Appendix 9.5 Geotechnical Report

GEOTECHNICAL REPORT

For: East Tower Building
Albany Medical Center
Albany, New York

File No. 6269

Prepared for: Albany Medical Center

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INTRODUCTION:

The subsurface investigation for the proposed East Tower Building at the Albany Medical Center, New Scotland Avenue, Albany, New York, has been completed. Five (5) soil borings have been completed at the site by Soil & Material Testing, Inc., of Castleton, New York.

In addition to the five soil borings done during this current subsurface investigation the logs of three (3) soil borings, six (6) seismic cone probes, and the results of accompanying pressuremeter testing are available from a 2004 investigation for additions to Buildings A and F. Three of those seismic probes were done at the time anticipating future construction including the current project. The logs of nineteen (19) soil borings from investigations in or around the current site in 1961 and 1987 have been provided by the owner's representatives. The owner also provided the logs of two borings done for the design of the existing retaining wall along Myrtle Ave. north of the present site. The logs of all these borings and cone probes, along with a location diagram and the testing results have been included in the appendix of this report.

It is my understanding that the proposed construction will include:

A 6-story building addition with a basement is planned with the finished basement floor at an elevation of 183. A four story vertical expansion is planned at some undetermined time in the future. The building footprint will have dimensions of about 212 feet wide in an east to west direction and about 360 feet long from the north wall to the tip of the south wall. The existing retaining wall along Myrtle Avenue east of the existing ambulance entrance will be extended to the south. This involves a partial demolition of the existing south end of that wall.

The addition will be supported by a mat foundation with a design pressure of up to 2030 psf with total live and dead load including the dead load of the mat. The dead load plus 50% of the live load is 1755 psf. A portion of the structure near the existing emergency entrance roadway will be supported on a deep pile foundation to allow for a phased construction of the foundations, maintaining emergency entrance traffic and installing utilities. The structure will be designed to

accommodate the estimated differential settlement which will occur between foundations supported by a mat foundation on the clay soils and those supported by piles extended into the dense to very dense glacial till or rock.

Similarly, a pile-supported portion of the structure will be constructed alongside the existing “C” Building along the southwest side of the building footprint. The structural design will accommodate the estimated differential settlement there as well.

The building addition will be located approximately as indicated on the boring plan in the appendix.

The proposed building will have a steel frame design.

The bottom of the mat for the Proposed Building will be about 3 feet below the finished floor elevation of 183 or about elevation 180. A layer of granular drainage material will be installed below the mat putting the bottom of the required excavation at about 179. There will be elevator pits extending to an elevation of 173 to 174 in those local areas.

The differential settlement tolerances are normal. These are considered to include up to 3/4 inch of differential settlement between column locations. A mat foundation can tolerate total settlements of somewhat more than normal total settlements because the mat works to decrease the relative or differential settlements between column locations. The issues with differential settlement will be more critical where the structure spans from the mat to pile supported foundations or where the proposed mat joins existing structures.

The scope of my services has been limited to coordinating the boring, field testing, and laboratory investigation, analyzing the soils information, and providing a geotechnical report with foundation recommendations. Environmental, site design, and structural design aspects of the project should be performed by qualified others. The design of the excavation including the design of the braced or tied-back sheeting; the design of the pile foundations and design of construction drainage will be also done by others.

FIELD INVESTIGATION PROCEDURES:

The borings were performed with a truck-mounted drilling rig. Hollow-stem-auger drilling techniques were employed for borings numbered B-1 (ET2008) through B-3(ET2008). A rotary rig using 4

inch diameter steel casing and a bentonite slurry was used for borings B-2A(ET2008) and B-3A(ET2008). These last two borings were done to provide deeper information for the design of pile foundations; to determine the effects of strain rate on vane shear strengths in a soft or loose layer near the dredge line; and to evaluate the influence of drilling fluid on standard penetration values.

Representative samples were obtained from the boring holes by means of the split-spoon sampling procedure performed in accordance with ASTM D 1586. The standard penetration values obtained from this procedure have been indicated on the soil boring logs.

Soil samples obtained from these procedures were examined in the field, sealed in containers, and shipped to the laboratory for further examination, classification and testing, as applicable.

In addition to the field boring investigation, the soils engineer visited the site to observe the surface conditions.

Vane Shear Testing:

Fourteen (14) vane shear tests were conducted in borings B-2(ET2008) and B-3(ET2008). These tests were done using the SMT vane and a torque wrench with rapid loading. Four (4) vane shear tests were conducted in the adjacent borings B-2A and B-3A using an Acker Drill Vane with a strain rate controlled at 0.1 degrees per second. One additional test was done at B-2A using the SMT vane.

The slow loading rate tests were done to evaluate the effects of loading rate in a stratum of silt, clayey-silt and silty clay layers which tested as unusually soft or loose in the initial borings.

The results of these tests are shown on the soil boring logs. A supplementary discussion of the vane testing is provided in the appendix.

Pressuremeter Testing and Cone Testing:

A summary of pressuremeter testing results from borings done in 2004 nearby at the Building A and Building F locations have been included in the appendix. The logs of cone testing probes done at Buildings A, F, P, the AMC Parking Garage south of New Scotland Avenue (G-1) and the current site (D-4) have also been included. These testing sites are relatively near the proposed East Tower Building site and in very similar soils based on

visual classifications, standard penetration values and the field and laboratory test results. The probe D-4 (2004) was adjacent to our current boring B-2(ET2008) and B-2A locations.

LABORATORY INVESTIGATION:

All samples from the current 2008 and 2004 borings were examined in the laboratory by the soils engineer and classified according to the Unified Soil Classification System. In this system, the soils are visually classified according to texture and plasticity. The appropriate group symbol is indicated on the soil boring logs.

Representative samples were subjected to moisture content testing. This testing was performed in accordance with ASTM D 2216-71. The results of these tests for the current boring samples are indicated on laboratory test result sheets in the appendix. The results of the 2004 tests are shown, graphically, as black circles on the 2004 boring logs.

Samples exhibiting significant cohesion were tested in the field with a calibrated, spring-loaded, penetrometer. This test was used to estimate the unconfined compressive strength of the split spoon samples by measuring the soil's resistance to the penetration of the penetrometer needle. The results of these tests are indicated on the soil boring logs as open circles or as numerical “Qp” values. The results of these tests underestimate the strength of the clays due to inherent sample disturbance and loss of confinement. However, the penetrometer tests can over-estimate the strength of some of the stiff brown clays because the strength of those clay strata can be controlled by weak planes or slickensides.

Three samples were subjected to a grain-size distribution test using the hydrometer method to determine the size of the clay fraction. Four samples were subjected to sieve analysis tests using test screens.

Atterberg limit tests were performed on representative samples in accordance with ASTM D 4318. Sieve analysis and hydrometer tests were conducted on selected samples according to ASTM Standards. The results of these tests are included on test result sheets in the appendix. The results of he atterberg limit tests and the percentage finer than 2 microns (clay particle fraction) are also written on the logs.

The Unified Soil Classification symbols for the soils tested for limits and grain size reflect the lab testing. Additional

laboratory test results from the 1987 investigation for the adjacent D Building have also been included in the appendix.

SITE CONDITIONS:

The site is now occupied by the existing “U” Building along with driveway, parking, and lawn areas.

There has been grading done on the site for the construction of the existing structures and pavements. There is a prominent deposit of fill around the boring B-1(ET2008) location. The boring was done in the sidewalk alongside the existing driveway.

The edge of the mat for the Proposed Building will be within 4 to 5 feet of the existing “D” Building mat foundation and within about 24 feet of the existing spread footing foundations of the existing “C” Building. The top of the mat elevation at the “D” Building is 194' - 2 ½". The footing elevations of the “C” Building range from about 198 to about 202 based on the preliminary site plan received.

There are existing retaining walls near boring B-1 (ET2008) and along Myrtle Avenue at the northeastern corner.

SUBSURFACE CONDITIONS:

The specific subsurface conditions encountered at each boring location are indicated on the individual soil boring logs. However, to aid in the evaluation of this data, I have prepared a generalized description of the soil conditions based on the boring data.

The interpretation of the existing boring information requires realizing that grading and construction operations have taken place at many of those boring sites. Soils might have been removed or added at a given site.

There are fill deposits on the site. The backfill around existing foundations is one kind of fill deposit to be expected. The fill behind the existing retaining walls is probably in the range of the height of the wall. There are shallow fills associated with the existing pavements. There are topsoil layers and shallow fill deposits over the existing lawn areas.

The boring B-1(ET2008) penetrated 14 feet of fill consisting of layers of silty or clayey sand with some debris containing fill at the bottom of the deposit. A mixed soil fill consisting of

sand and silty clay was sampled to about 6 feet deep at the boring B-3(ET2008) location. About 1.7 feet of topsoil was found at the boring B-2(ET2008) location.

Beneath the surface fills and topsoils the virgin soils are the brown, stiff to very stiff (sometimes hard), silty clay soils typical of the Lake Albany Clay. These desiccated soils extend to a depths ranging from as little as about 5 feet at the boring B-2(ET2008) location to as deep as 31 feet deep at the boring B-1(ET2008) location. At these depths the soil colors begin to turn gray and the stiffness of the soils decreases.

There is a layered stratum of very loose or soft slightly plastic silts and clays that is close to the proposed dredge line at boring locations B-2, B2A, B-3 and B-3A (ET2008 borings). This stratum is at depths of about 14 feet to 19 feet at B-2 and at about 19 feet to 25 feet at B-3. Because the field vane tests in this stratum using the “SMT” vane with the rapid loading rate were lower than are usually observed in the local lacustrine deposits, additional vane tests were done in the adjacent “A” borings using an “Acker Drill” vane capable of very slow and controlled strain rates. The results of those slower tests were very much lower than the results with the rapid loading rate.

The lowest vane shear strengths with the “Acker Drill” vane were about 135 psf to 140 psf in softer clay/silt strata at the B-2 &2A(ET2008) and B-3 &3A(ET2008) locations. The vane shear values using the “SMT” vane were markedly higher at about 570 to 600 psf where a higher strain rate was used. The static cone test taken adjacent to the B-2 location (CPTD4 in 2004) also indicated a borderline medium to soft or loose clay/Silt stratum at the same depth range of about 14 to 19 feet. The qc value in this depth range was in the 8 to 10 tsf range.

The more typical vane shear strengths on the site ranged from about 1100 psf to a little over 1400 psf using the “SMT” vane. A slow strain rate “Acker Vane” test at 26.5 feet deep at B-3A(ET2008) indicated an undrained strength of 755 psf. This is just below the soft or loose stratum described above. It seems clear that the slower strain rate testing yields a lower undrained or vane shear strength which is expected from the literature. However, the difference is unusually marked in this loose or soft silt stratum near the dredge line. In the Unified System the symbol for this soil is “MH.”

