DEPTH TO WATER	CONDITIONS OF OBSERVATION
					NO WATER LEVEL OBSERVATIONS MADE.

PIEZOMETER INSTALLED [ ] YES [X] NO SKETCH SHOWN ON

STANDPIPE:	TYPE		ID, IN.		LENGTH, FT.		TOP ELEV.
INTAKE ELEMENT:	TYPE		OD, IN.		LENGTH, FT.		TIP ELEV.
FILTER:	MATERIAL		OD, IN.		LENGTH, FT.		BOT. ELEV.

PAY QUANTITIES

3.5" DIA. DRY SAMPLE BORING	LIN. FT.	50.2	NO. OF 3" SHELBY TUBE SAMPLES	
3.5" DIA. U-SAMPLE BORING	LIN. FT.		NO. OF 3" UNDISTURBED SAMPLES	
CORE DRILLING IN ROCK	LIN. FT.		OTHER:	

BORING CONTRACTOR CRAIG TEST BORING
DRILLER JOE SCHUSTER HELPERS JOHN MILLINGTON
REMARKS
RESIDENT ENGINEER GEOFFREY SMITH DATE 10-14-14
CLASSIFICATION CHECK: CHERYL J. MOSS TYPING CHECK: CHERYL J. MOSS

MUESER RUTLEDGE CONSULTING ENGINEERS

BORING LOG

BORING NO. B-10
SHEET 1 OF 2
PROJECT: WEST POST ROAD **FILE NO.** 12316
LOCATION: WHITE PLAINS, NEW YORK **SURFACE ELEV.** 214.2
RES. ENGR. GEOFFREY SMITH

DAILY PROGRESS	SAMPLE NO.	SAMPLE DEPTH	SAMPLE BLOWS/6"	SAMPLE DESCRIPTION	STRATA	DEPTH	CASING BLOWS	REMARKS
07:00	1D	0.0	5-6	Brown fine to medium sand, some silt, trace			DRILLED	
10-15-14		2.0	6-7	coarse sand, gravel (SM)			AHEAD	
Wednesday	2D	2.0	7-7	Dark brown fine to coarse sand, some silt,	F		4"	
Overcast		4.0	7-9	gravel, brick (SM)				
65°F						5		
	3D	6.0	3-2	Soft dark brown organic silty clay, trace to some	O			WC=41
		8.0	9-21	fine to coarse sand (OH)		7.5		
	4D	8.0	14-9	Gray fine to medium sand, trace silt, coarse				4D-5D: Odor.
		10.0	7-7	sand, gravel (SP-SM)		10		
	5D	10.0	4-5	Gray fine to medium sand, trace silt, coarse				
		12.0	7-7	sand, shells (SP-SM)				
					T	15		
	6D	15.0	29-16	Gray gravelly fine to coarse sand, trace silt				
		17.0	29-20	(SP-SM)				
								Rig chatter from 18' to 20'.
						20		
	7D	20.0	15-15	Top 6": Do 6D		21		WC=7
		22.0	51-78	Bot 12": Brown fine to medium sand, some clayey silt (Decomposed Rock) (SM)				
						25		
	8D	25.0	8-6	Brown & orange fine to medium sand, some				WC=13
		26.2	100/2"	silt, trace rock fragments (Decomposed Rock)				REC=4"
				(SM)				
						30		
	9D	30.0	40-25	Brown & white fine to medium sand, some silt				WC=14
		32.0	26-27	(Decomposed Rock) (SM)				
						35		
	10D	35.0	35-38	Brown & white fine to medium sand, some silt	DR			REC=6"
		37.0	42-49	(Decomposed Rock) (SM)				
						40		
	11D	40.0	22-36	Blue & orange fine to medium sand, some silt				
		42.0	42-41	(Decomposed Rock) (SM)				WC=Water Content in percent of dry weight.
						45		
	12D	45.0	100/3"	Black & white fine to coarse sand, some silt				REC=3"
		45.3		(Decomposed Rock) (SM)				
						50		13D: REC=2"
09:15	13D	50.0	100/2"	Do 12D, trace rock fragments (Decomposed		50.2		End of Boring at 50.2'.
		50.2		Rock) (SM)				

MUESER RUTLEDGE CONSULTING ENGINEERS

BORING NO. B-10
SHEET 2 **OF** 2

PROJECT WEST POST ROAD
FILE NO. 12316
LOCATION WHITE PLAINS, NEW YORK
SURFACE ELEV. 214.2
BORING LOCATION SEE BORING LOCATION PLAN
DATUM NGVD 29

BORING EQUIPMENT AND METHODS OF STABILIZING BOREHOLE

TYPE OF BORING RIG		TYPE OF FEED DURING CORING		CASING USED					
TRUCK	CME-75	MECHANICAL		DIA., IN.	4	DEPTH, FT. FROM	0	TO	10
SKID		HYDRAULIC	X	DIA., IN.		DEPTH, FT. FROM		TO	
BARGE		OTHER		DIA., IN.		DEPTH, FT. FROM		TO	
OTHER									

[X] YES [ ] NO

TYPE AND SIZE OF:

D-SAMPLER 2" O. D. SPLIT SPOON
U-SAMPLER
S-SAMPLER
CORE BARREL
CORE BIT
DRILL RODS NWJ

DRILLING MUD USED [X] YES [ ] NO
DIAMETER OF ROTARY BIT, IN. 3-7/8
TYPE OF DRILLING MUD QUIK GEL

AUGER USED [ ] YES [X] NO
TYPE AND DIAMETER, IN.

*CASING HAMMER, LBS. 140 AVERAGE FALL, IN. 30
*SAMPLER HAMMER, LBS. 140 AVERAGE FALL, IN. 30
*USED AUTOMATIC HAMMER.

WATER LEVEL OBSERVATIONS IN BOREHOLE

DATE	TIME	DEPTH OF HOLE	DEPTH OF CASING	DEPTH TO WATER	CONDITIONS OF OBSERVATION
					NO WATER LEVEL OBSERVATIONS MADE.

PIEZOMETER INSTALLED [ ] YES [X] NO SKETCH SHOWN ON

STANDPIPE:	TYPE		ID, IN.		LENGTH, FT.	TOP ELEV.	
INTAKE ELEMENT:	TYPE		OD, IN.		LENGTH, FT.	TIP ELEV.	
FILTER:	MATERIAL		OD, IN.		LENGTH, FT.	BOT. ELEV.	

PAY QUANTITIES

3.5" DIA. DRY SAMPLE BORING	LIN. FT.	50.2	NO. OF 3" SHELBY TUBE SAMPLES	
3.5" DIA. U-SAMPLE BORING	LIN. FT.		NO. OF 3" UNDISTURBED SAMPLES	
CORE DRILLING IN ROCK	LIN. FT.		OTHER:	

BORING CONTRACTOR CRAIG TEST BORING
DRILLER JOE SCHUSTER HELPERS JOHN MILLINGTON
REMARKS
RESIDENT ENGINEER GEOFFREY SMITH DATE 10-15-14
CLASSIFICATION CHECK: CHERYL J. MOSS TYPING CHECK: CHERYL J. MOSS

MUESER RUTLEDGE CONSULTING ENGINEERS

BORING LOG

BORING NO. B-11
SHEET 1 OF 2
PROJECT: WEST POST ROAD **FILE NO.** 12316
LOCATION: WHITE PLAINS, NEW YORK **SURFACE ELEV.** 214.6
RES. ENGR. GEOFFREY SMITH

DAILY PROGRESS	SAMPLE NO.	SAMPLE DEPTH	SAMPLE BLOWS/6"	SAMPLE DESCRIPTION	STRATA	DEPTH	CASING BLOWS	REMARKS
09:30	1D	0.0	18-11	Brown fine to coarse sand, some gravel,			DRILLED	
10-15-14		2.0	8-9	concrete, trace silt (SP-SM)			AHEAD	
Wednesday	2D	2.0	16-12	Do 1D (SP-SM)	**F**		4"	
Overcast		4.0	5-8					
65°F						**5**		
	3D	6.0	3-2	Brown organic silty fine to coarse sand, trace	**O**			Odor.
		8.0	4-3	gravel, brick, metal (SC)		**8**		3D & 5D: REC=6"
	4D	8.0	4-2	Gray brown fine to medium sand, some organic	**S**			
		10.0	2-3	silt, trace gravel (SM)		**10**		
	5D	10.0	4-9	Gray brown fine to coarse sand, some silt,				
		12.0	7-6	gravel, trace clay (SM)				
						15		
	6D	15.0	9-12	Gray brown silty fine to medium sand, some				
		17.0	15-19	gravel, trace coarse sand (SM)				
						20		
	7D	20.0	17-29	Gray brown gravelly fine to medium sand, some				REC=5"
		22.0	45-60	silt, trace coarse sand (SM)				
						25		
	8D	25.0	25-37	Gray silty fine to medium sand, some gravel,				
		27.0	70-83	trace coarse sand (SM)	**T**			
						30		
	9D	30.0	55-65	Do 8D (SM)				
		32.0	68-79					
						35		
	10D	35.0	46-41	Do 8D (SM)				
		37.0	35-34					
						40		
	11D	40.0	20-100/2"	Do 8D (SM)				
		40.7						WC=Water Content
								in percent of dry
						43.5		weight.
						45		
	12D	45.0	100/3"	Black & white fine to coarse sand, trace silt				WC=11
		45.3		(Decomposed Rock) (SP-SM)	**DR**			REC=3"
						50		13D: WC=10, REC=3"
12:00	13D	50.0	100/3"	Do 12D (Decomposed Rock) (SP-SM)		**50.3**		End of Boring at 50.3'.
		50.3						

MUESER RUTLEDGE CONSULTING ENGINEERS

BORING NO. B-11
SHEET 2 **OF** 2

PROJECT WEST POST ROAD
FILE NO. 12316
LOCATION WHITE PLAINS, NEW YORK
SURFACE ELEV. 214.6
BORING LOCATION SEE BORING LOCATION PLAN
DATUM NGVD 29

BORING EQUIPMENT AND METHODS OF STABILIZING BOREHOLE

TYPE OF BORING RIG		TYPE OF FEED DURING CORING		CASING USED		X YES		NO		
TRUCK	CME-75	MECHANICAL		DIA., IN.	4	DEPTH, FT. FROM	0	TO	20	
SKID		HYDRAULIC	X	DIA., IN.		DEPTH, FT. FROM		TO		
BARGE		OTHER		DIA., IN.		DEPTH, FT. FROM		TO		
OTHER										

TYPE AND SIZE OF:

D-SAMPLER 2" O. D. SPLIT SPOON
U-SAMPLER
S-SAMPLER
CORE BARREL
CORE BIT
DRILL RODS NWJ

DRILLING MUD USED X YES NO
DIAMETER OF ROTARY BIT, IN. 3-7/8
TYPE OF DRILLING MUD QUIK GEL

AUGER USED YES X NO
TYPE AND DIAMETER, IN.

*CASING HAMMER, LBS. 140 AVERAGE FALL, IN. 30
*SAMPLER HAMMER, LBS. 140 AVERAGE FALL, IN. 30
*USED AUTOMATIC HAMMER.

WATER LEVEL OBSERVATIONS IN BOREHOLE

DATE	TIME	DEPTH OF HOLE	DEPTH OF CASING	DEPTH TO WATER	CONDITIONS OF OBSERVATION
					NO WATER LEVEL OBSERVATIONS MADE.

PIEZOMETER INSTALLED YES X NO SKETCH SHOWN ON

STANDPIPE:	TYPE		ID, IN.		LENGTH, FT.		TOP ELEV.		
INTAKE ELEMENT:	TYPE		OD, IN.		LENGTH, FT.		TIP ELEV.		
FILTER:	MATERIAL		OD, IN.		LENGTH, FT.		BOT. ELEV.		