The Empire Soils Investigation report for the existing Building D indicated a fairly consistent undrained strength value of about 800 psf at varying depths. Undrained strengths determined during

past investigations by Tchebotarioff near State, Hawk, and Swan Streets and by Burmister for the NYS Education Building were in a similar range as found in the current investigation with the exception of the slow vane test results on the layer described above. The soils in that stratum apparently lack substantial cohesion or undrained strength.

The gray, soft to stiff, silty clays and loose silts extend to depths ranging from about 112 feet to about 117 feet where a deposit of gravelly sand glacial till was encountered. The corresponding elevation range was 80 to 84. Similar conditions are shown on the 1984 borings for Building D. Those borings described somewhat more fine sands and silts in the dense glacial tills. Shale was encountered in current boring B-2A(ET2008) at a depth of 120 feet (elevation 71.7). Shale was encountered at a depth of 150 feet at the boring 87 (1987) location. Boring 85(1987) extended to a depth of 156 feet without encountering bedrock. These are elevations of 51 and 47.5.

A comparison of standard penetration values (“N values” or blow/counts) between adjacent borings performed with and without drilling fluid indicated that the values increased slightly with the use of the bentonitic drilling fluid as anticipated.

GROUNDWATER CONDITIONS:

Based on the groundwater levels recorded during the past boring and current investigations the depths to groundwater varied from about 4 feet to about 10 feet. The 16.0 to 17.5 foot depth (elevation 186.7 to 188.2) to groundwater at the B-1(ET2008) location is made deeper with the added fill deposit there. The groundwater level in the observation wells at boring location B-2(ET2008) was 7.0 to 8.5 feet (elevation 184.2 to 184.7) and at B-3(ET2008) 9.0 to 9.5 feet (elevation 191.5 to 192). These levels reflect groundwater pressures that may exist to depths of 42 to 52 feet (tip of screen), but they also correspond to the range of depths to groundwater noted in the 1961 borings.

Perched groundwater tables may occur at higher elevations in the soil profile due to groundwater being retained by layers or lenses of silt or clay soils.

Some fluctuation in hydrostatic groundwater levels and perched water conditions should be anticipated with variations in the seasonal rainfall and surface runoff.

I refer also to a groundwater report prepared separately by Hanson and VanVleet which will be available from the owner’s

representatives. This report contains the results of a study of hydraulic conductivity for the soils on the site based on “slug and bail” testing at the monitoring wells B-1, B-2, and B-3(ET2008).

ANALYSIS AND RECOMMENDATIONS:

Site Work:

Existing, uncontrolled fill should be removed and replaced as necessary with controlled fill. There will probably be little or no existing fill remaining after making the required excavations for the proposed basement. However, there are to be structures and/or slabs not supported by the mat or pile foundations for which this recommendation would have application.

Before excavating below a groundwater surface, pre-drainage systems should be put in place so as to lower the groundwater sufficiently to avoid bottom heave, piping, or boiling in the subgrades. This is described in a later section “Construction Procedures and Problems.”

In order to limit disturbance of the mat foundation subgrade at least the last 4 feet of material above the design subgrade to be removed should be removed with an excavator equipped with a flat plate fastened to the bucket. The excavator tracks should not be closer than 4 feet from the edge of this berm.

A layer of woven, polypropylene, separation/reinforcement geotextile should be placed over the subgrade and one foot of crushed stone (size 1 or a mixture of size 1 and size 2) placed to protect the subgrade and provide drainage during construction. The geotextile should have a grab tensile strength of at least 300 pounds per inch.

Locally, some over-excavation and use of a thicker layer of crushed stone may be required to achieve an adequately stable subgrade for construction purposes. The avoidance of subgrade disturbance is very important due to its impact on post-construction settlements. The crushed stone layer can be temporarily thickened in heavily traveled or softer areas to protect the subgrade. Any excess stone can be later removed prior to construction of the mat.

The crushed stone should be compacted by 3 or more passes of a walk-behind, vibratory, compactor to compact and “key” the stone to provide more stiffness for construction traffic as well as

reduce the compressibility of the stone layer. The compaction of the stone layer on the softer, gray, clays may require performing the compaction of the stone in a series of passes with time allowed between compaction efforts. These very silty clays develop excess pore pressures when agitated, vibrated, or sheared making the subgrade soils less stiff until those pore pressures dissipate with some passing time. Soil ageing also stiffens the sheared soils over longer periods of time.

***Controlled Fill*:**

Controlled, free-draining, granular fill can be spread in lifts not exceeding 12 inches in loose thickness. These materials should be compacted to a minimum of 95 percent of the maximum ASTM Specification D 1557-91 density, modified proctor.

All controlled fill should be free of organic and/or frozen material.

Free-draining, granular, controlled fill should have less than 10 percent fines passing the #200 sieve. New York State Department of Transportation (NYS DOT) subbase items could be used as backfill. The crushed item (Type 2) will be more stable on soft subgrades than those items made up of natural sand and gravel although where the subgrade or lower lift is stable, the natural products such as Type 4 can be used.

On-site, clay and silt fill will be too wet to handle and compact within the limited working spaces available on these sites.

***Building Foundations*:**

Ten Story Building with Basement:

I recommend that the proposed structure be supported by a mat foundation resting on virgin, inorganic, soils or on controlled fill which, in turn, rests on these virgin materials. The building design and construction plan requires that a portion of the structure near the northeast corner will need to be supported by pile foundations. A group of twelve piles are planned for a location near column lines “A” and “9.” The pile cap will be connected to the mat with grade beams. The structure there will be designed to span from mat support to a pile-supported foundation. Also for construction planning reasons involved with maintaining of an ambulance entrance throughout the construction process, a portion of the proposed mat foundation will be

constructed separately. This section of mat will later be structurally integrated with the rest of the mat foundation.

At the junction of the proposed East Tower Building with the existing Building C ten piles will be used to support cantilever structures to avoid the need for foundation construction within the C Building. These piles are located between Building C column lines 12c and 10c and column lines 1(Tower Bldg) and Pc. The use of piles rather than shallow foundations will control settlements and provide uplift resistance.

Estimated Post Construction Settlements:

I have used the dead load and 50% of the live load as a basis for settlement estimation. The estimated settlements for the six story phase and most of the settlement for the added four story phase are based on recovery of the heave from excavation load relief and subgrade disturbance. The design loads are listed in the table below along with the estimated excavation load relief based on an estimated total unit weight of 115 pcf and a buoyant unit weight of 53 pcf.

A supplementary discussion of the approach to settlement estimation used has been included in the appendix.

Table of Structural Loads(psf):

Load Type	1st Phase (6 stories)	2nd Phase (4 stories)	Total Load	Excavation Load Relief
DL	1070	410	1480	West Side 1874 psf
50% LL	175	100	275	East Side 1132 psf
DL +0.5LL	1245	510	1755	
Total DL+LL	1420	610	2030	

It can be noted that there is a maximum net load increase with ten stories in place of about 623 psf based on these numbers above. This increase tapers to none along the 203 contour line (approximately) as you move westward across the foundation.

Estimated Settlements (in)

Phase	Center Of Mat	Center of East Edge	Center of West Edge	East Corners	West Corners
Six Stories	**2.5**	**1 1/4**	**1 1/4**	**3/4**	**3/4**
Add Four Stories	**1**	**3/4****	**½**	**½**	**1/4**
Total Settlement with Ten Stories	**3.5**	**2**	**1 3/4**	**1 1/4**	**1**

****The edge settlements are commonly estimated at about ½ of the center settlements and the corners at about 1/4 to 1/3 of the center settlements. When the final four stories are added, it results in a net added structural load along the east side of the mat. An additional 1/4 inches has been added to settlement estimates along the east edge reflecting this.

Since the settlements to be experienced will be so closely related to subgrade heave or rebound with excavation, I recommend that deep settlement gauges be installed at three locations. These are to be located near each of the two pile clusters and at the approximate center of the proposed mat foundation. The gauge near the pile cluster at the northeast corner should be in the Phase I mat foundation. This foundation segment will be constructed early in the project and will allow more time for rebound to occur and for evaluation of the rebound data.

A Sondex system or an equivalent system could be used. A Sondex gauge casing should be extended 10 feet into the glacial till. The bottom of the casing becomes the permanent bench mark or elevation reference for future readings of changes in elevation of the mat subgrade and intermediate points along the casing.

Helical piles extended a few feet into the subgrade before excavation commences and cut off as the excavation proceeds (with the required adjustment of top of rod elevation) can be used as supplementary points for measurement of rebound and subsequent settlement.

The actually measured rebound at the time of mat construction will allow a re-evaluation of the estimated settlements and possible adjustment of structure elevations planned to better match existing construction.

Mat Design:

The Menard pressuremeter data can be used to estimate a modulus

of deformation of the soil for use in structural design of the mat or slabs-on-grade. The pressuremeter modulus can be used as a deformation modulus for clay soils. For cohesionless soils this modulus is conservative because these soils due not have significant tensile strength which increases pressuremeter values. A deformation modulus of 35 tsf is recommended. This value is intended to correspond to a modulus of subgrade reaction of about 105 pci from tests on a one foot square plate.

Pile Supported Portions of the Structure:

The estimated concrete pier loads or column loads for the pile-supported portions of the structure near the existing emergency access driveway and along column line 1 near the existing C Building range up to about 2810 kips when 10 stories have been completed.

I recommend that these piers and columns be supported by cast-in-place concrete piles which are founded or supported in either the dense to very dense, granular, glacial till found below the clays and silts or in the shale bedrock. These piles will gain their bearing value in side-friction bearing.

The specific pile designs can utilize pressure grouting to increase the lateral pressure on the bearing length and produce higher bearing values than designs depending on in-situ horizontal pressures.

I recommend that a design/build pile contractor be retained to design and install these piles. A range of pile diameters and cross section designs could be used. The Building Code of New York must be complied with and well as the prevailing standards of practice.

A load test for each type of pile design is recommended to demonstrate that the allowable bearing value has been achieved with settlements in the acceptable range.

Basement and Basement Wall Design Recommendations:

The excavation will require a tight sheeting to maintain the groundwater levels beneath the existing adjacent buildings. Therefore, the basement walls that are adjacent to the existing buildings along the west side of the building footprint will need to be designed for the lateral pressure of the existing clay soils below the groundwater table and the groundwater pressure itself.

The elevation of the post-construction drainage for the stone layer beneath the mat should also be controlled in the design or an analysis done to show that drainage from the stone layer can be allowed without lowering groundwater levels significantly beneath existing buildings.

The installation of the sheeting and the subsequent excavation is likely to result in at least some disturbance and shear within the retained soil adjacent to the sheeting. The resulting pressure on the sheeting and the adjacent basement wall may approach the full fluid pressure of the saturated retained soils.

The permanent basement wall can be designed for the groundwater pressure and the buoyant lateral soil pressure with the appropriate factor of safety. Surcharge loads should be added to the soil self-weight pressure and water pressure.

I recommend that sheets be pushed in with a Kowan “Still Worker” or similar equipment designed to minimize subgrade disturbance of the soils where the sheeting will be close to existing structures.

Soil parameters including atterberg limits, hydrometer tests, moisture content tests, standard penetration values, cone data, and other field and laboratory data have been provided for development of design strength values for sheeting design.

A subsurface drain should be installed at or near the existing groundwater level to prevent any rise in the groundwater level due to the presence of the sheeting and the proposed structure itself.

The drain tile should be a minimum of 8 inches in diameter, surrounded by a minimum of 8 inches of washed sand or crushed stone wrapped with a filter fabric **(Amoco 4545 or equal).** The drain tile should drain to daylight, a storm water sewer or a sump equipped with a pump.

The wall should then be backfilled with a controlled, well-graded, free-draining granular material. The granular backfill should fill the space between the sheeting and the wall. The upper 1 foot of material should be a fairly impermeable material or pavement used to shed surface water.

Spread Footing Foundations for Lighter Structures & Retaining Walls:

I recommend that the proposed structure be supported by spread

footing foundations resting on virgin, inorganic, soils or on controlled fill which, in turn, rests on these virgin materials. Footings can be designed for a maximum, net, allowable soil bearing pressure of 3000 psf.

Footings with loads exceeding 450 kips should be reviewed by the geotechnical engineer to determine whether the estimated settlement is acceptable. Settlements other than mat settlements are expected to have settlement tolerances not exceeding one inch.

A minimum footing width of 2.0 feet is recommended for load-bearing strip footings. Isolated footings should be at least 3.0 feet wide.

Exterior footings or footings in unheated areas should have a minimum of 4.0 feet of embedment for protection from frost action. Interior footings should have a minimum embedment of 1.5 feet below finished grade to develop the bearing value of the soils.

The retaining walls should have a drain tile placed in the backfill at the base of the wall. The drain tile should be a minimum of 6 inches in diameter, surrounded by a minimum of 8 inches of washed sand or crushed stone wrapped with a filter fabric (Amoco 4545 or equal). The drain tile should drain to a stormwater sewer, daylight, or a sump equipped with a pump.

The wall should then be backfilled with a controlled, well-graded, free-draining granular material. The material should extend away from the wall a horizontal distance of two-thirds the height of the fill being placed. The upper 1 foot of material should be a fairly impermeable material to shed surface water.

If these procedures are used, a lateral soil pressure of 40 psf per foot of retained soil can be used for design of the wall. A coefficient of base sliding of 0.40 can also be used for design.

If the retaining wall is braced or if the deflection is limited prior to backfilling so the active soil pressure is not achieved, an at-rest lateral soil pressure of 60 psf per foot of retained soil can be used for design. Any surcharge load pressure should be added using a Ko or at-rest lateral pressure coefficient of 0.44.

Lighter unit weight, granular, backfills such as crushed stone or geofoam could be specified to reduce lateral design pressures, if considered practical. Crushed stone can also have a higher

friction angle and correspondingly lower lateral pressure coefficient.

If the backfill zone described above does not consist of the granular backfill described the design backfill pressures and the global stability should be reviewed.

The plans indicate the Myrtle Avenue retaining wall will extend down to an elevation of 178 or about 6 feet below curb level. Slope drains are shown on the plans extending about 32 feet southward beneath the extended wall. I can be of additional service in reviewing proposed wall cross sections for global stability.

Floor Slabs:

Any floor slabs for structures other than the mat supported structure which are resting on subgrades can be designed to rest on virgin, inorganic, soils or on controlled fills resting on virgin materials. In areas without basements an 8-inch layer of well-graded, free-draining, granular material should be placed beneath the floor slab to provide drainage, act as a capillary break, and to provide better and more uniform support.

Seismic Design Recommendations:

The site can be classified as "Site Class D." This is based on a calculation of Vs bar at the boring SCPT - A1 (B1 2004) location. This was a seismic cone probe in soils which are essentially similar in cone probe parameters throughout the Albany Medical Center based on the six seismic probes done in 2004 and taking an overview of existing soil boring information. The Vs bar value is 716 feet per second. A value of 600 feet per second is required to meet site class "D" requirements. The next higher class ("C") would require 1200 feet per second.

The mapped design spectral accelerations for the site for short periods (Ss); long periods (S1); and peak ground acceleration (PGA) are as follows: (USGS values for 2002 as used in the 2007 version of the Building Code of New York).

Ss	0.2296 g
S1	0.0686 g
PGA	0.1086g

These values are for latitude 42.65591N and longitude -73.77655W in zip code area 12208 (Myrtle Avenue area).

The site is not liquefaction prone based on its relative stiffness, high fines content of the soils, and the plasticity of the soils combined with the relatively low spectral accelerations for the area.

CONSTRUCTION PROCEDURES AND PROBLEMS:

All excavations of more than a few feet should be sheeted and braced or laid back to prevent sloughing in of the sides. The clayey soils will require a 1:1 (Horizontal:Vertical) (H:V) construction slope. These are Type B soils under the OSHA standards down to the level of the water table. Where granular or cohesionless soils such as fills are encountered, the permitted slope is 1.5:1.0 (H:V) for the Type C soils. Alternatively, stepping or small retaining structures could be used to meet OSHA requirements. Below the water table a specific excavation design will be required.

Bottom heave of excavations more than a foot or two below a hydrostatic groundwater table will be an excavation design issue. In a layered clay and silt soil such as on this site groundwater pressures will remained trapped beneath the bottoms of excavations extended into a groundwater table. Depending on the stratification of soils below the excavation, seepage flow can move laterally toward the excavation and raise the bottom or result in boils. In order to prevent this from occurring it will be necessary to lower the groundwater table to a depth below the bottom of an excavation equal to the depth of the bottom (dredge line) below the original water table with an additional depth of pre-drainage to provide the desired safety factor. This pre-drainage can be done with vacuum well points surrounded with concrete sand or using filter protected sumps for the shallower depths. The results of groundwater testing done by others can be used along with the subsurface data as a basis for this pre-drainage design.

Relief wells could also be used to relieve excess pressure. Wells can be used as pumping points and relief wells depending on the design applied.

Excavations should not extend below adjacent footings unless properly designed sheeting and bracing or underpinning is installed. The prism of soil supporting a foundation can be considered to be defined by a line or surface descending from the outer edge of the foundation at an inclination of 1:2 (H:V). If a sheeting has to penetrate that zone, then underpinning will be required to limit settlement in addition to the installation

of a properly braced or tied back sheeting to restrain the soil supporting the structure from lateral movement. Push-in sheeting systems could be used in lieu of underpinning adjacent to foundations to avoid the subgrade disturbance and settlement associated with sheeting installed by vibratory or impact hammers. The sheeting design and underpinning procedure need to consider limitation of the lateral strain of the sheeting to small levels depending on the amount of settlement which can be tolerated by the structure. Groundwater issues also need to be evaluated so that no loss of ground occurs from beneath the structure with water movement outward.

I recommend leaving any sheeting installed in place after construction unless it can be shown that the lateral movement of the soil associated with its removal will not result in settlement of existing structures or utilities or the proposed structures.

A tied-back or braced sheeting design will be required which is prestressed as necessary to adequately restrain lateral movement of the sheeting. The methods recommended by Terzaghi and Peck and later by others using rectangular or trapezoidal lateral pressure diagrams to restrain the sides of the excavation should be used in the excavation design. The appropriate pressure diagram should be applied to the restrained soils. Given the layers of soft to medium silts and silty clays encountered near design excavation bottom at B-2(ET2008) and B-3(ET2008) and the relatively high groundwater a total force equal to the full fluid pressure of the saturated soil should be designed for.

The underpinning must have adequate bearing so that the settlement of the structure remains within tolerable limits. On this site relatively small loads can be supported within the stiff upper soil strata with relatively small settlements. Larger loads will require deep foundation elements extending to very dense glacial till or bedrock.

Lowering of the groundwater table outside sheeted enclosures should be avoided or limited to small areas and limited periods of time. Sustained lowering of the groundwater table could cause settlement of existing structures which are supported by shallow foundations. Buried utilities could also be affected.

Temporary paving using coarse fill material or separation/ reinforcement geotextile and coarse fill material may be required for moving about the site during wet or thaw weather. The bottom of the basement excavation will be into the stiff or soft to medium gray clays. As described in earlier sections of

this report, a layer of geotextile and crushed stone is recommended to deal with moving construction traffic over the excavation bottom I recommend that an allowance be provided for local thickening of the stone layer over soft areas and for temporary thickening of the stone layer by adding to the top in lanes or paths used heavily by construction traffic.

Subgrades should be kept from freezing during construction.

Water, snow, and ice should not be allowed to collect and stand in excavations or low areas of the subgrade.

The subgrades should be cut with a backhoe bucket fitted with a plate cutting edge to minimize the disturbance of the subgrade. At least the last four feet of the excavation should be made with an excavator operating on this last berm of material. Construction vehicle traffic should be kept off subgrades to limit disturbance. More disturbance would lead to more settlement.

A qualified testing laboratory should be retained to observe and test all backfill and construction materials related to foundation construction.

A qualified geotechnical engineer should observe the subgrades and the installation of any piling or tie-backs.