PAY QUANTITIES

3.5" DIA. DRY SAMPLE BORING	LIN. FT.	50.3	NO. OF 3" SHELBY TUBE SAMPLES	
3.5" DIA. U-SAMPLE BORING	LIN. FT.		NO. OF 3" UNDISTURBED SAMPLES	
CORE DRILLING IN ROCK	LIN. FT.		OTHER:	

BORING CONTRACTOR CRAIG TEST BORING
DRILLER ED FLANAGAN HELPERS ANDY MACLEAN
REMARKS
RESIDENT ENGINEER GEOFFREY SMITH DATE 10-15-14
CLASSIFICATION CHECK: CHERYL J. MOSS TYPING CHECK: CHERYL J. MOSS

MUESER RUTLEDGE CONSULTING ENGINEERS

BORING LOG

BORING NO. B-12
SHEET 1 OF 2
PROJECT: WEST POST ROAD **FILE NO.** 12316
LOCATION: WHITE PLAINS, NEW YORK **SURFACE ELEV.** 218.2
RES. ENGR. GEOFFREY SMITH

DAILY PROGRESS	SAMPLE NO.	SAMPLE DEPTH	SAMPLE BLOWS/6"	SAMPLE DESCRIPTION	STRATA	DEPTH	CASING BLOWS	REMARKS
07:00					**	0.5	DRILLED	**Asphalt from 0' to 0.5'.
10-15-14	1D	1.0	22-15	Brown fine to medium sand, some silt, trace			AHEAD	1D: REC=3"
Wednesday		3.0	13-9	gravel (SM)	F		4"	
Overcast	2D	3.0	8-5	Brown silty fine sand (SM)				REC=4"
65°F		5.0	4-3			5		
					O			
	3D	6.0	1-1	Brown organic silt, trace fine sand (OL)				WC=60
		8.0	1-2			8		
	4D	8.0	3-2	Gray fine to medium sand, some silt, trace				
		10.0	4-3	vegetation (SM)		10		
	5D	10.0	3-5	Brown gray fine to coarse sand, some gravel,				REC=6"
		12.0	7-4	silt, trace clay (SM)				
					S	15		
	6D	15.0	4-6	Do 5D (SM)				
		17.0	4-8					
						20		
	7D	20.0	19-40	Top 8": Do 5D (SM)		20.8		
		22.0	67-58	Bot 8": Gray decomposed to weathered boulder	BLDR			
						23.5		
						25		
	8D	25.0	24-27	Brown gray fine to coarse sand, some silt,				
		27.0	27-23	gravel (SM)				
								Rig chatter at 29'.
						30		
	9D	30.0	30-42	Brown gray gravel, some fine to coarse sand,				
		32.0	70-65	silt (GM)				
								Rig chatter at 34'.
						35		
	10D	35.0	100/2"	Brown gray gravelly fine to coarse sand, some				REC=3"
		35.2		silt (SM)	T			
						40		
	11D	40.0	90-100/3"	Do 10D (SM)				REC=6"
		40.8						
								WC=Water Content
								in percent of dry
						45		weight.
	12D	45.0	100/5"	Brown gray fine to coarse sandy gravel, some				REC=4"
		45.4		silt (GM)				
						48.5		
					DR	50		
09:15								
	13D	50.0	100/3"	Gray & white fine to coarse sand, some rock		50.3		
		50.3		fragments, silt, trace clay (SM)				End of Boring at 50.3'.

MUESER RUTLEDGE CONSULTING ENGINEERS

BORING NO. B-12
SHEET 2 **OF** 2

PROJECT WEST POST ROAD
FILE NO. 12316
LOCATION WHITE PLAINS, NEW YORK
SURFACE ELEV. 218.2
BORING LOCATION SEE BORING LOCATION PLAN
DATUM NGVD 29

BORING EQUIPMENT AND METHODS OF STABILIZING BOREHOLE

TYPE OF BORING RIG		TYPE OF FEED DURING CORING		CASING USED					
TRUCK	CME-75	MECHANICAL		DIA., IN.	4	DEPTH, FT. FROM	0	TO	15
SKID		HYDRAULIC	X	DIA., IN.		DEPTH, FT. FROM		TO	
BARGE		OTHER		DIA., IN.		DEPTH, FT. FROM		TO	
OTHER									

CASING USED: [X] YES [ ] NO

TYPE AND SIZE OF:

D-SAMPLER	2" O. D. SPLIT SPOON
U-SAMPLER	
S-SAMPLER	
CORE BARREL	
CORE BIT	
DRILL RODS	NWJ

DRILLING MUD USED: [X] YES [ ] NO
DIAMETER OF ROTARY BIT, IN. 3-7/8
TYPE OF DRILLING MUD QUIK GEL

AUGER USED: [ ] YES [X] NO
TYPE AND DIAMETER, IN.

*CASING HAMMER, LBS. 140 AVERAGE FALL, IN. 30
*SAMPLER HAMMER, LBS. 140 AVERAGE FALL, IN. 30
*USED AUTOMATIC HAMMER.

WATER LEVEL OBSERVATIONS IN BOREHOLE

DATE	TIME	DEPTH OF HOLE	DEPTH OF CASING	DEPTH TO WATER	CONDITIONS OF OBSERVATION
					NO WATER LEVEL OBSERVATIONS MADE.

PIEZOMETER INSTALLED [ ] YES [X] NO SKETCH SHOWN ON

STANDPIPE:	TYPE		ID, IN.		LENGTH, FT.		TOP ELEV.
INTAKE ELEMENT:	TYPE		OD, IN.		LENGTH, FT.		TIP ELEV.
FILTER:	MATERIAL		OD, IN.		LENGTH, FT.		BOT. ELEV.

PAY QUANTITIES

3.5" DIA. DRY SAMPLE BORING	LIN. FT.	50.3	NO. OF 3" SHELBY TUBE SAMPLES	
3.5" DIA. U-SAMPLE BORING	LIN. FT.		NO. OF 3" UNDISTURBED SAMPLES	
CORE DRILLING IN ROCK	LIN. FT.		OTHER:	

BORING CONTRACTOR CRAIG TEST BORING
DRILLER ED FLANAGAN HELPERS ANDY MACLEAN
REMARKS
RESIDENT ENGINEER GEOFFREY SMITH DATE 10-15-14
CLASSIFICATION CHECK: CHERYL J. MOSS TYPING CHECK: CHERYL J. MOSS

MUESER RUTLEDGE CONSULTING ENGINEERS

BORING LOG

BORING NO. B-13P
SHEET 1 OF 4
PROJECT: WEST POST ROAD **FILE NO.** 12316
LOCATION: WHITE PLAINS, NEW YORK **SURFACE ELEV.** 213.5
RES. ENGR. GEOFFREY SMITH

DAILY PROGRESS	SAMPLE NO.	SAMPLE DEPTH	SAMPLE BLOWS/6"	SAMPLE DESCRIPTION	STRATA	DEPTH	CASING BLOWS	REMARKS
07:00					**	0.5	DRILLED	**Asphalt from 0' to 0.5'.
10-17-14	1D	1.0	15-9	Brown fine to coarse sand, some gravel, silt	F		AHEAD	REC=6"
Friday		3.0	7-3	(SM)		3	4"	
Clear	2D	3.0	2-2	Brown clayey fine to medium sand, trace gravel				
60°F		5.0	2-2	(SC)		5		
	3D	6.0	4-4	Do 2D (SC)				REC=6"
		8.0	3-5					
	4D	8.0	2-4	Brown fine to medium sand, trace silt, gravel,	S			
		10.0	8-14	coarse sand (SP-SM)		10		
	5D	10.0	3-5	Gray silt, trace clay, gravel (ML)				WC=25
		12.0	4-2					
						13.5		
						15		
	6D	15.0	15-9	Gray fine to coarse sand, some silt, trace gravel				REC=6"
		17.0	12-16	(SM)				
						20		
	7D	20.0	15-22	Gray fine to coarse sand, some gravel, trace	T			
		22.0	13-9	silt (SP-SM)				
						25		
	8D	25.0	9-11	Do 7D (SP-SM)				REC=4"
		27.0	13-10					
						28.5		
						30		
	9D	30.0	35-100/5"	Blue & orange fine sand, some silt				WC=20
		30.9		(Decomposed Rock) (SM)				
						35		
	10D	35.0	48-75	Black & orange fine to medium sand, some				WC=20
		36.4	100/5"	silt, trace coarse sand (Decomposed Rock)				REC=6"
				(SM)				
					DR	40		
	11D	40.0	67-100/4"	Do 10D (Decomposed Rock) (SM)				WC=16
		40.8						REC=6"
						45		WC=Water Content
	12D	45.0	100/3"	Do 10D (Decomposed Rock) (SM)				in percent of dry
		45.3						weight.
						50		
09:15								
	13D	50.0	100/2"	Do 10D (Decomposed Rock) (SM)		50.2		WC=7, REC=2"
		50.2						End of Boring at 50.2'.

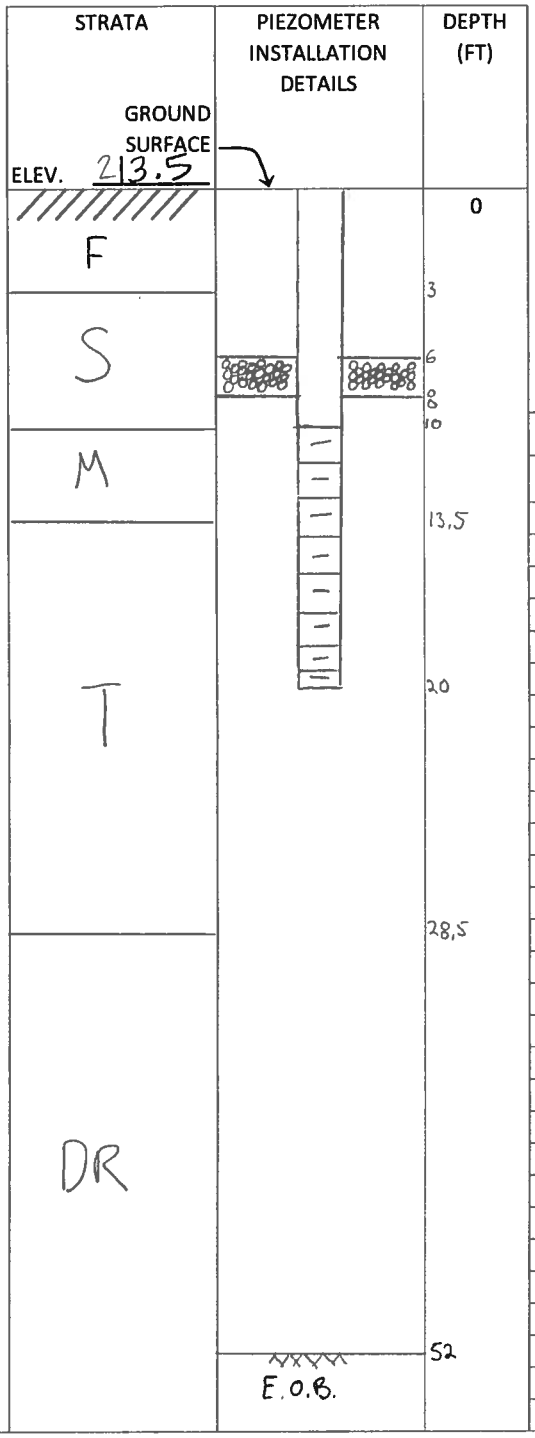
Mueser Rutledge Consulting Engineers
14 Penn Plaza - 225 West 34th Street
New York, NY 10122
T: 917 339-9300 F: 917 339-9400
www.mrce.com

PIEZOMETER RECORD

PIEZOMETER OR BORING NO. B-13P
SHEET 2 OF 4
FILE NO. 12316
INSTALLATION DATE 10/17/14
RES ENGR. G. SMITH

PROJECT: WEST POST ROAD
LOCATION: WHITE PLAINS, NY
PIEZOMETER LOCATION: SEE BORING LOCATION PLAN

☐ SEE SKETCH ON BACK



PIEZOMETER TYPE PVC SLOTTED PIPE

INTAKE POINT
depth to bottom, ft = 20
depth to top, ft = 8
length, ft = 12 = L
diameter, in = 4, ft = 0.33 = 2R

STANDPIPE/RISER
elevation of rim, ft = 213.5
diameter, in = 2, ft = 0.17 = 2r

READING TIME		DEPTH – RIM TO WATER	ELEVATION OF WATER	REMARKS
DATE	CLOCK			
12/4/14	09:40	5.25	208.25	* BAILED WATER LEVEL TO A DEPTH OF 10 FT. AND RAN A RISING HEAD TEST.
12/4/14	10:15	8.00	205.5	* BELIEVED TO BE CLOGGED AROUND 12.4 FT BELOW RIM

SAND
GRAVEL
BENTONITE
GROUT

GROUND SURFACE ELEV. 213.5
PIEZOMETER NO. B-13P

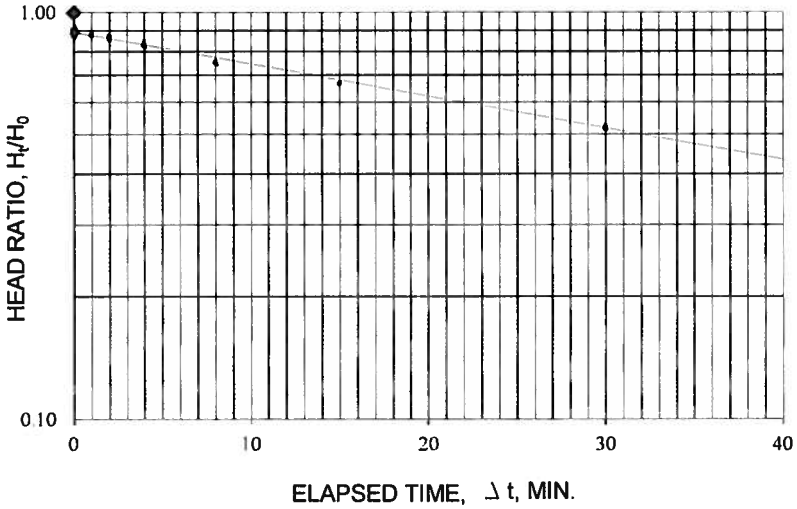
Mueser Rutledge Consulting Engineers
14 Penn Plaza - 225 West 34th Street
New York, NY 10122
T: 917 339-9300 F: 917 339-9400
www.mrce.com