CONTENTS OF APPENDIX:

1. General Notes

2. Boring Location Diagram for Current (2008) Borings

3. Boring Logs (2008)

4. Boring Location Plans for 1961, 1987, 2001 and 2004 Borings

5. Boring Logs 1961, 1987(plus lab testing), 2001 and 2004 Borings

6. Seismic Cone Probe Logs for Bldg D(adjacent to site); and Buildings A, F, P, and G (2004) Tables of Cone Probe Data Are also included for A-1 and D-4

7. Test Results (Current 2008 Investigation)

8. Pressuremeter Test Results (2004) Done at Bldgs A & F

9. Additional Discussion of Settlement Analysis

10. Additional Discussion of Vane Shear Testing

11. Unified Soil Classification System

12. Soil Use Chart

13. General Qualifications

GENERAL NOTES

DRILLING & SAMPLING SYMBOLS

SS	:	Split-Spoon— 1 3/4" I.D., 2" O.D., except where noted
S	:	Shelby Tube — 2" O.D., except where noted
PA	:	Power Auger Sample
DB	:	Diamond Bit — NX: BX: AX:
CB	:	Carboloy Bit — NX: BX: AX:
OS	:	Osterberg Sampler — 3" Shelby Tube
HS	:	Housel Sampler
WS	:	Wash Sample
FT	:	Fish Tail
RB	:	Rock Bit
WO	:	Wash Out

Standard "N" Penetration: Blows per foot of a 140 pound hammer falling 30 inches on a 2 inch OD split spoon, except where noted

WATER LEVEL MEASUREMENT SYMBOLS

WL	:	Water Level
WCI	:	Wet Cave In
DCI	:	Dry Cave In
WS	:	While Sampling
WD	:	While Drilling
BCR	:	Before Casing Removal
ACR	:	After Casing Removal
AB	:	After Boring

Water levels indicated on the boring logs are the levels measured in the boring at the times indicated. In pervious soils, the indicated elevations are considered reliable ground water levels. In impervious soils the accurate determination of ground water elevations is not possible in even several day's observation, and additional evidence on ground water elevations must be sought.

CLASSIFICATION

COHESIONLESS SOILS

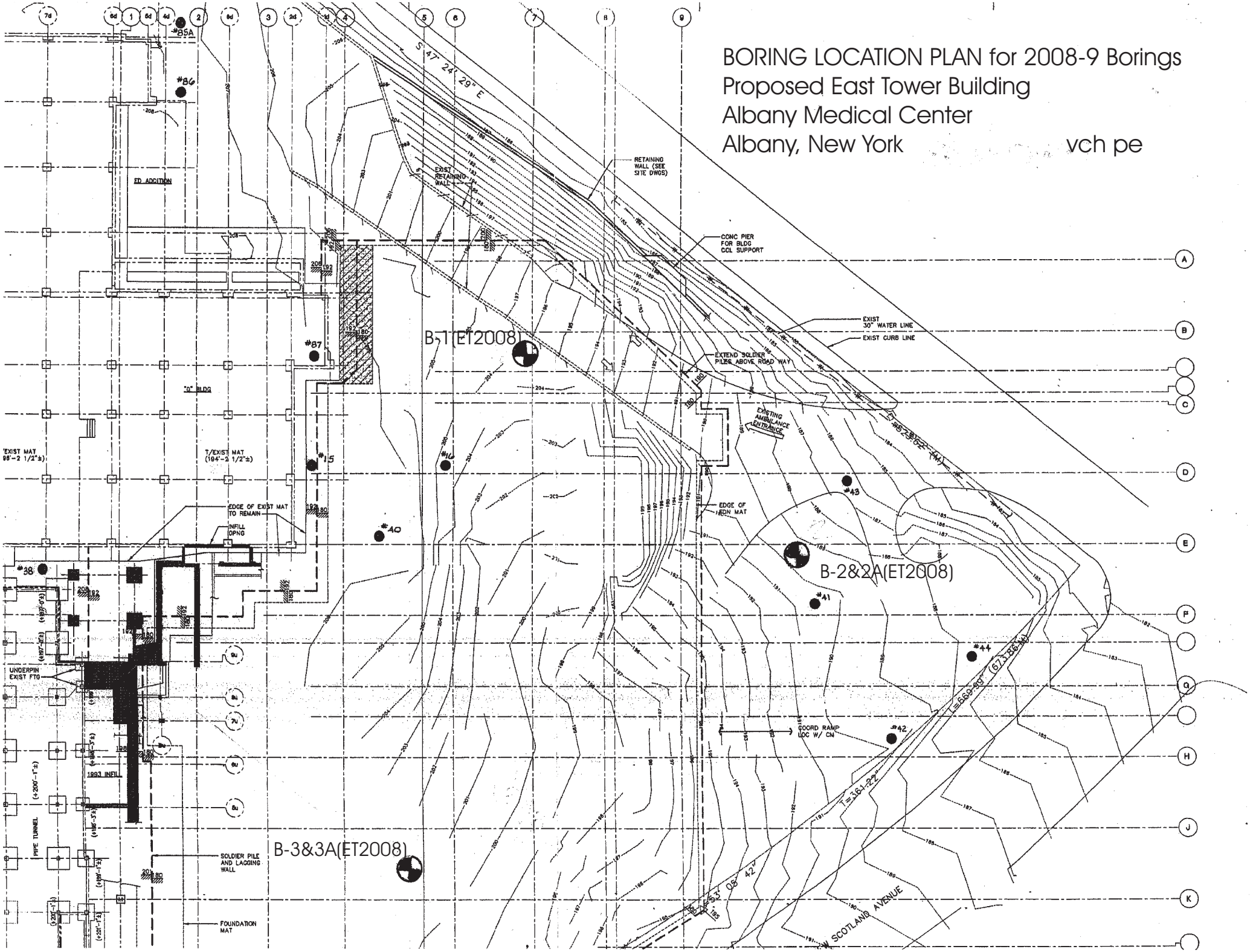
"Trace"	:	1% to 10%
"Trace to some"	:	10% to 20%
"Some"	:	20% to 35%
"And"	:	35% to 50%
Loose	:	0 to 9 Blows
Medium Dense	:	10 to 29 Blows
Dense	:	30 to 59 Blows
Very Dense	:	≥ 60 Blows

} or equivalent

COHESIVE SOILS

If clay content is sufficient so that clay dominates soil properties, then clay becomes the principle noun with the other major soil constituent as modifiers: i.e., silty clay. Other minor soil constituents may be added according to classification breakdown for cohesionless soils; i.e., silty clay, trace to some sand, trace gravel.

Soft	:	0.00 — 0.59 tons/ft^2
Medium	:	0.60 — 0.99 tons/ft^2
Stiff	:	1.00 — 1.99 tons/ft^2
Very Stiff	:	2.00 — 3.99 tons/ft^2
Hard	:	≥ 4.00 tons/ft^2


BORING LOCATION PLAN for 2008-9 Borings
Proposed East Tower Building
Albany Medical Center
Albany, New York
vch pe
B-1(ET2008)
B-2&2A(ET2008)
B-3&3A(ET2008)
S 47 24' 29" E
S 53 05 42"
W SCOTLAND AVENUE
RETAINING WALL (SEE SITE DWGS)
EXIST RETAINING WALL
CONC PIER FOR BLDG COL SUPPORT
EXIST 30" WATER LINE
EXIST CURB LINE
EXTEND SOLDIER PILES ABOVE ROAD WAY
EXISTING AMBULANCE ENTRANCE
EDGE OF EXIST MAT TO REMAIN
INFILL OPNG
EDGE OF FDN MAT
UNDERPIN EXIST FTG
1993 INFILL
PIPE TUNNEL
SOLDIER PILE AND LAGGING WALL
FOUNDATION MAT
"O" BLDG
ED ADDITION
T/EXIST MAT (194'-2 1/2"±)
SCORD RAMP LOC W/ CN
#85A
#86
#87
#15
#16
#40
#38
#43
#41
#44
#42

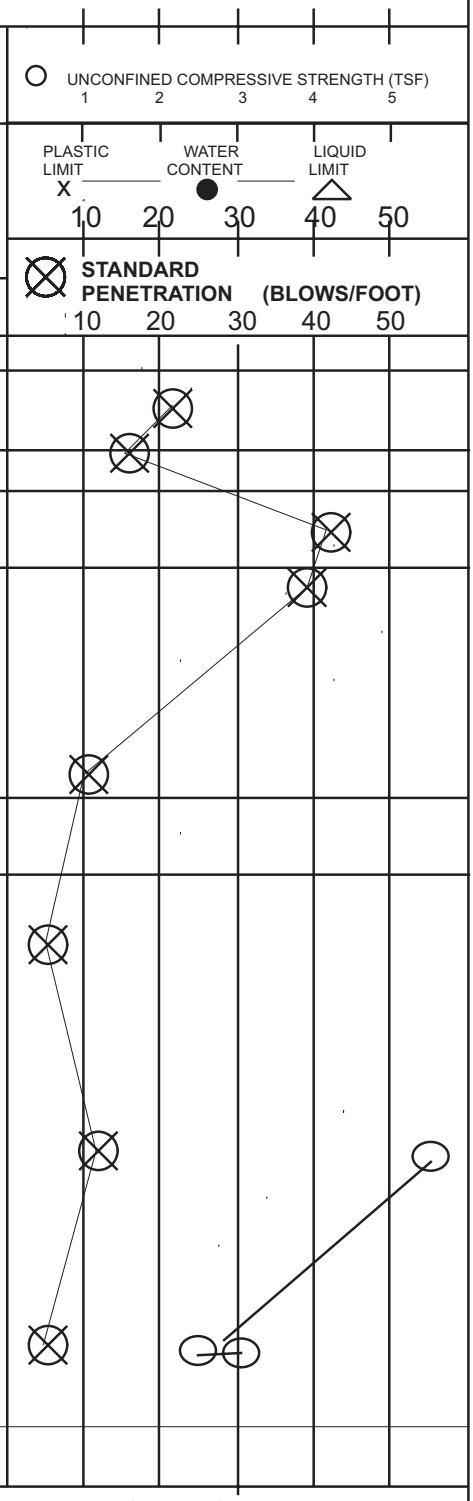
PROJECT NAME: Proposed East Tower	LOG OF BORING NO. B-1 (ET2008) page 1 of 2
PROJECT LOCATION: New Scotland Ave. & Myrtle Ave., Albany, New York	OFFSET - ON
CLIENT: Albany Medical Center	

UNCONFINED COMPRESSIVE STRENGTH (TSF) 1 2 3 4 5

PLASTIC LIMIT X — WATER CONTENT ● — LIQUID LIMIT △ 10 20 30 40 50

STANDARD PENETRATION (BLOWS/FOOT) 10 20 30 40 50

Elevation Depth	Sample Number	Sample Type	Sample Distance	Recovery	DESCRIPTION OF MATERIAL
					SURFACE ELEVATION 204.2
		PA			Power Auger throug 0.5 ft of concrete
	S1	SS			Sand, trace to some Silty Clay, brown, moist, medium dense (SC) Fill
	S2	SS			Note A
5.0	S3	SS			Sand, trace to some Silty Clay, trace Gravel, brown, dry to moist, dense (SC) Fill
	S4	SS			Sand, trace to some Gravel and Silt, trace concrete, medium dense to dense (SM) Fill
10	S5	SS			
					Very hard drilling in Fill with brick and wood
15	S6	SS			
					Silty Clay, light brown and orange brown, moist, very stiff to hard (CL) brownish gray silt layers
20	S7	SS			
					Installed 50 feet of pvc pipe with 10 foot screen & backfilled hole with sand to curb box at pavement surface.
25	S8	SS			
					(Continued on Next Page)
					Note A: Gravel, some Sand, trace Silt, brown, moist, (GM) Fill Power Auger 1.0-4.0 through cobbles