VARIABLE HEAD PERMEABILITY TEST

☐ BOREHOLE OR ☒ PIEZOMETER NO. B-13P

PROJECT: WEST POST ROAD
LOCATION: WHITE PLAINS, NY
PIEZOMETER LOCATION: SEE BLP

SHEET 3 OF 4
FILE NO. 12316
TEST NO. 1
RES ENGR. G. SMITH
CALC. BY GMS DATE 12/4/14
CH'KD BY ____ DATE ____



INTAKE POINT
depth to bottom, ft = 20
depth to top, ft = 8
length, ft = 12 = L
diameter, in = 4, ft = 0.33 = 2R

STANDPIPE/RISER
elevation of rim, ft = 212.5
diameter, in = 2, ft = 0.17 = 2r

depth of casing, ft = -

depth to which stand-pipe was bailed, ft = 10 = Z

READING TIME			ORIGINAL TEST DEPTH, H_0 (ft.)	DEPTH AT TIME t, H_t (ft.)	UNBALANCED HEAD $\Delta H_t = H_t - H_0$ (ft.)	HEAD RATIO $\Delta H_t/\Delta H_0$	REMARKS
DATE	CLOCK	Δt MIN.					
12/4/14	9:45	0	5.25	10	4.75	10.90	RISING HEAD
	9:46	1		9.9	4.65	0.89	TEST
	9:47	2		9.8	4.55	0.87	
	9:49	4		9.6	4.35	0.83	
	9:53	8		9.2	3.95	0.75	
	10:00	15		8.8	3.55	0.68	
	10:15	30		8.0	2.75	0.52	

PIEZOMETER NO. B-13P

MUESER RUTLEDGE CONSULTING ENGINEERS

BORING NO. B-13P
SHEET 4 **OF** 4

PROJECT WEST POST ROAD
FILE NO. 12316
LOCATION WHITE PLAINS, NEW YORK
SURFACE ELEV. 213.5
BORING LOCATION SEE BORING LOCATION PLAN
DATUM NGVD 29

BORING EQUIPMENT AND METHODS OF STABILIZING BOREHOLE

TYPE OF BORING RIG		TYPE OF FEED DURING CORING		CASING USED					
TRUCK	CME-75	MECHANICAL		DIA., IN.	4	DEPTH, FT. FROM	0	TO	20
SKID		HYDRAULIC	X	DIA., IN.		DEPTH, FT. FROM		TO	
BARGE		OTHER		DIA., IN.		DEPTH, FT. FROM		TO	
OTHER									

CASING USED: [X] YES [ ] NO

TYPE AND SIZE OF:

D-SAMPLER	2" O. D. SPLIT SPOON
U-SAMPLER	
S-SAMPLER	
CORE BARREL	
CORE BIT	
DRILL RODS	NWJ

DRILLING MUD USED: [X] YES [ ] NO
DIAMETER OF ROTARY BIT, IN. 3-7/8
TYPE OF DRILLING MUD REVERT

AUGER USED: [ ] YES [X] NO
TYPE AND DIAMETER, IN.

*CASING HAMMER, LBS. 140 AVERAGE FALL, IN. 30
*SAMPLER HAMMER, LBS. 140 AVERAGE FALL, IN. 30
*USED AUTOMATIC HAMMER.

WATER LEVEL OBSERVATIONS IN BOREHOLE

DATE	TIME	DEPTH OF HOLE	DEPTH OF CASING	DEPTH TO WATER	CONDITIONS OF OBSERVATION
					SEE SHEET NO. 2

PIEZOMETER INSTALLED [X] YES [ ] NO SKETCH SHOWN ON SEE SHEET NO. 2

STANDPIPE:	TYPE	2" PVC	ID, IN.		LENGTH, FT.	10	TOP ELEV.		
INTAKE ELEMENT:	TYPE	0.10 SLOTTED PVC	OD, IN.	2	LENGTH, FT.	10	TIP ELEV.		
FILTER:	MATERIAL	SAND	OD, IN.	4	LENGTH, FT.	44	BOT. ELEV.		

PAY QUANTITIES

3.5" DIA. DRY SAMPLE BORING	LIN. FT.	50.2	NO. OF 3" SHELBY TUBE SAMPLES	
3.5" DIA. U-SAMPLE BORING	LIN. FT.		NO. OF 3" UNDISTURBED SAMPLES	
CORE DRILLING IN ROCK	LIN. FT.		OTHER:	

BORING CONTRACTOR CRAIG TEST BORING
DRILLER ED FLANAGAN HELPERS ANDY MACLEAN
REMARKS PIEZOMETER INSTALLED.
RESIDENT ENGINEER GEOFFREY SMITH DATE 10-17-14
CLASSIFICATION CHECK: CHERYL J. MOSS TYPING CHECK: CHERYL J. MOSS

MUESER RUTLEDGE CONSULTING ENGINEERS

BORING LOG

BORING NO. B-14
SHEET 1 OF 2
PROJECT: WEST POST ROAD **FILE NO.** 12316
LOCATION: WHITE PLAINS, NEW YORK **SURFACE ELEV.** 214.4
RES. ENGR. GEOFFREY SMITH

DAILY PROGRESS	SAMPLE NO.	SAMPLE DEPTH	SAMPLE BLOWS/6"	SAMPLE DESCRIPTION	STRATA	DEPTH	CASING BLOWS	REMARKS
09:30					**	0.5	DRILLED	**Asphalt from 0' to 0.5'.
10-17-14	1D	1.0	6-4	Brown fine to coarse sand, some gravel, silt	F		AHEAD	
Friday		3.0	3-4	(SM)		3	4"	
Clear	2D	3.0	1/18"	Brown silty clay, some fine to medium sand				
60°F		5.0	2	seams, trace gravel (CL&SC)		5		
	3D	6.0	2-2	Brown fine to medium sand, some silt, trace	S			
		8.0	5-4	coarse sand, gravel (SM)				
	4D	8.0	3-5	Top 12": Brn clayey f-m sand, tr c sand, gvl (SC)				
		10.0	10-9	Bot 12": Brn f-c sand, tr silt, gravel (SP-SM)		10		
	5D	10.0	2-6	Gray fine to medium sand, some silt, gravel				Rig chatter at 11'.
		12.0	4-3	(SM)				REC=6"
						15		
	6D	15.0	20-27	Gray fine to medium sand, some gravel, silt				
		17.0	33-37	(SM)				
					T			
						20		
	7D	20.0	7-17	Do 6D (SM)				
		22.0	17-21					WC=Water Content
								in percent of dry
								weight.
						25		
	8D	25.0	22-15	Top 8": Do 6D (SM)		26		
		27.0	16-17	Bot 8": Orange & black & white fine to medium				8D Bot: WC=16
				sand, some silt, trace clay (SM)				
						30		
	9D	30.0	100/5"	Black & white fine to coarse sand, trace silt,				WC=10
		30.5		rock fragments (Decomposed Rock) (SP-SM)				REC=5"
						35		
	10D	35.0	26-100/4"	Black & white & orange fine to coarse sand,				WC=8
		35.8		some silt (Decomposed Rock) (SM)				REC=6"
					DR			
						40		
	11D	40.0	63-100/5"	Black & white & orange fine to medium sand,				WC=14
		40.9		some silt (Decomposed Rock) (SM)				REC=6"
						45		
	12D	45.0	100/3"	Black & white fine to medium sand, trace silt,				WC=15
		45.3		rock fragments (Decomposed Rock) (SP-SM)				REC=3"
						50		
12:00	13D	50.0	100/3"	Do 12D (Decomposed Rock) (SP-SM)		50.3		WC=10, REC=3"
		50.3						End of Boring at 50.3'.

MUESER RUTLEDGE CONSULTING ENGINEERS

BORING NO. B-14
SHEET 2 **OF** 2

PROJECT WEST POST ROAD
FILE NO. 12316
LOCATION WHITE PLAINS, NEW YORK
SURFACE ELEV. 214.4
BORING LOCATION SEE BORING LOCATION PLAN
DATUM NGVD 29

BORING EQUIPMENT AND METHODS OF STABILIZING BOREHOLE

TYPE OF BORING RIG		TYPE OF FEED DURING CORING		CASING USED					
TRUCK	CME-75	MECHANICAL		DIA., IN.	4	DEPTH, FT. FROM	0	TO	20
SKID		HYDRAULIC	X	DIA., IN.		DEPTH, FT. FROM		TO	
BARGE		OTHER		DIA., IN.		DEPTH, FT. FROM		TO	
OTHER									

CASING USED: [X] YES [ ] NO

TYPE AND SIZE OF:

D-SAMPLER	2" O. D. SPLIT SPOON
U-SAMPLER	
S-SAMPLER	
CORE BARREL	
CORE BIT	
DRILL RODS	NWJ

DRILLING MUD USED: [X] YES [ ] NO
DIAMETER OF ROTARY BIT, IN. 3-7/8
TYPE OF DRILLING MUD QUIK GEL

AUGER USED: [ ] YES [X] NO
TYPE AND DIAMETER, IN.

*CASING HAMMER, LBS. 140 AVERAGE FALL, IN. 30
*SAMPLER HAMMER, LBS. 140 AVERAGE FALL, IN. 30
*USED AUTOMATIC HAMMER.

WATER LEVEL OBSERVATIONS IN BOREHOLE

DATE	TIME	DEPTH OF HOLE	DEPTH OF CASING	DEPTH TO WATER	CONDITIONS OF OBSERVATION
					NO WATER LEVEL OBSERVATIONS MADE.

PIEZOMETER INSTALLED [ ] YES [X] NO SKETCH SHOWN ON

STANDPIPE:	TYPE		ID, IN.		LENGTH, FT.	TOP ELEV.	
INTAKE ELEMENT:	TYPE		OD, IN.		LENGTH, FT.	TIP ELEV.	
FILTER:	MATERIAL		OD, IN.		LENGTH, FT.	BOT. ELEV.	

PAY QUANTITIES

3.5" DIA. DRY SAMPLE BORING	LIN. FT.	50.3	NO. OF 3" SHELBY TUBE SAMPLES	
3.5" DIA. U-SAMPLE BORING	LIN. FT.		NO. OF 3" UNDISTURBED SAMPLES	
CORE DRILLING IN ROCK	LIN. FT.		OTHER:	

BORING CONTRACTOR CRAIG TEST BORING
DRILLER ED FLANAGAN HELPERS ANDY MACLEAN
REMARKS
RESIDENT ENGINEER GEOFFREY SMITH DATE 10-17-14
CLASSIFICATION CHECK: CHERYL J. MOSS TYPING CHECK: CHERYL J. MOSS

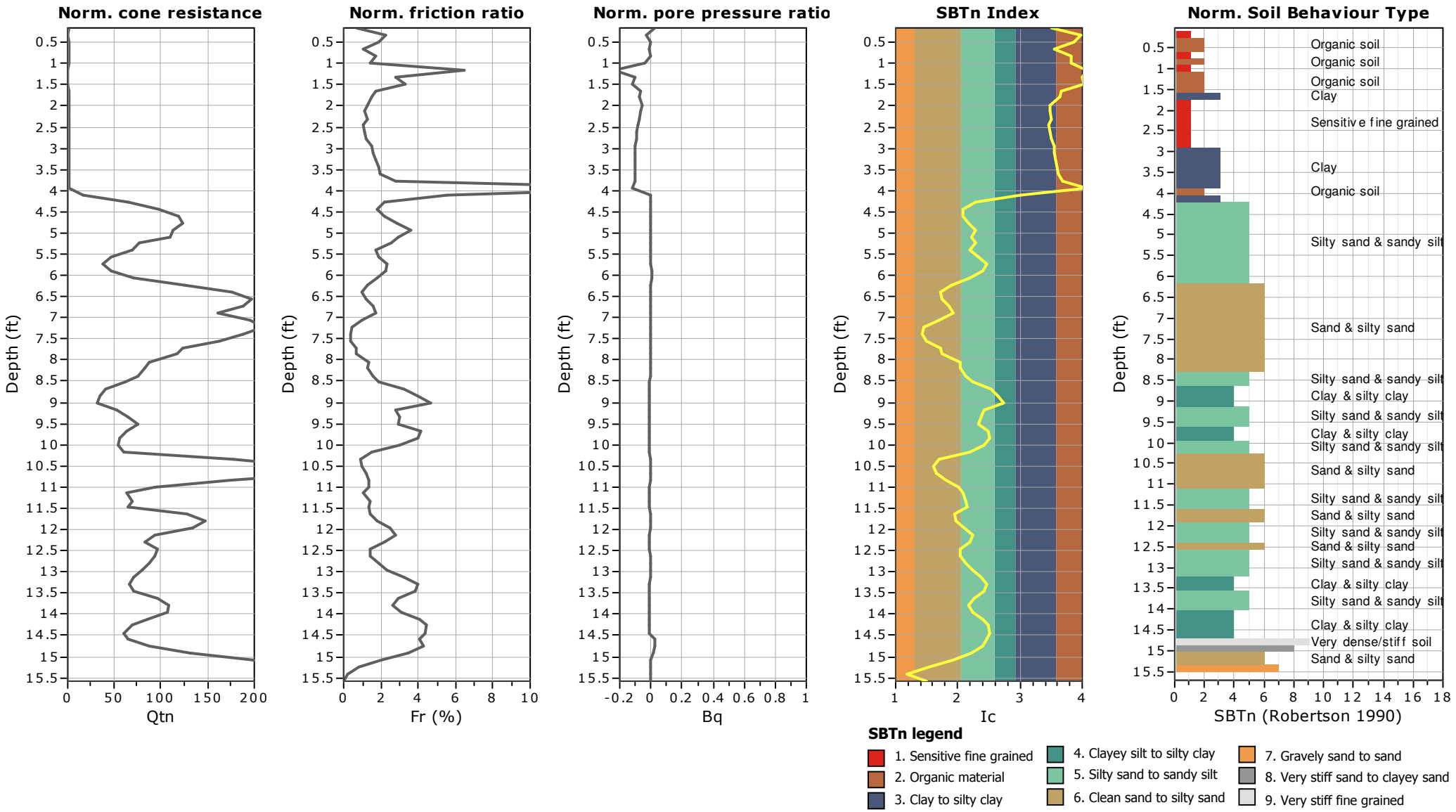
APPENDIX B

CPT DATA

Craig Test Boring Co., Inc.
5435 Harding Hwy
Mays Landing NJ
www.craigtest.com

Project:
Location:

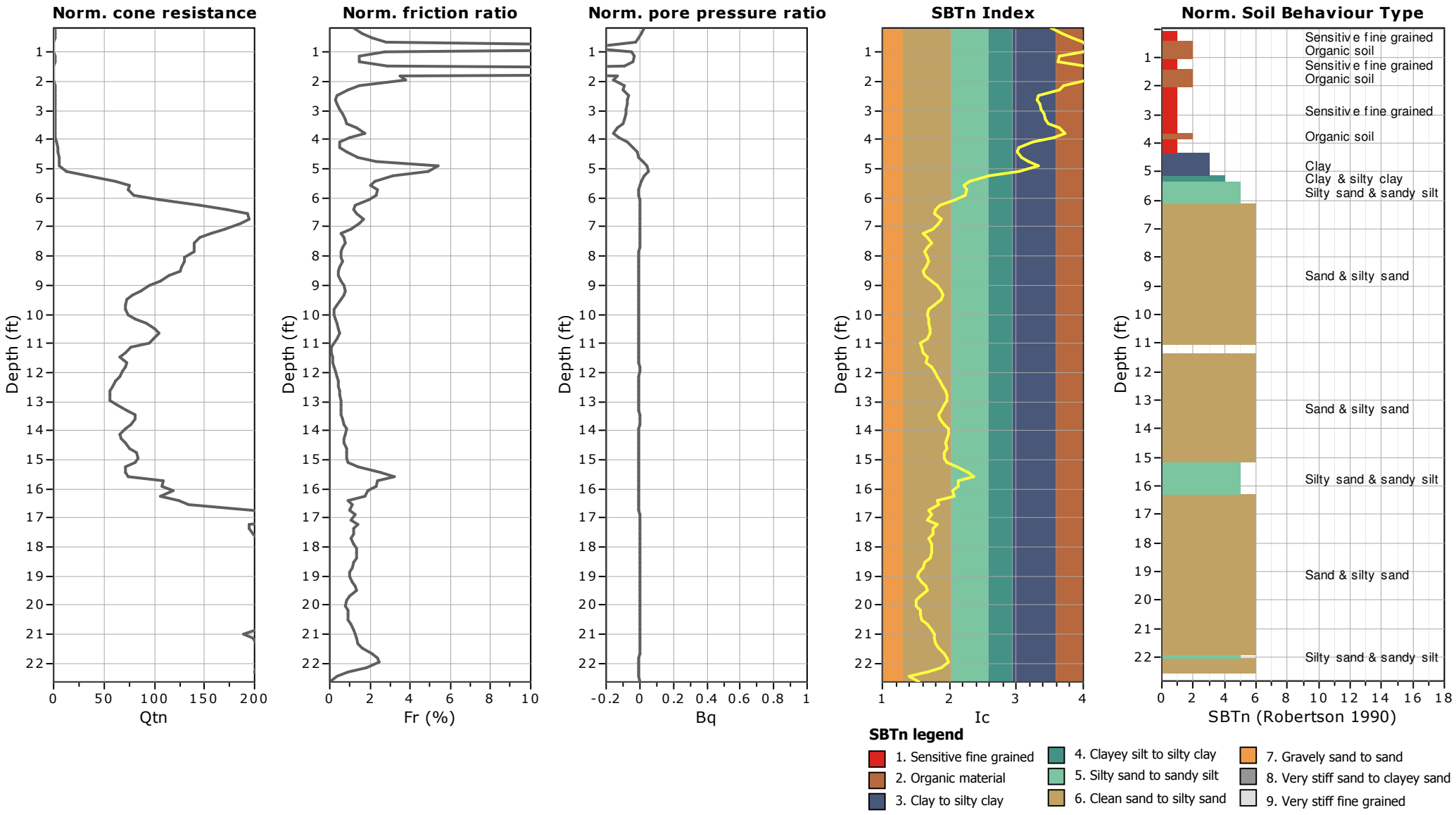
CPT: In-Situ CPT-1
Total depth: 15.58 ft, Date: 2/9/2015
Surface Elevation: 0.00 ft
Coords: X:0.00, Y:0.00
Cone Type: Uknown
Cone Operator: Uknown



Craig Test Boring Co., Inc.
5435 Harding Hwy
Mays Landing NJ
www.craigtest.com

Project:
Location:

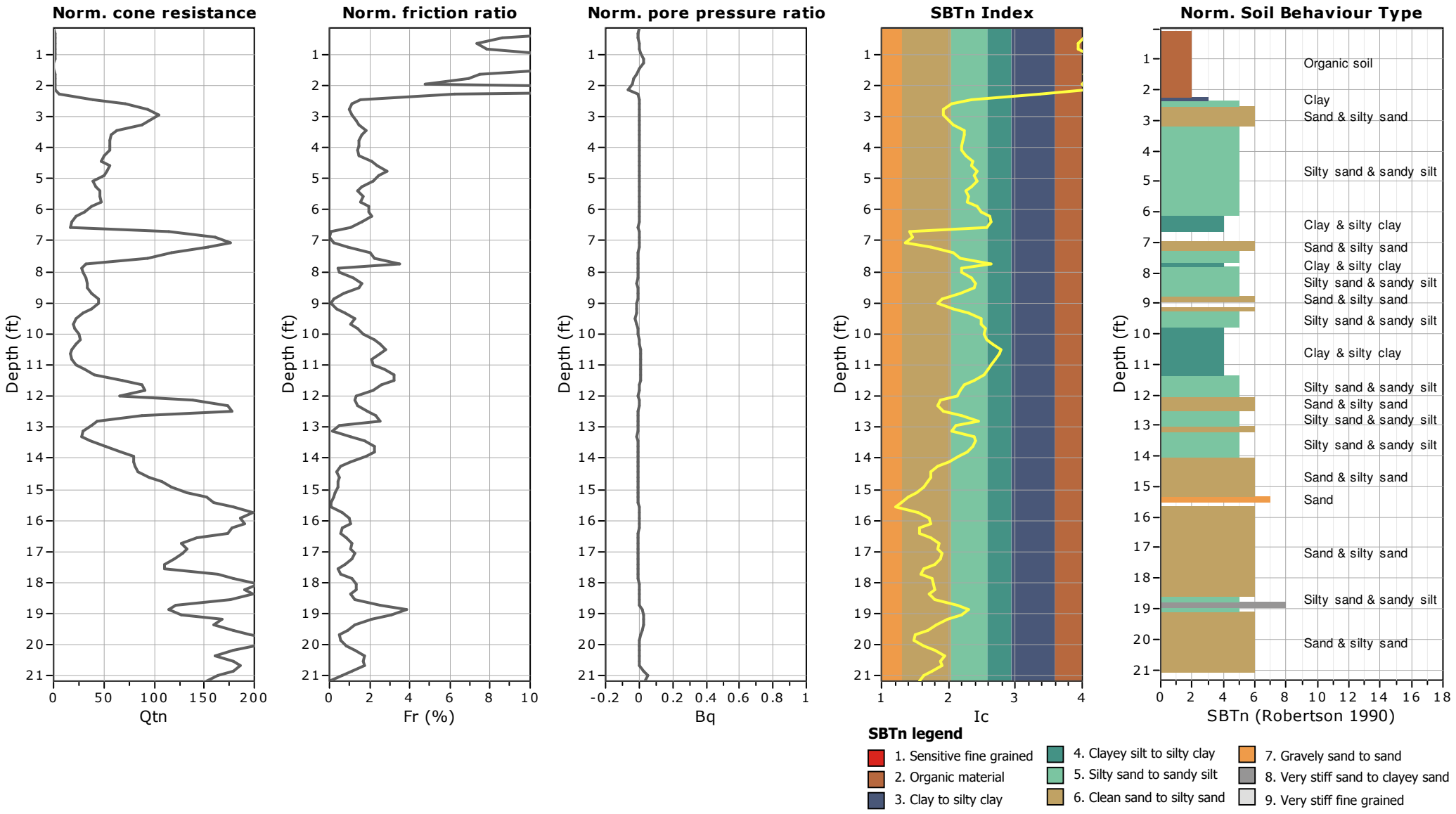
CPT: In-Situ CPT-4
Total depth: 22.64 ft, Date: 2/9/2015
Surface Elevation: 0.00 ft
Coords: X:0.00, Y:0.00
Cone Type: Uknown
Cone Operator: Uknown



Craig Test Boring Co., Inc.
5435 Harding Hwy
Mays Landing NJ
www.craigtest.com

Project:
Location:

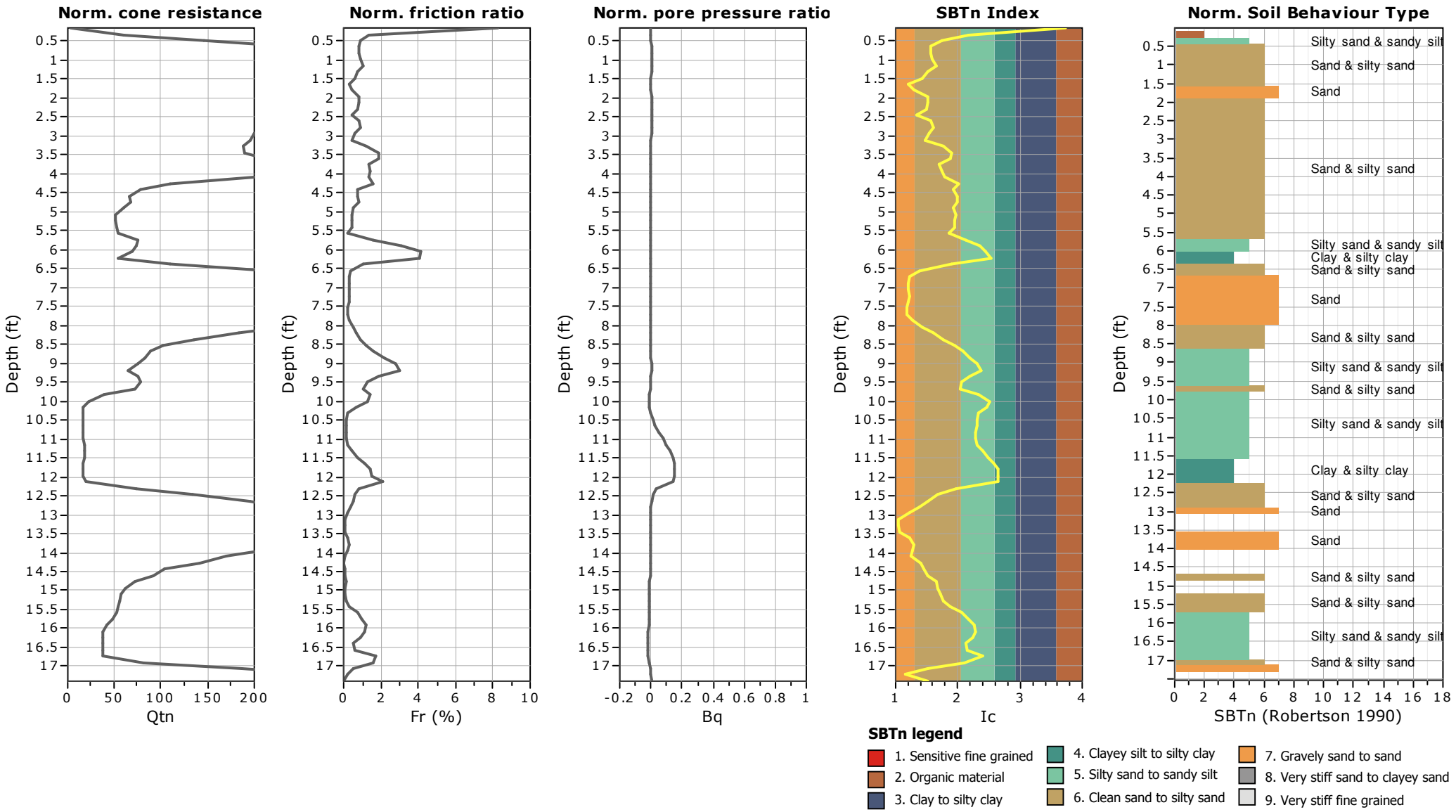
CPT: In-Situ CPT-5
Total depth: 21.16 ft, Date: 2/9/2015
Surface Elevation: 0.00 ft
Coords: X:0.00, Y:0.00
Cone Type: Uknown
Cone Operator: Uknown