WATER LEVEL None noted WS 17.5 ft 28Oct08 16.0 ft 16 Dec 08	VCH FILE NO. 6269	VERNON HOFFMAN PE
DATE October 8, 2008	STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES: IN-SITU TRANSITION MAY BE GRADUAL	SOIL AND FOUNDATION ENGINEERING 30 TULIP STREET ROTTERDAM NY 12306 (518) 382-0207 fax (518) 382-1035

PROJECT NAME: Proposed East Tower	LOG OF BORING NO. B-1 (ET2008) Page 2 of 2
PROJECT LOCATION: New Scotland Ave. & Myrtle Ave., Albany, New York	OFFSET - ON
CLIENT: Albany Medical Center	

UNCONFINED COMPRESSIVE STRENGTH (TSF) 1 2 3 4 5

PLASTIC LIMIT X — WATER CONTENT ● — LIQUID LIMIT △ 10 20 30 40 50

STANDARD PENETRATION (BLOWS/FOOT) 10 20 30 40 50

Elevation Depth	Sample Number	Sample Type	Sample Distance	Recovery	DESCRIPTION OF MATERIAL SURFACE ELEVATION 204.2
					(Continued from previous page)
30	S9	SS			ADD DESCRIPTION FROM PAGE ONE
					Silty Clay, trace Fine Sand seams, gray with yellow brown layers, stiff (CL)
35	S10	SS			Silt seam, moist to wet
40	S11	SS			Silty Clay, gray, with red clay layers wet, medium to stiff
45	S12	SS			Silty Clay, gray, wet, medium to stiff (CL)
50	S13	SS			
					End of Boring - 52 feet Installed 50 ft. of pvc pipe with 10 ft. of screen, backfilled with sand and installed curb box in sidewalk concrete.

WATER LEVEL None Noted WS 17.5 ft 28Oct08 16.0 ft 16Dec08	VCH FILE NO. 6269	VERNON HOFFMAN PE
DATE October 8, 2008	STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES: IN-SITU TRANSITION MAY BE GRADUAL	SOIL AND FOUNDATION ENGINEERING 30 TULIP STREET ROTTERDAM NY 12306 (518) 382-0207 fax (518) 382-1035

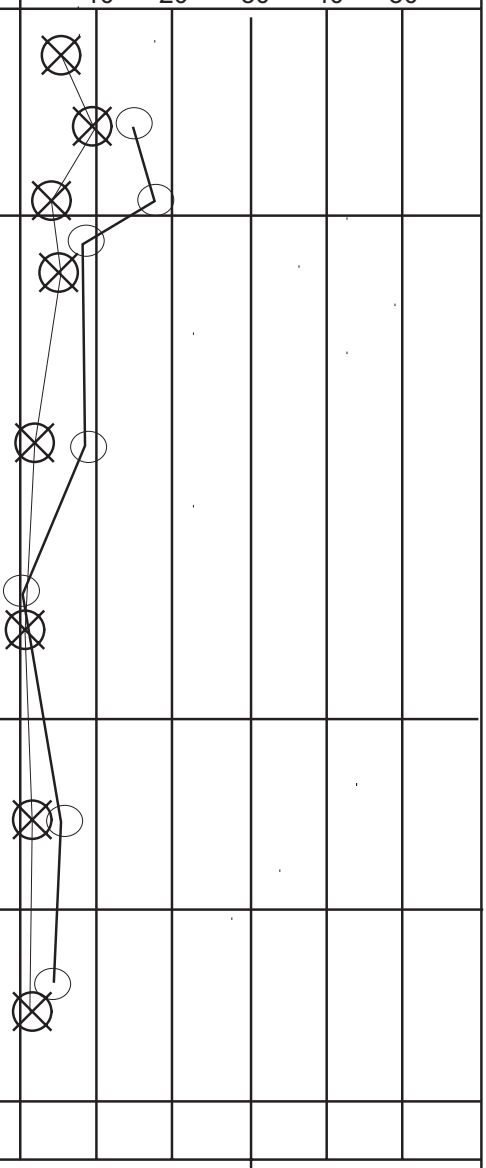
PROJECT NAME: Proposed East Tower	LOG OF BORING NO. B-2 (PT2008) page 1 of 2
PROJECT LOCATION: New Scotland Ave. & Myrtle Ave., Albany, New York	OFFSET - ON
CLIENT: Albany Medical Center	

Estimated (hand penetrometer or Qp) UNCONFINED COMPRESSIVE STRENGTH (TSF) 1 2 3 4 5

PLASTIC LIMIT X — WATER CONTENT ● — LIQUID LIMIT △ 10 20 30 40 50

STANDARD PENETRATION (BLOWS/FOOT) 10 20 30 40 50

Elevation Depth	Sample Number	Sample Type	Sample Distance	Recovery	DESCRIPTION OF MATERIAL
					SURFACE ELEVATION
	S1	SS			).7 ft. of Topsoil over Silty Clay, yellowish brown, very stiff (CL)
	S2	SS			
5.0	S3	SS			
	S4	SS			Silty Clay, grayish brown, moist to wet, medium to stiff (CL)
10	S5	SS			
					Vane Shear Test with tip of vane at 14.0 feet c=571 psf , c remolded = 258 psf
15	S6	SS			
					Vane Shear Test with tip of vane at 19.0 feet c= 1426 psf c remolded = 516 psf
20	S7	SS			Silty Clay, gray, moist, medium to stiff (CL)
					Vane Shear test with tip of vane at 24.0 feet c = 1291 psf c remolded = 543 psf
25	S8	SS			Silty Clay, gray, moist to wet, medium to stiff (CL)
					Vane Shear Test with tip of vane at 29.0 feet c = 1263 psf c remolded = 503 psf
					(Continued on Next Page)



WATER LEVEL	VCH FILE NO. 6269	VERNON HOFFMAN PE
DATE October 10, 2008	STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES: IN-SITU TRANSITION MAY BE GRADUAL	SOIL AND FOUNDATION ENGINEERING 30 TULIP STREET ROTTERDAM NY 12306 (518) 382-0207 fax (518) 382-1035

PROJECT NAME: Proposed East Tower	LOG OF BORING NO. B-2 (ET2008) page 2 of 2
PROJECT LOCATION: New Scotland Ave. & Myrtle Ave., Albany, New York	OFFSET - ON
CLIENT: Albany Medical Center	

UNCONFINED COMPRESSIVE STRENGTH (TSF) 1 2 3 4 5

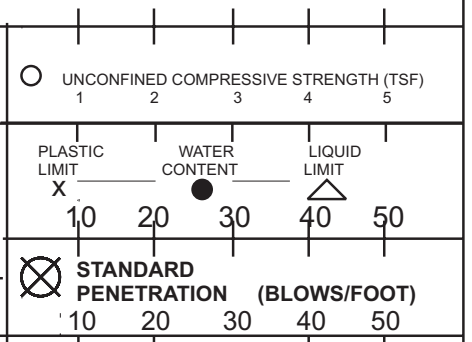
PLASTIC LIMIT X — WATER CONTENT ● — LIQUID LIMIT △ 10 20 30 40 50

STANDARD PENETRATION (BLOWS/FOOT) 10 20 30 40 50

Elevation Depth	Sample Number	Sample Type	Sample Distance	Recovery	DESCRIPTION OF MATERIAL SURFACE ELEVATION 191.7
					(Continued from Previous Page)
30	S9	SS			Vane shear with tip of vane at 29.0 ft c=1263 psf c remolded = 503 psf Silty Clay, gray, moist to wet, stiff (CL) Silt layers (MH, ML)
35	S10	SS			Vane Shear with tip of vane at 34.0 ft c = 1155 psf c remolded = 394 psf
40	S11	SS			Vane Shear with tip of vane at 39.0 ft c = 1358 psf c remolded = 448 psf
45					End of Boring - 42.0 feet
50					Note: Installed pvc pipe with screen 30 ft to 40 ft backfilled with sand and set curb box

WATER LEVEL None Noted WS 7.0ft 28Oct08 8.5 ft 16Dec08	VCH FILE NO. 6269	VERNON HOFFMAN PE SOIL AND FOUNDATION ENGINEERING 30 TULIP STREET ROTTERDAM NY 12306 (518) 382-0207 fax (518) 382-1035
DATE October 10, 2008	STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES: IN-SITU TRANSITION MAY BE GRADUAL	

PROJECT NAME: Proposed East Tower	LOG OF BORING NO. B-3 (ET2008) page 1 of 2
PROJECT LOCATION: New Scotland Ave. & Myrtle Ave., Albany, New York	OFFSET - ON
CLIENT: Albany Medical Center	



Elevation Depth	Sample Number	Sample Type	Sample Distance	Recovery	DESCRIPTION OF MATERIAL
					SURFACE ELEVATION 201.0
	S1	SS			Sand and Silty Clay, trace gravel and roots, brown, moist to wet, loose to medium dense, cohesive in some layers (SM-SC) Fill
	S2	SS			
5.0	S3	SS			
	S4	SS			Silty Clay, trace fine sand, light brown, mottled light gray and orange , moist, stiff (CL)
10	S5	SS			Silty Clay, light brown, moist to wet, stiff (CL)
15	S6	SS			Vane Shear with tip of vane at 14.0 ft. c = 1291 psf c remolded = 516 psf Silty Clay, gray, moist to wet, stiff (CL)
20	S7	SS			Vane Shear with tip of vane at 19.0 ft c = 571 psf c remolded = 312 psf Layers of Silt, reddish gray, wet, very loose (MH) Vane Shear with tip of vane at 24.0 ft c = 571 psf c remolded = 299 psf
25	S8	SS			Vane Shear with tip of vane at 29.0 ft , c = 1426 psf c remolded = 543 psf

(Continued on next page)

WATER LEVEL None Noted WS 9.0 28Oct08 9.5 16Dec08	VCH FILE NO. 6269	VERNON HOFFMAN PE SOIL AND FOUNDATION ENGINEERING 30 TULIP STREET ROTTERDAM NY 12306 (518) 382-0207 fax (518) 382-1035
DATE October 9, 2008	STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES: IN-SITU TRANSITION MAY BE GRADUAL	