Craig Test Boring Co., Inc.
5435 Harding Hwy
Mays Landing NJ
www.craigtest.com

Project:
Location:

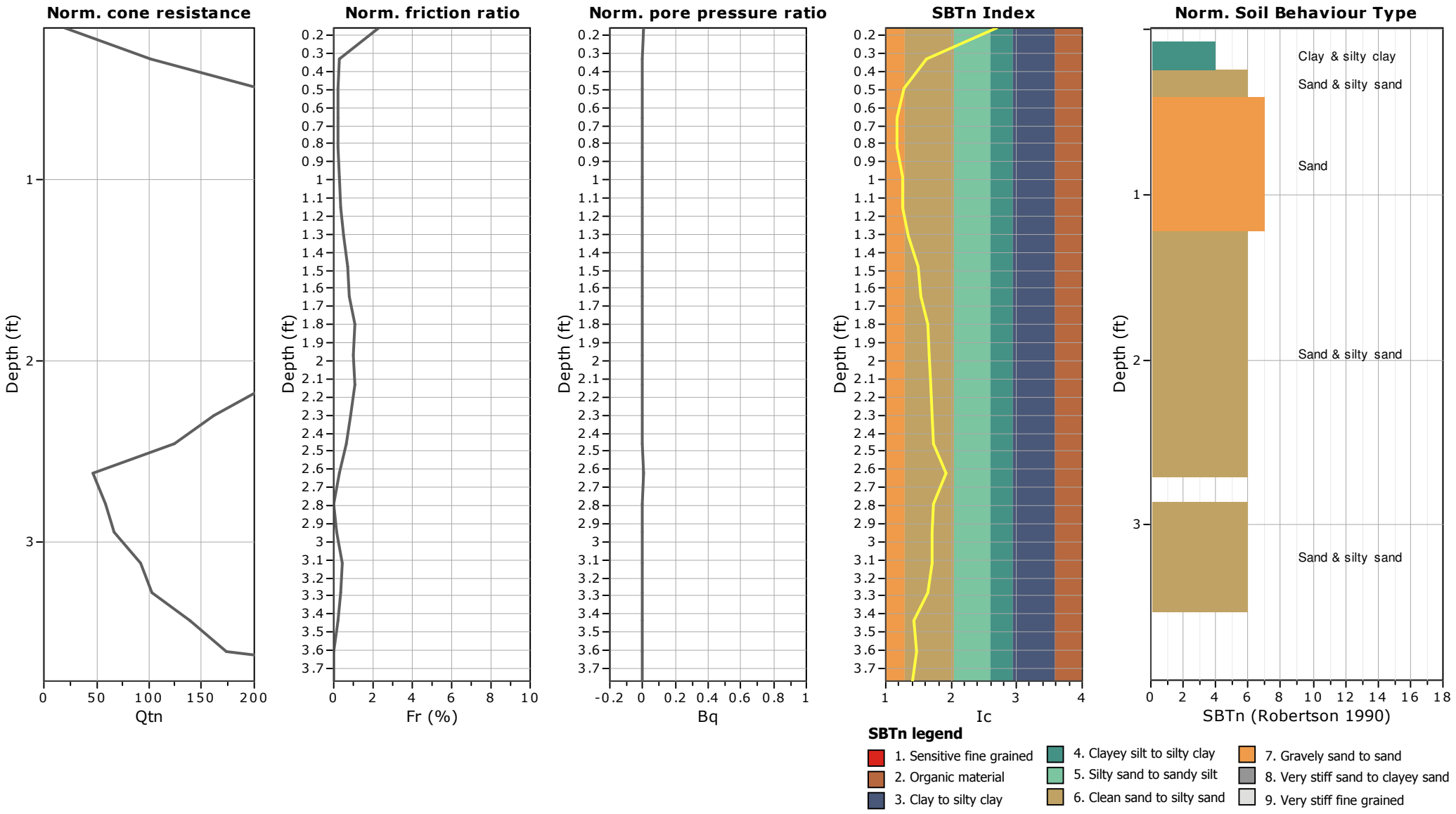
CPT: In-Situ CPT-6
Total depth: 17.39 ft, Date: 2/9/2015
Surface Elevation: 0.00 ft
Coords: X:0.00, Y:0.00
Cone Type: Uknown
Cone Operator: Uknown



Craig Test Boring Co., Inc.
5435 Harding Hwy
Mays Landing NJ
www.craigtest.com

Project:
Location:

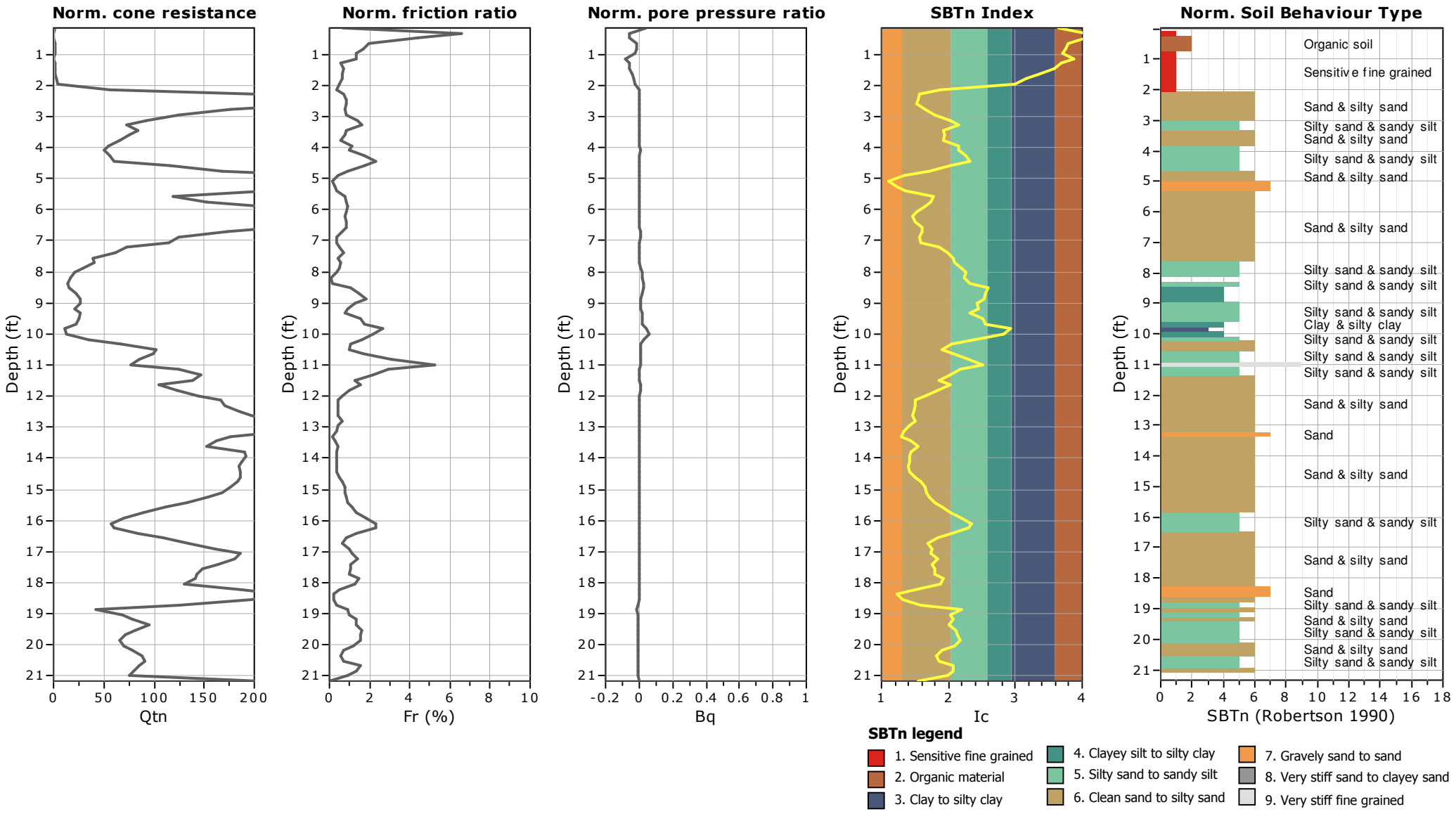
CPT: In-Situ CPT-7
Total depth: 3.77 ft, Date: 2/9/2015
Surface Elevation: 0.00 ft
Coords: X:0.00, Y:0.00
Cone Type: Uknown
Cone Operator: Uknown



Craig Test Boring Co., Inc.
5435 Harding Hwy
Mays Landing NJ
www.craigtest.com

Project:
Location:

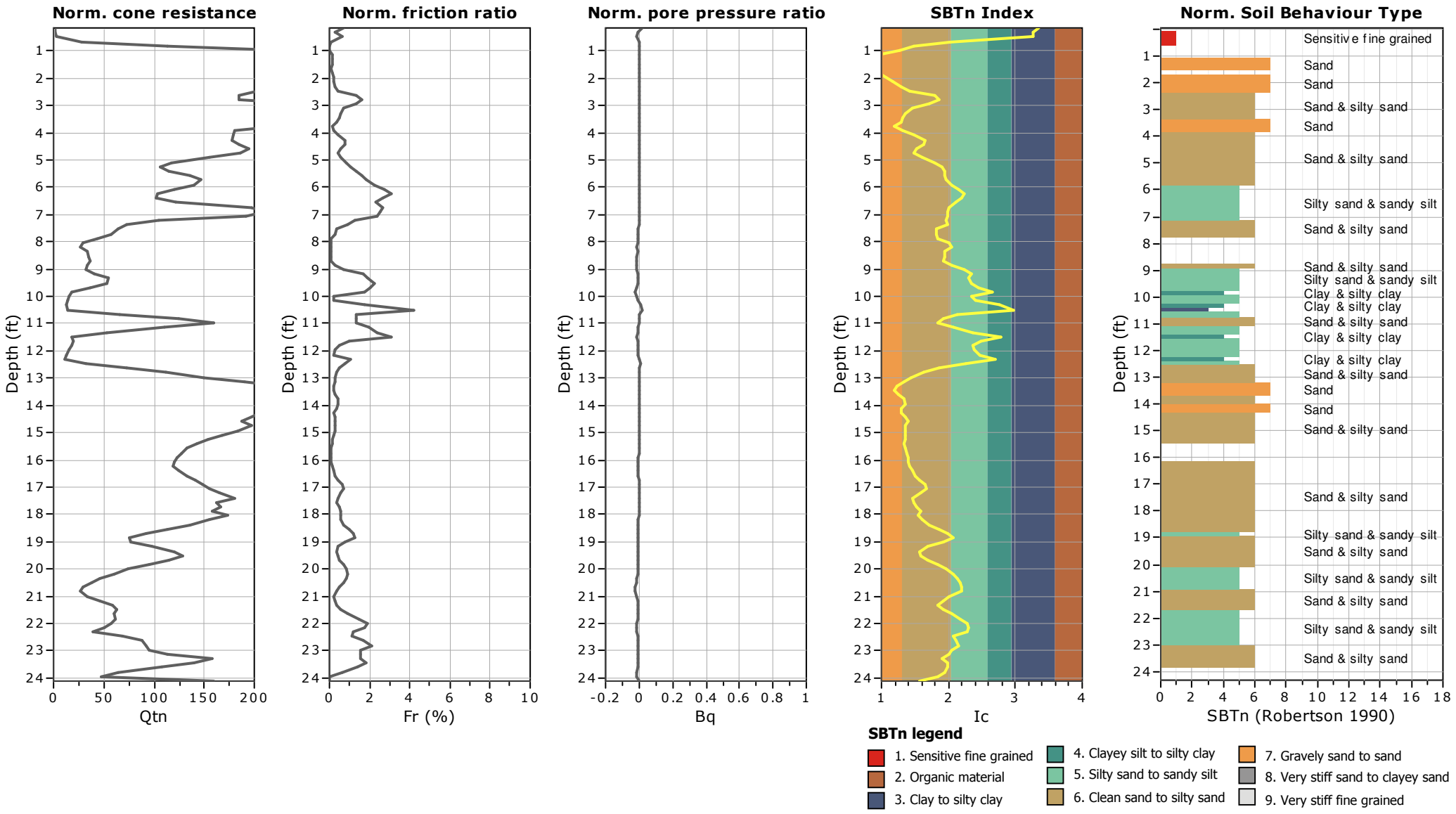
CPT: In-Situ CPT-8
Total depth: 21.16 ft, Date: 2/9/2015
Surface Elevation: 0.00 ft
Coords: X:0.00, Y:0.00
Cone Type: Uknown
Cone Operator: Uknown



Craig Test Boring Co., Inc.
5435 Harding Hwy
Mays Landing NJ
www.craigtest.com

Project:
Location:

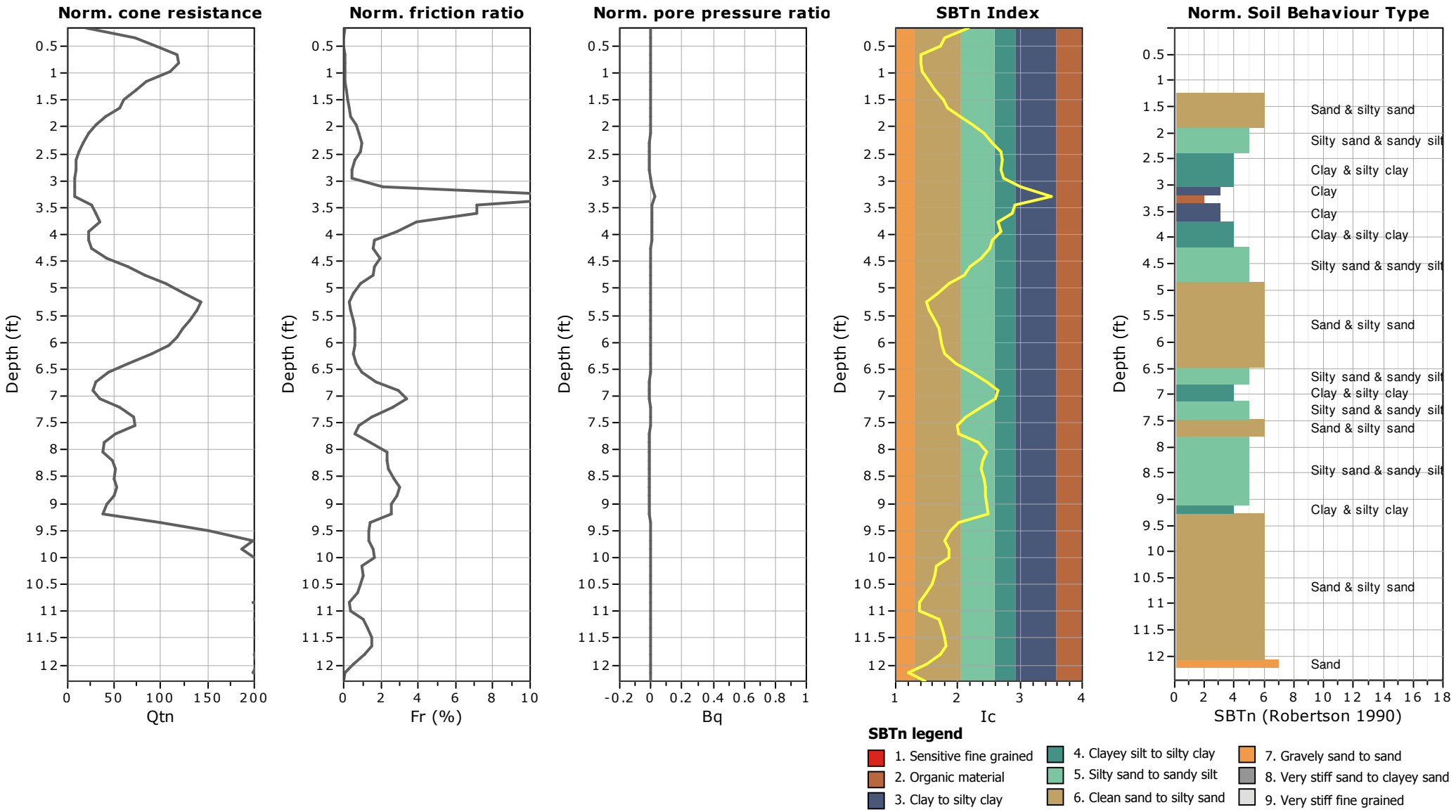
CPT: In-Situ CPT-11
Total depth: 24.11 ft, Date: 2/9/2015
Surface Elevation: 0.00 ft
Coords: X:0.00, Y:0.00
Cone Type: Uknown
Cone Operator: Uknown



Craig Test Boring Co., Inc.
5435 Harding Hwy
Mays Landing NJ
www.craigtest.com

Project:
Location:

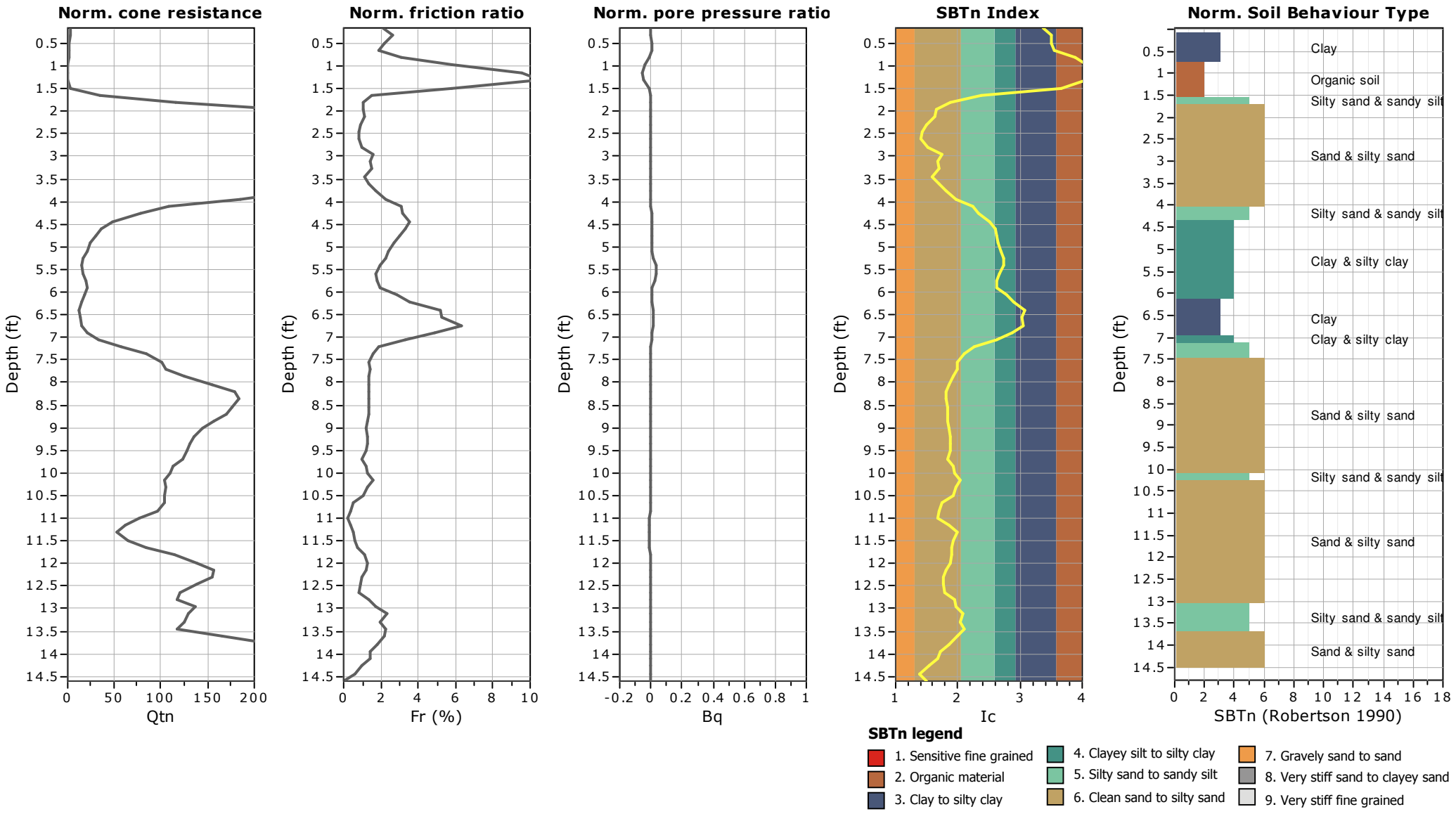
CPT: In-Situ CPT-12
Total depth: 12.30 ft, Date: 2/9/2015
Surface Elevation: 0.00 ft
Coords: X:0.00, Y:0.00
Cone Type: Uknown
Cone Operator: Uknown



Craig Test Boring Co., Inc.
5435 Harding Hwy
Mays Landing NJ
www.craigtest.com

Project:
Location:

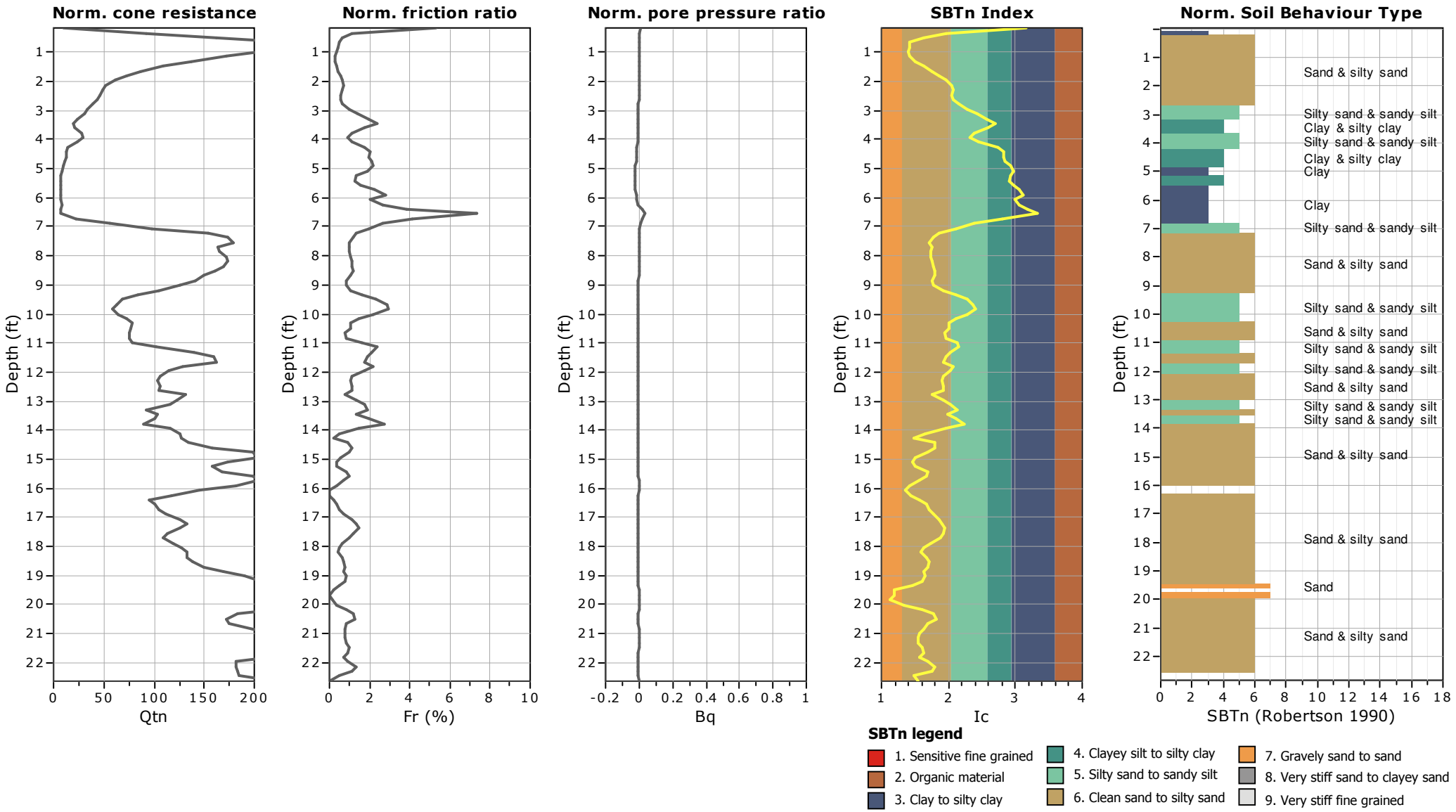
CPT: In-Situ CPT-14
Total depth: 14.60 ft, Date: 2/9/2015
Surface Elevation: 0.00 ft
Coords: X:0.00, Y:0.00
Cone Type: Uknown
Cone Operator: Uknown