PROJECT NAME: Proposed East Tower	LOG OF BORING NO. B-3 (ET2008) page 2 of 2
PROJECT LOCATION: New Scotland Ave. & Myrtle Ave., Albany, New York	OFFSET - ON
CLIENT: Albany Medical Center	

UNCONFINED COMPRESSIVE STRENGTH (TSF) 1 2 3 4 5

PLASTIC LIMIT X — WATER CONTENT ● — LIQUID LIMIT △ 10 20 30 40 50

STANDARD PENETRATION (BLOWS/FOOT) 10 20 30 40 50

Elevation Depth	Sample Number	Sample Type	Sample Distance	Recovery	DESCRIPTION OF MATERIAL
					SURFACE ELEVATION 201.0
					(Continued from previous page)
30	S9	SS			Vane Shear with tip of vane at 29.0 ft. c = 1426 psf c remolded = 543 psf Silty Clay, gray, moist to wet, medium to stiff (CL)
35	S10	SS			Vane Shear with tip of vane at 34.0 ft. c = 1291 psf c remolded = 516 psf
40	S11	SS			Vane Shear with tip of vane at 39 ft. c = 1317 psf c remolded = 530 psf Same soils
45	S12	SS			Vane Shear with tip of vane at 44 ft. c = 1114 psf c remolded = 571 psf Same Soils
50	S13	SS			Vane Shear with tip of vane at 49 ft. c = 1426 psf c remolded = 475 psf
					End of Boring - 52.0 feet

WATER LEVEL None Noted WS 9.0 ft 28Oct08 9.5 ft 16 Dec08	VCH FILE NO. 6269	VERNON HOFFMAN PE
DATE October 9, 2008	STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES: IN-SITU TRANSITION MAY BE GRADUAL	SOIL AND FOUNDATION ENGINEERING 30 TULIP STREET ROTTERDAM NY 12306 (518) 382-0207 fax (518) 382-1035

PROJECT NAME: Proposed East Tower	LOG OF BORING NO. B-2A(ET2008) page one of three
PROJECT LOCATION: New Scotland Ave. & Myrtle Ave., Albany, New York	OFFSET - 3 ft East from B-2
CLIENT: Albany Medical Center	

UNCONFINED COMPRESSIVE STRENGTH (TSF) 1 2 3 4 5

PLASTIC LIMIT X — WATER CONTENT ● — LIQUID LIMIT △ 10 20 30 40 50

STANDARD PENETRATION (BLOWS/FOOT) 10 20 30 40 50

Elevation Depth	Sample Number	Sample Type	Sample Distance	Recovery	DESCRIPTION OF MATERIAL SURFACE ELEVATION 191.7
					4 inch diameter steel casing to 10.0, Rock Bit to 10.0
10	S1	SS			N = 4 Qp = 0.5 tsf Casing to 13.0 ft. &wash out Silt, gray, wet, loose (MH) Acker Drill Vane Test with tip of vane at 14.5 ft. c = 141 psf c remolded = 70 psf
	S2	SS			Open hole to 15.0 ft Layers of Silt, Reddish Gray, wet, very loose (MH) N = 2 Qp = 0.25 tsf LL=54% PL = 38% PI = 16%
20					
30					
					Casing to 40.0 ft. & wash out with RB
40	S3	SS			N = 3 Layers of Silt, gray, wet, loose (MH) LL=69% PL = 43% PI = 26%
					Casing to 50.0 ft. & wash out with RB
50	S4	SS			N = 2 Qp = 0.25 tsf
					Continued on Next Page

WATER LEVEL 32.0 ft BCR
see log of B-2(ET2008) for long term

DATE Start 2Feb2009
Finish 8Feb2009

VCH FILE NO. 6269

STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES: IN-SITU TRANSITION MAY BE GRADUAL

VERNON HOFFMAN PE
SOIL AND FOUNDATION ENGINEERING
30 TULIP STREET
ROTTERDAM NY 12306
(518) 382-0207 fax (518) 382-1035

PROJECT NAME: Proposed East Tower	LOG OF BORING NO. B-2A(ET2008) Page 2 of 3
PROJECT LOCATION: New Scotland Ave. & Myrtle Ave., Albany, New York	OFFSET - 3 ft east of B-2
CLIENT: Albany Medical Center	

UNCONFINED COMPRESSIVE STRENGTH (TSF) 1 2 3 4 5

PLASTIC LIMIT X — WATER CONTENT ● — LIQUID LIMIT △ 10 20 30 40 50

STANDARD PENETRATION (BLOWS/FOOT) 10 20 30 40 50

Elevation Depth	Sample Number	Sample Type	Sample Distance	Recovery	DESCRIPTION OF MATERIAL
					SURFACE ELEVATION 191.7
					Continued from previous page
					Open hole to 60.0 feet
60	S5	SS			N = 1 Qp = 0.25 tsf
					Layers of Gray Silty Clay and Silts or Clayey Silts, wet, soft to stiff, or loose (CL, ML and ML-CL)
					Open hole to 70.0 feet
70	S6	SS			N = 3 Qp = 0.5 tsf
					Open hole to 80.0 feet
80	S7	SS			N = 3 Qp = 0.5 tsf
					Open hole to 90.0 feet
90	S8	SS			N = 4 Qp = 0.75 tsf
					Open hole to 100.0 feet
100	S9	SS			N - 5 Qp = 0.75 tsf
					Change at 112.0 ft to Fine to Coarse Sand, trace to some Gravel&Silt, Gray, Wet, Dense/very dense (SM) glacial till
					Continued on Next Page

WATER LEVEL 32 ft BCR See B-3 for long term gwls	VCH FILE NO. 6269	VERNON HOFFMAN PE
DATE Started 2 Feb2009 Finished 8 Feb2009	STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES: IN-SITU TRANSITION MAY BE GRADUAL	SOIL AND FOUNDATION ENGINEERING 30 TULIP STREET ROTTERDAM NY 12306 (518) 382-0207 fax (518) 382-1035

PROJECT NAME: Proposed East Tower	LOG OF BORING NO. B-2A(ET2008) Page 3 of 3
PROJECT LOCATION: New Scotland Ave. & Myrtle Ave., Albany, New York	OFFSET - 3 ft east of B-2
CLIENT: Albany Medical Center	

UNCONFINED COMPRESSIVE STRENGTH (TSF) 1 2 3 4 5

PLASTIC LIMIT X — WATER CONTENT ● — LIQUID LIMIT △ 10 20 30 40 50

STANDARD PENETRATION (BLOWS/FOOT) 10 20 30 40 50

Elevation Depth	Sample Number	Sample Type	Sample Distance	Recovery	DESCRIPTION OF MATERIAL SURFACE ELEVATION 191.7
					Continued from previous page Open hole to 110.0 feet Layers of Silty Clay, Silt, and Clayey Silt (CL, ML MH, ML-CL)
110		SS			N = 7 Qp = 0.75 tsf change at 112.0 ft.
					Fine to Coarse Sand, trace to some Gravel & Silt, Dense to Very Dense, gray, wet (SM) Layers of Cobbles
					N = 51 Open hole to 115 feet
					Open hole to 120 feet Hydraulic pressure 122 - 123 = 450 psi
120					Weathered Shale, Gray, very dense Open hole to 125 feet
					End of Boring - 125 feet Hydraulic Pressure 750 psi
130					
140					
150					

75/ft

WATER LEVEL 32 ft BCR See B-3 for long term gwls	VCH FILE NO. 6269	VERNON HOFFMAN PE SOIL AND FOUNDATION ENGINEERING 30 TULIP STREET ROTTERDAM NY 12306 (518) 382-0207 fax (518) 382-1035
DATE Started 2 Feb2009 Finished 8 Feb2009	STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES: IN-SITU TRANSITION MAY BE GRADUAL	

PROJECT NAME: Proposed East Tower	LOG OF BORING NO. B-3A(ET2008) page one of three
PROJECT LOCATION: New Scotland Ave. & Myrtle Ave., Albany, New York	OFFSET - 4 ft East from B-3
CLIENT: Albany Medical Center	

○ UNCONFINED COMPRESSIVE STRENGTH (TSF) 1 2 3 4 5

PLASTIC LIMIT X — WATER CONTENT ● — LIQUID LIMIT △ 10 20 30 40 50

⊗ STANDARD PENETRATION (BLOWS/FOOT) 10 20 30 40 50

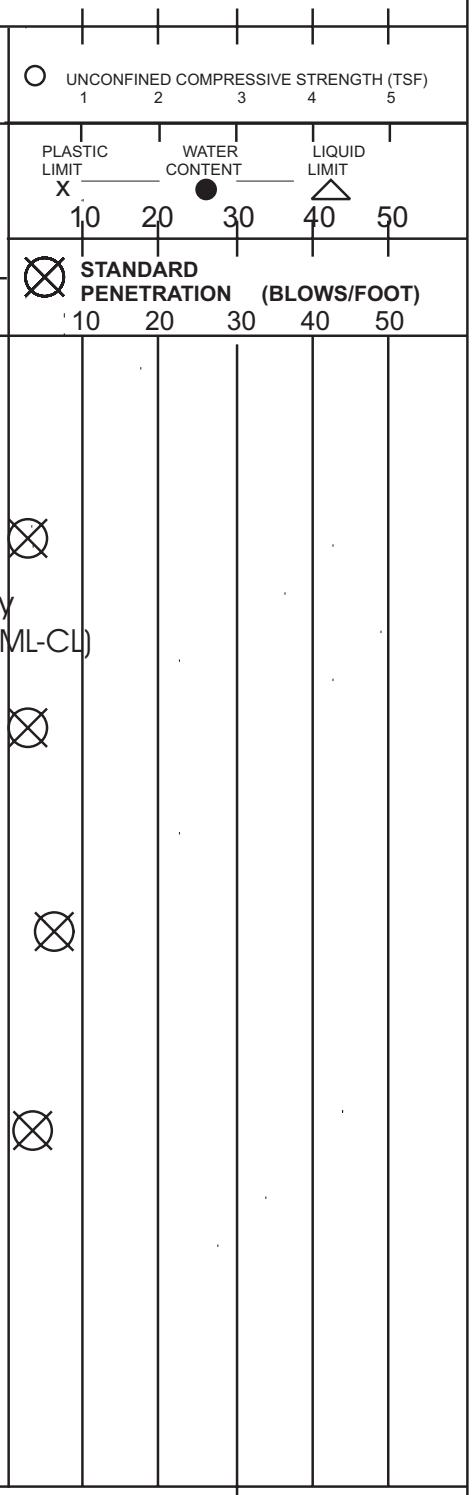
Elevation Depth	Sample Number	Sample Type	Sample Distance	Recovery	DESCRIPTION OF MATERIAL SURFACE ELEVATION 201.0
					4 inch diameter steel casing to 17.5, Rock Bit 10 to 17.5 ft
10					Vane Test with Torque Wrench & SMT Vane with tip at 19.0 feet c= 598 psf c remolded = 380 Casing to 20.0 ft. Acker Drill Vane Test with tip of vane at 21.5 ft. c = 136 psf c remolded = 49 psf
20	S1	SS			Pushed Vane to 22.5 Layers of Silt, gray, wet, very loose (MH) Acker Drill Vane Test with tip of vane at 22.5 ft. c = 272 psf c remolded = 206 psf Casing to 23.0 ft N = 0 Qp = 0 to 0.25 tsf Note that 3 atterberg limits and a hydrometer test were done for S1**
30	S2	SS			Casing to 25.0 ft Acker Drill Vane Test with tip at 26.5 ft. c = 755 psf c remolded = 500 psf Casing to 30.0 ft (pushed with hydraulics) N = 4 Qp = 0.5- 0.75 tsf LL = 66% PL = 65% Silt, gray, wet, loose (MH) slightly plastic
40	S3	SS			Casing to 40.0 ft. & wash out with RB N = 3 Qp = 0.25 to 1.0 tsf
50	S4	SS			Casing to 50.0 ft. & wash out with RB N = 3 Qp = 0 tsf Layers of Silty Clay and Silts or Clayey Silts, wet, soft to stiff or loose (CL, ML, MH, ML-CL) Continued on Next Page