Craig Test Boring Co., Inc.
5435 Harding Hwy
Mays Landing NJ
www.craigtest.com

Project:
Location:

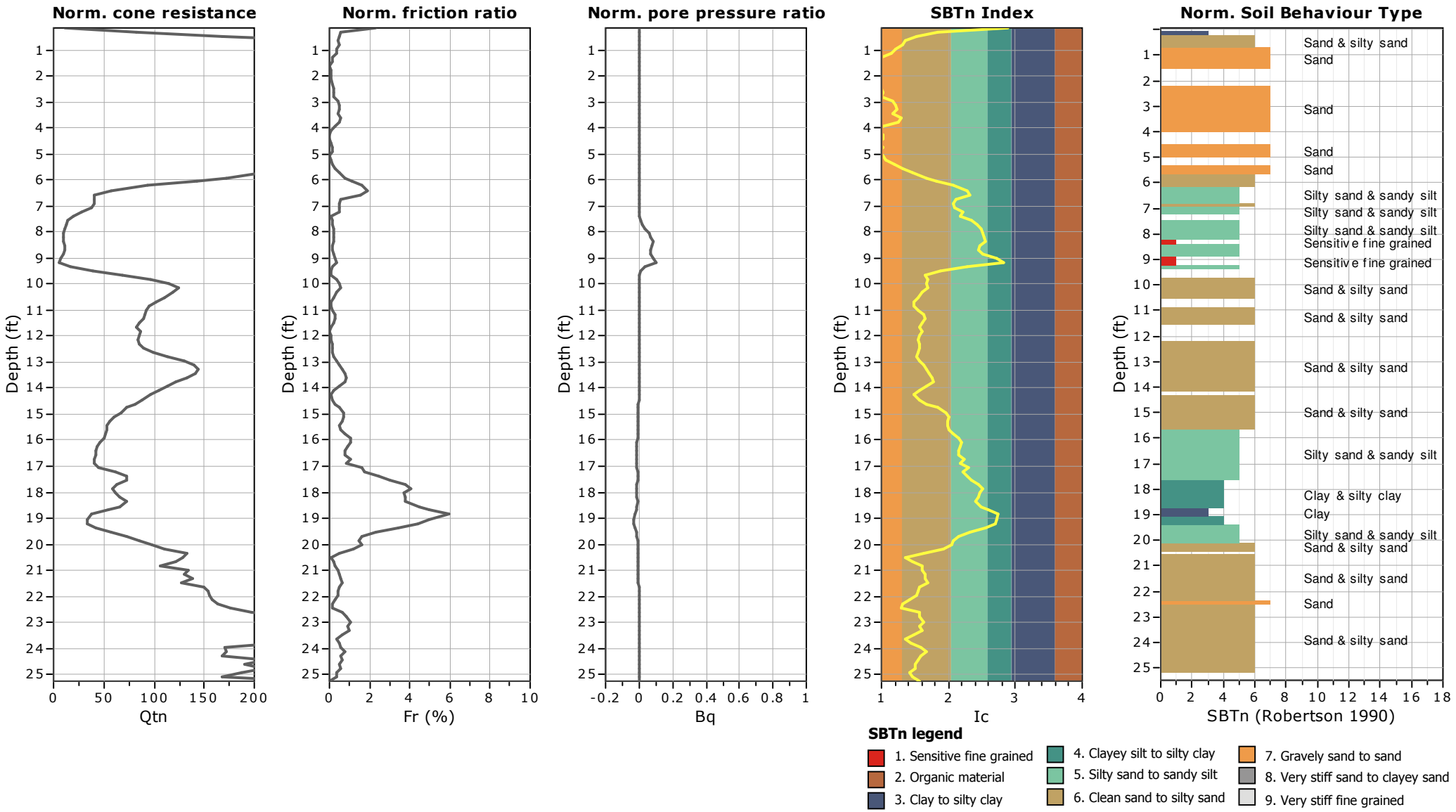
CPT: In-Situ CPT-15
Total depth: 22.64 ft, Date: 2/9/2015
Surface Elevation: 0.00 ft
Coords: X:0.00, Y:0.00
Cone Type: Uknown
Cone Operator: Uknown



Craig Test Boring Co., Inc.
5435 Harding Hwy
Mays Landing NJ
www.craigtest.com

Project:
Location:

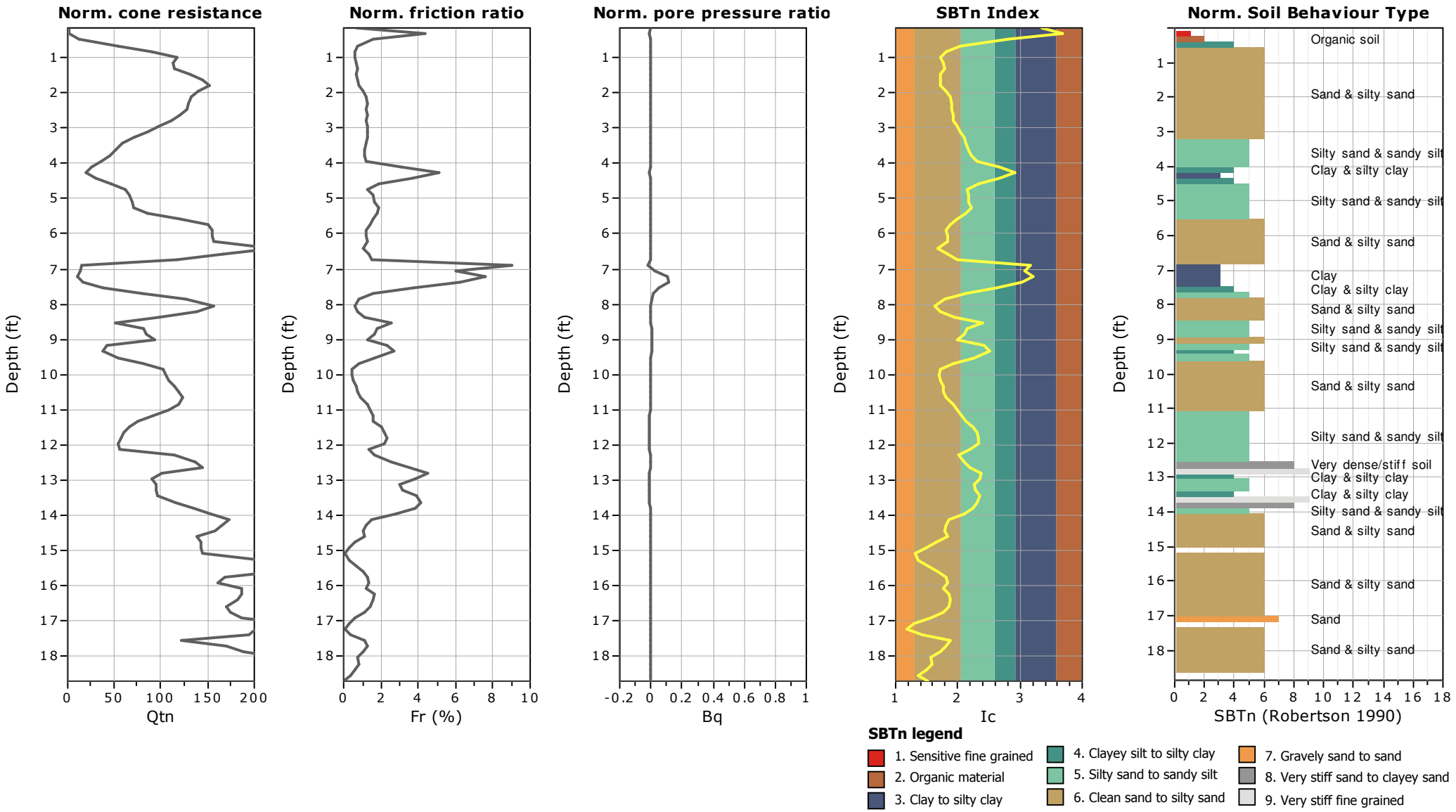
CPT: In-Situ CPT-16
Total depth: 25.26 ft, Date: 2/9/2015
Surface Elevation: 0.00 ft
Coords: X:0.00, Y:0.00
Cone Type: Uknown
Cone Operator: Uknown



Craig Test Boring Co., Inc.
5435 Harding Hwy
Mays Landing NJ
www.craigtest.com

Project:
Location:

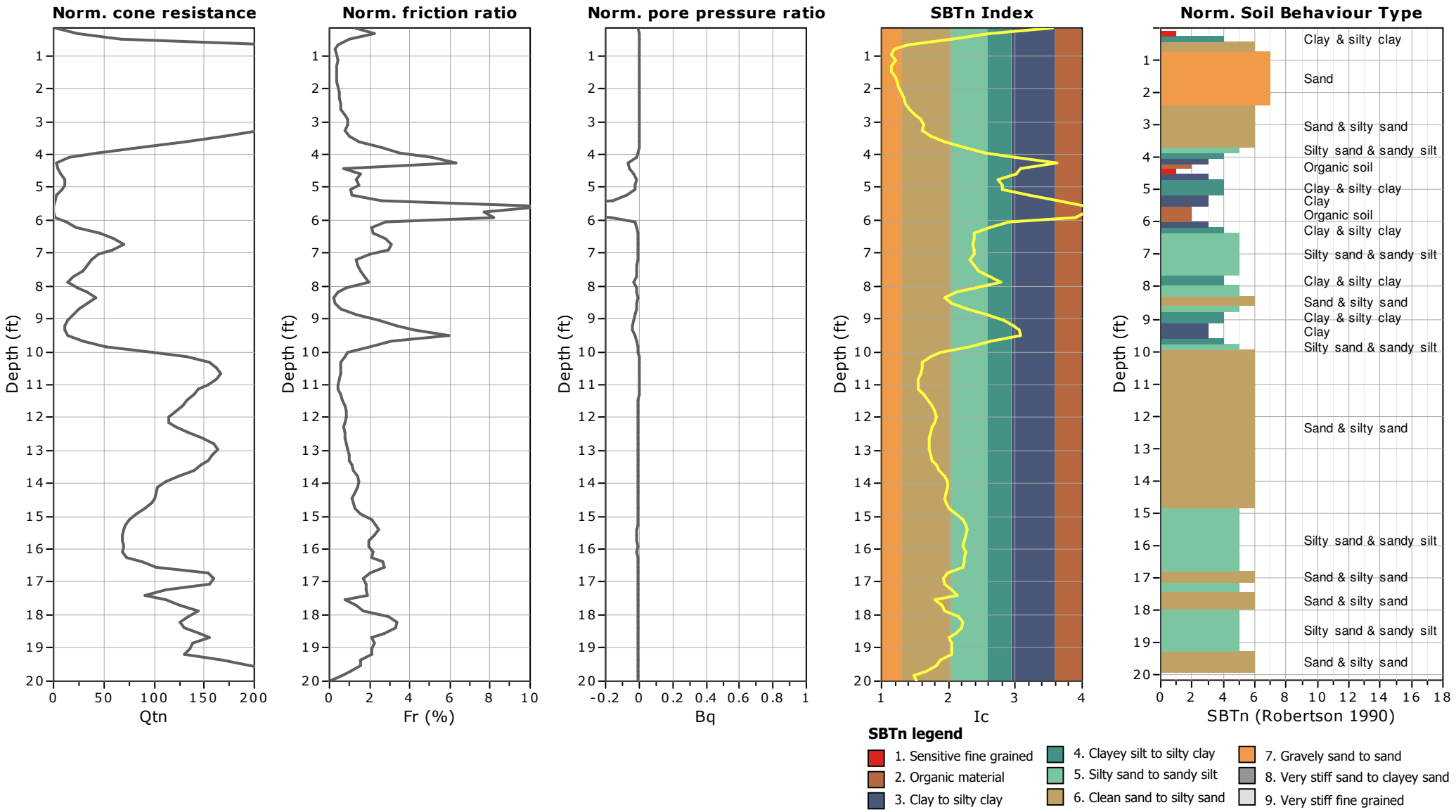
CPT: In-Situ CPT-17
Total depth: 18.70 ft, Date: 2/9/2015
Surface Elevation: 0.00 ft
Coords: X:0.00, Y:0.00
Cone Type: Uknown
Cone Operator: Uknown



Craig Test Boring Co., Inc.
5435 Harding Hwy
Mays Landing NJ
www.craigtest.com

Project:
Location:

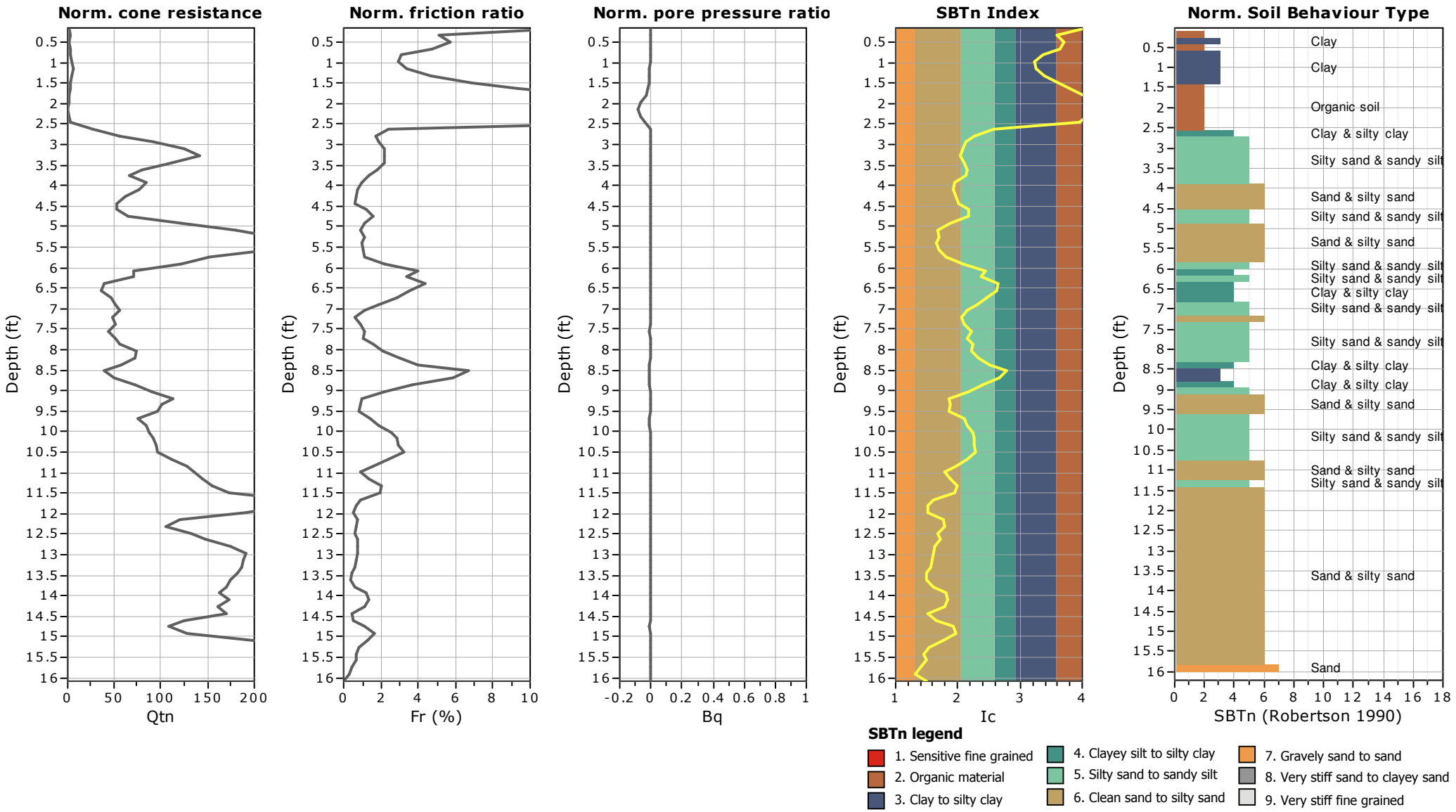
CPT: In-Situ CPT-21
Total depth: 20.01 ft, Date: 2/9/2015
Surface Elevation: 0.00 ft
Coords: X:0.00, Y:0.00
Cone Type: Uknown
Cone Operator: Uknown



Craig Test Boring Co., Inc.
5435 Harding Hwy
Mays Landing NJ
www.craigtest.com

Project:
Location:

CPT: In-Situ CPT-23
Total depth: 16.08 ft, Date: 2/9/2015
Surface Elevation: 0.00 ft
Coords: X:0.00, Y:0.00
Cone Type: Uknown
Cone Operator: Uknown



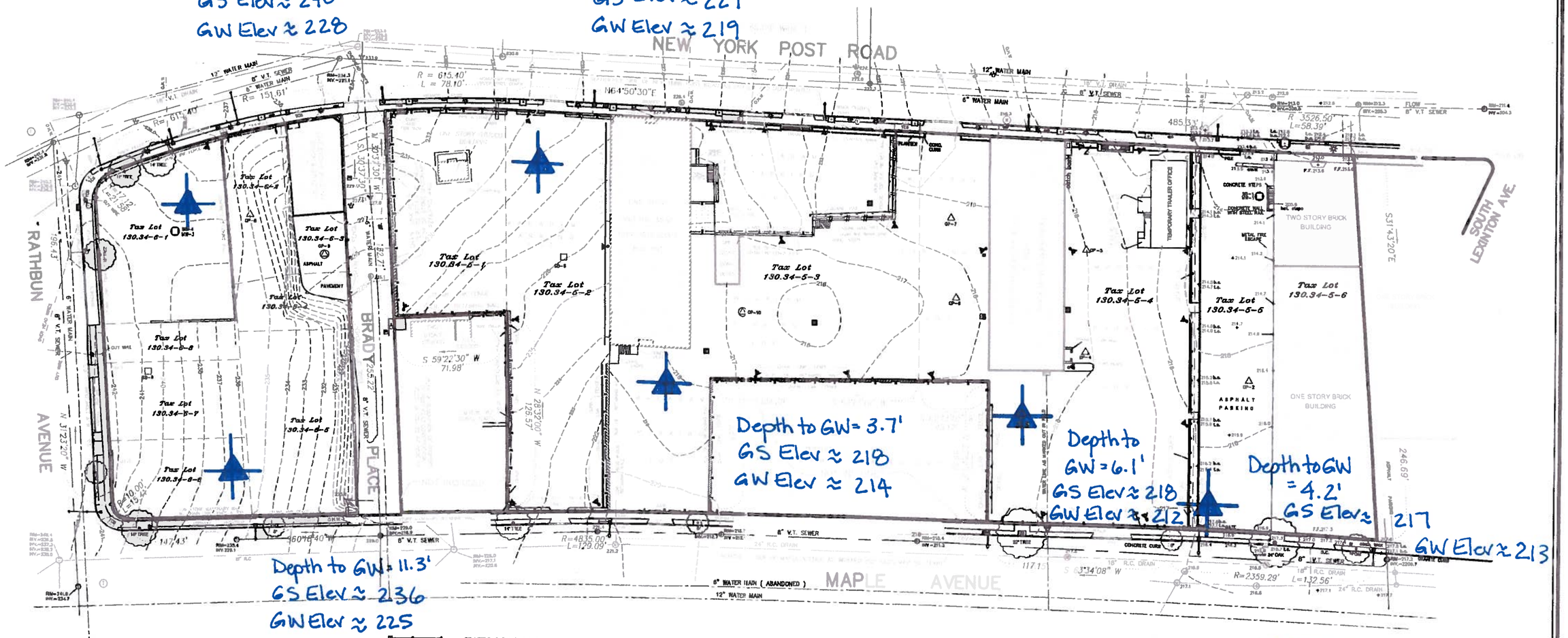
APPENDIX C

EXISTING MONITORING WELL DATA

3724-TOPO

Depth to GW = 12.3'
GS Elev ≈ 240
GW Elev ≈ 228

Depth to GW = 9.6'
GS Elev ≈ 229
GW Elev ≈ 219



Depth to GW = 3.7'
GS Elev ≈ 218
GW Elev ≈ 214

Depth to GW = 6.1'
GS Elev ≈ 218
GW Elev ≈ 212

Depth to GW = 4.2'
GS Elev ≈ 217
GW Elev ≈ 213

Depth to GW = 11.3'
GS Elev ≈ 236
GW Elev ≈ 225

- ELEVATIONS SHOWN HEREON REFER TO THE CITY OF WHITE PLAINS DATUM.
- PREMISES ARE DESIGNATED ON THE TAX MAPS FOR THE CITY of WHITE PLAINS:
  MAP 130.34; BLOCK 5; LOTS 1, 2, 3 & 4
  AREA: 104,210 sq ft / 2.3923 acres
  MAP 130.34; BLOCK 5; LOTS 5, 6
  AREA: 26,664 sq ft / 0.6121 acres
  MAP 130.34; BLOCK 6; LOTS 1, 2, 3, 4, 5, 6, 7 & 8
  AREA: 38,130 sq ft / 0.8753 acres
- ENCROACHMENTS BELOW GRADE AND/OR SUBSURFACE FEATURES, IF ANY, NOT LOCATED OR SHOWN HEREON.
- UNAUTHORIZED ALTERATION OR ADDITION TO A SURVEY MAP BEARING A LICENSED LAND SURVEYOR'S SEAL IS A VIOLATION OF SECTION 7209, SUBDIVISION 2, OF THE NEW YORK STATE EDUCATION LAWS.
- SURVEY SUBJECT TO ANY STATE OF FACTS WHICH AN UP-TO-DATE TITLE EXAMINATION MAY DISCLOSE.
- THE LOCATION OF THE UNDERGROUND UTILITIES AS SHOWN HEREON ARE BASED ON GROUND SURFACE STRUCTURES AND SERVICE PLATES OBTAINED FROM VARIOUS SOURCES. THE ACCURACY OR COMPLETENESS OF SUCH UNDERGROUND UTILITIES IS NOT GUARANTEED BY THE UNDERSIGNED.
  BEFORE ANY EXCAVATION IS STARTED, CONTRACTOR SHALL COMPLY WITH CODE 53 AND HAVE THE SUBSURFACE UTILITIES MARKED ON THE GROUND.
- ONLY COPIES FROM THE ORIGINAL OF THIS SURVEY MARKED WITH AN ORIGINAL OF THE LAND SURVEYOR'S SEAL SHALL BE CONSIDERED TO BE TRUE VALID COPIES.
- CERTIFICATIONS INDICATED HEREON SIGNIFY THAT THIS MAP WAS PREPARED FROM AN ACTUAL FIELD SURVEY CONDUCTED ON THE DATE SHOWN, AND THAT SAID SURVEY WAS PERFORMED IN ACCORDANCE WITH EXISTING "CODE OF PRACTICE FOR LAND SURVEYS" ADOPTED BY THE NEW YORK STATE ASSOCIATION OF PROFESSIONAL LAND SURVEYORS.

- TRAFFIC SIGNAL POLE
- GAS VALVE
- LIGHT POST
- LIGHT POLE
- WATER SHUT OFF
- LIGHT POLE
- MANHOLE
- CATCH BASIN
- PARKING METER
- BELL TELE. MANHOLE
- DRAIN
- DRAIN
- ELECTRIC MANHOLE
- UTILITY POLE
- SEWER MANHOLE
- TREE PIT (TYP. 5' x 5' & 2" dia. TREES) ALONG THE NEW YORK POST RD.
- TCB — TRAFFIC CONTROL BOX
- D.C. — DROP CURB
- O.H.W. — OVER HEAD WIRES
- GEOPROBE BORING COMPLETED AS TEMPORARY WELL [GP-#]
- BORINGS COPLETED AS MONITORING WELLS [SB-#, MW-#]
- ADDITIONAL BORINGS (GEOPROBE) [GP-#]
- SUBSURFACE / ENVIRONMENTAL BORINGS [SB-#]

TOPOGRAPHIC SURVEY OF PROPERTY
SITUATE IN THE
CITY of WHITE PLAINS
WESTCHESTER COUNTY
NEW YORK

SCALE: 1" = 30'
SURVEYED: DEC. 20, 2002
SURVEY AMENDED: APRIL 1, 2003
SURVEY AMENDED TO INCLUDE TAX LOTS 5 & 6
FEBRUARY 4, 2008

NOT TO SCALE
NOT A VALID COPY

APPENDIX C

PREVIOUS (EXISTING) WELLS READ BY MRCE ON 12/4/14. LOCATIONS ARE APPROXIMATE

Link
Land Surveyors, P.C.
21 Clark Place, Suite 1-B
Mahopac N.Y. 10541
Phone 845-628-5857
Fax 845-621-0013

ROLAND K. LINK
NEW YORK STATE LICENSED
LAND SURVEYOR NO. 044228