**3 set of atterberg limits and two hydrometer tests on S1
LL = 44 PL =33%
LL = 37%, PL= 26%
LL = 41% PL = 35%
finer than 0.002mm = 27% & 25%

WATER LEVEL 6.5 ft WS 35.0 BCR See B-3 for long term gwl's	VCH FILE NO. 6269	VERNON HOFFMAN PE SOIL AND FOUNDATION ENGINEERING 30 TULIP STREET ROTTERDAM NY 12306 (518) 382-0207 fax (518) 382-1035
DATE Start 22 Jan09 Finish 30 Jan 09	STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES: IN-SITU TRANSITION MAY BE GRADUAL	

PROJECT NAME: Proposed East Tower	LOG OF BORING NO. B-3A(ET2008) Page 2 of 3
PROJECT LOCATION: New Scotland Ave. & Myrtle Ave., Albany, New York	OFFSET - 4 ft east of B-3
CLIENT: Albany Medical Center	

Elevation Depth	Sample Number	Sample Type	Sample Distance	Recovery	DESCRIPTION OF MATERIAL
					SURFACE ELEVATION 201.0
					Continued from previous page
					Casing to 60.0 ft.
60	S5	SS			N - 3 Qp =0 tsf
					Layers of Gray Silty Clay and Silts or Clayey Silts, wet, soft to stiff, or loose (CL, ML and ML-CL)
					Casing to 70.0 ft.
70	S6	SS			N = 3 Qp = 0 to 0.25 tsf
					Casing to 80.0 ft.
80	S7	SS			N = 6 Qp = 0 to 0.25 tsf
					Casing to 90.0 ft.
90	S8	SS			N = 4 Qp = 0.5 tsf
					Open hole to 110.0 ft.
100					
					Continued on Next Page



WATER LEVEL 32 ft BCR See B-3 for long term gwls	VCH FILE NO. 6269	VERNON HOFFMAN PE SOIL AND FOUNDATION ENGINEERING 30 TULIP STREET ROTTERDAM NY 12306 (518) 382-0207 fax (518) 382-1035
DATE Started 2 Feb2009 Finished 8 Feb2009	STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES: IN-SITU TRANSITION MAY BE GRADUAL	

PROJECT NAME: Proposed East Tower	LOG OF BORING NO. B-3A(ET2008) Page 3 of 3
PROJECT LOCATION: New Scotland Ave. & Myrtle Ave., Albany, New York	OFFSET - 4 ft east of B-3
CLIENT: Albany Medical Center	

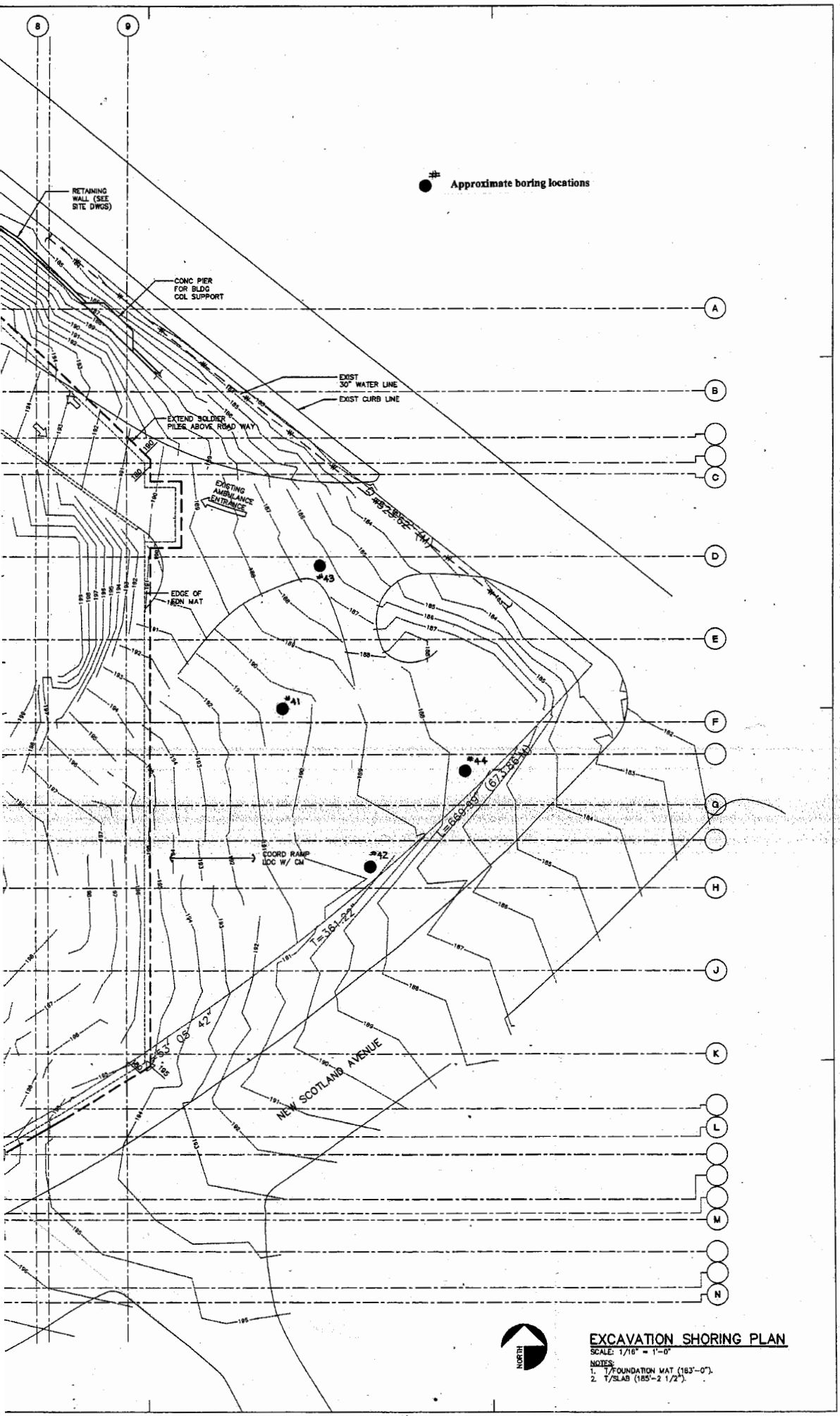
UNCONFINED COMPRESSIVE STRENGTH (TSF) 1 2 3 4 5

PLASTIC LIMIT x — WATER CONTENT ● — LIQUID LIMIT △ 10 20 30 40 50

STANDARD PENETRATION (BLOWS/FOOT) 10 20 30 40 50

Elevation Depth	Sample Number	Sample Type	Sample Distance	Recovery	DESCRIPTION OF MATERIAL SURFACE ELEVATION 201.0	STANDARD PENETRATION (BLOWS/FOOT)
					Continued from previous page Open hole to 110.0 feet	
110		SS			N = 13 Qp = 1.0 tsf Layers of Silty Clay, Silt, and Clayey Silt (CL, ML, ML-CL)	
					change at 117 feet	
					Open hole to 120 feet	
120					Fine to Medium Sand, some Silt, Some Fine Gravel, trace Silt, wet, dense to very dense (SP-SM) glacial till	64/ft
130					Fine to Medium Sand, some Gravel, trace Silt, gray, wet, very dense (SP-SM) with silt layers, glacial till	
						80/ft
140					End of Boring - 137.0 feet	
150						

WATER LEVEL 32 ft BCR See B-3 for long term gwls	VCH FILE NO. 6269	VERNON HOFFMAN PE SOIL AND FOUNDATION ENGINEERING 30 TULIP STREET ROTTERDAM NY 12306 (518) 382-0207 fax (518) 382-1035
DATE Started 2 Feb2009 Finished 8 Feb2009	STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES: IN-SITU TRANSITION MAY BE GRADUAL	



EXCAVATION SHORING PLAN

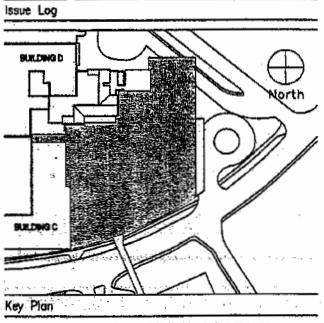
SCALE: 1/16" = 1'-0"

NOTES:
1. T/FOUNDATION MAT (163'-0").
2. T/SLAB (165'-2 1/2").

General Notes:

MARK	ISSUE DATE	DESCRIPTION

Issue Log



Key Plan

TRO Jung | Brannen
ARCHITECTURE | INTERIOR DESIGN | ENGINEERING | MASTERPLANNING
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Tel 617.502.3400 Fax 617.502.3401 www.trojungbrannen.com

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Troy, NY 12180
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PROGRESS PRINT
September 2, 2008
NOT FOR CONSTRUCTION

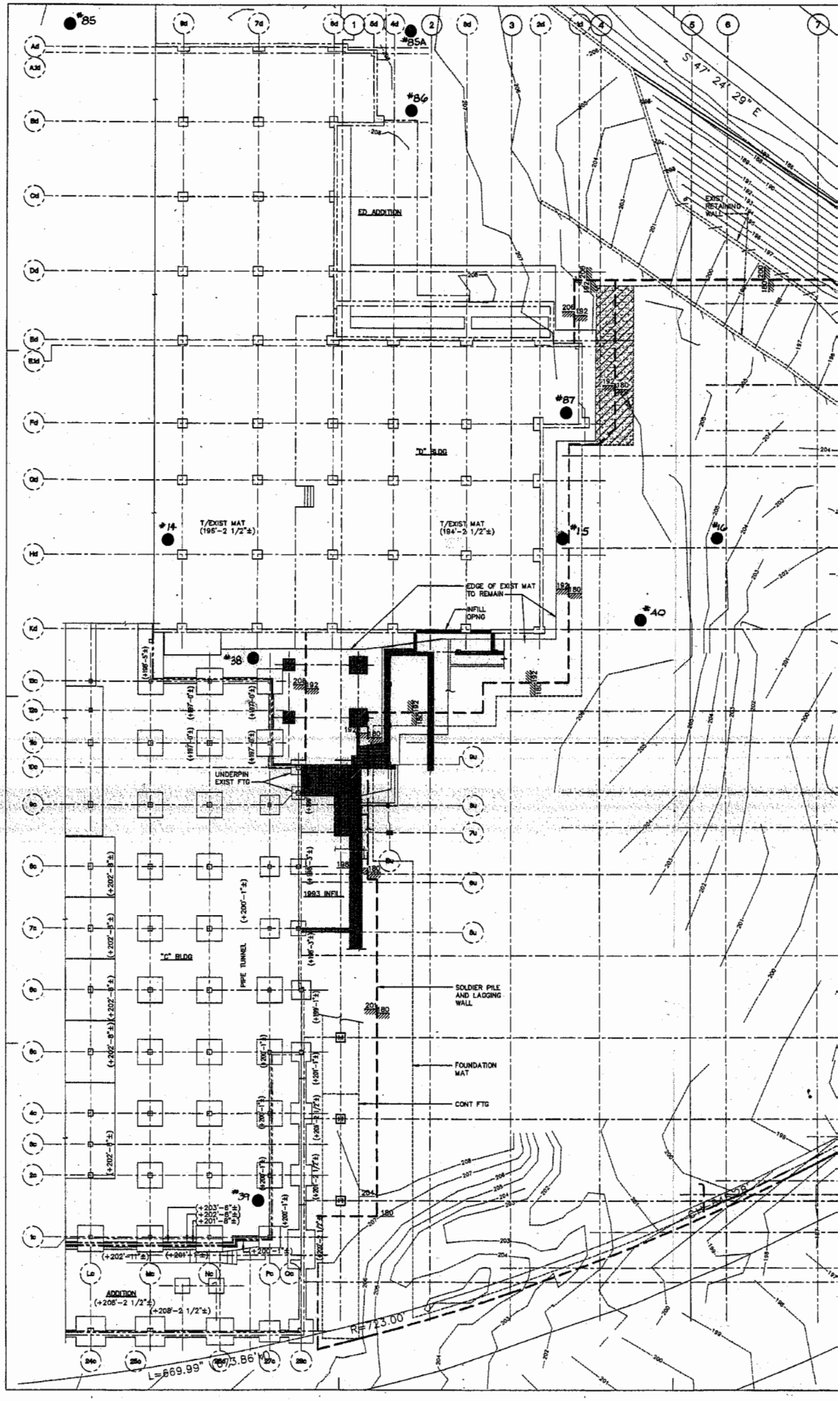
ALBANY Medical Center
CON
Albany, NY

Drawing Title
EXCAVATION SHORING PLAN

Drawing Scale	AS NOTED	
Drawn By	SJW	Commission No.
Approved By	NEW	Date Issued September 2, 2008

Phase / Package Number	Sheet Number
1	S101S

9117



F:\DWG\9017\9101\9101.dwg, 5/22/2009 8:54:03 AM, sjhw42-walker

DATE
STARTED 4/13/87
FINISHED 4/14/87
SHEET 1 OF 4

EMPIRE SOILS INVESTIGATIONS INC.

(SJB)

SUBSURFACE LOG

HOLE NO. B-1 #85
SURF. ELEV. ±203.5
G. W. DEPTH See Note #1

PROJECT Patient Tower Building
Albany Medical Center Hospital

LOCATION Albany, New York

DEPTH-FT.	SAMPLES	SAMPLE NO.	BLOWS ON SAMPLER 0/6	6/12	12/18	N	BLOW ON CASING C	SOIL OR ROCK CLASSIFICATION	NOTES
0		1	2	2		7		Topsoil (6")	Note #1: No groundwater level observations made as water was introduced into borehole.
			5	4				FILL: Brown SILT, Some Clay with seam of black fine to coarse sand & fine gravel, trace cinders (Moist-Medium)	
				4					
5		2	5	5		10		Brown SILT & CLAY (Medium)	
			5						
10		3	3	3		8		-grades varved, mottled gray-brown	
			5	6					
		4	4	3		7		-grades gray	
			4	3					
15		5	2	2		5		-becomes (Soft)	
			3	3					
		6	2	3		7		-seam of SILT, Some Clay	Note #2: WOH indicates split barrel sampler advanced six (6) inches into ground under the weight of drill rods and hammer.
			4	5					
		7	2	3		5			
			2	2					
20		8	1	WOH		2			
			2	3					
		9	2	3		7			
			4	4					
25		10	2	2		4			
			2	2					
		11	3	3		5			
			2	2					
		12	3	2		5			
			3	2					
30		13	3	4		7			
			3	3					
35		14	2	3		6			
			3	4					
40								(Wet-Moist to Soft)	

N = No. blows to drive 2 " spoon 12 " with 140 lb. pin wt. falling 30 "per blow.
C = No. blows to drive ____ " casing ____ " with ____ lb. weight falling ____ "per blow.

CLASSIFICATION Visual by Geotechnical Engineer

METHOD OF INVESTIGATION: 4" I.D. Flush Joint Casing

R/T Form H

DATE
STARTED 4/13/87
FINISHED 4/14/87
SHEET 2 OF 4

EMPIRE SOILS INVESTIGATIONS INC.

SUBSURFACE LOG

HOLE NO. B-1
SURF. ELEV.
G. W. DEPTH See Note #1

PROJECT Patient Tower Building
Albany Medical Center Hospital

LOCATION Albany, New York

DEPTH-FT.	SAMPLES	SAMPLE NO.	BLOWS ON SAMPLER 0/6	6/12	12/18	N	BLOW ON CASING C	SOIL OR ROCK CLASSIFICATION	NOTES
40		15	4	4		8		Gray Varved SILT & CLAY	
			4	7					
45		16	4	4		9			
			5	5					
50		17	3	2		6			
			4	4					
55									
60		18	4	4		9			
			5	5					
65									
70		19	4	4		10			
			6	6					
75									
80								(Wet-Medium)	

N = No. blows to drive 2 " spoon 12 " with 140 lb. pin wt. falling 30 "per blow.

C = No blows to drive ____ " casing ____ " with ____ lb. weight falling ____ "per blow.

CLASSIFICATION Visual by Geotechnical Engineer

METHOD OF INVESTIGATION: 4" I.D. Flush Joint Casing

DATE
STARTED 4/13/87
FINISHED 4/14/87
SHEET 3 OF 4

EMPIRE SOILS INVESTIGATIONS INC.

SUBSURFACE LOG

HOLE NO. B-1
SURF. ELEV.
C. W. DEPTH See Note #1

PROJECT Patient Tower Building
Albany Medical Center Hospital

LOCATION Albany, New York

DEPTH-FT.	SAMPLES	SAMPLE NO.	BLOWS ON SAMPLER 0/6	6/12	12/18	N	BLOW ON CASING C	SOIL OR ROCK CLASSIFICATION	NOTES
80		20	WOR 6	4 8		10		Gray Varved SILT & CLAY	Note #3: WOR indicates split-barrel samples advanced six (6) inches into ground under weight of drill rods alone.
85									
90		21	WOR 6	WOR 9		6			
95									
100		22	WOR 8	2 6		6			
105									
110		23	4 9	WOR 8		12			
115									
120				6				(Wet-Medium)	

N = No. blows to drive 2 " spoon 12 " with 140 lb. pin wt. falling 30 "per blow.
C = No. blows to drive ____ " casing ____ " with ____ lb. weight falling ____ "per blow.

CLASSIFICATION Visual by Geotechnical Engineer

METHOD OF INVESTIGATION: 4" I.D. Flush Joint Casing

DATE
STARTED 4/13/87
FINISHED 4/14/87
SHEET 4 OF 4

EMPIRE SOILS INVESTIGATIONS INC.

SUBSURFACE LOG

HOLE NO. B-1
SURF. ELEV.
G. W. DEPTH See Note #1

PROJECT Patient Tower Building
Albany Medical Center Hospital

LOCATION Albany, New York

DEPTH-FT.	SAMPLES	SAMPLE NO	BLOWS ON SAMPLER 0/6	6/12	12/18	N	BLOW ON CASING C	SOIL OR ROCK CLASSIFICATION	NOTES
120		24	6	7		13		Gray Varved SILT & CLAY	
			9						
125								(Wet-Medium to Soft) ±127'	
130		25	34	38		74		Gray fine SAND & SILT	
			36	33					
135									
				20					
140		26	33	38		71		-becomes fine to medium SAND, little coarse sand, trace silt	
			47						
145									
150									
155		27	19	27		62		-becomes medium to coarse SAND (Wet-Very Compact)	
			35	71					
								End of Boring @ 156.0'	
160									

N = No. blows to drive 2 " spoon 12 " with 140 lb. pin wt. falling 30 "per blow.
C = No blows to drive ____ " casing ____ " with ____ lb. weight falling ____ "per blow.
METHOD OF INVESTIGATION: 4" I.D. Flush Joint Casing

CLASSIFICATION Visual by Geotechnical Engineer

DATE
STARTED 6-3-87
FINISHED 6-3-87
SHEET 1 OF 2

EMPIRE SOILS INVESTIGATIONS INC.

SUBSURFACE LOG

HOLE NO. B-1A #85A
SURF. ELEV. ±203.2'
G. W. DEPTH See Note #1

PROJECT Patient Tower Building
Albany Medical Center Hospital

LOCATION Albany, New York

DEPTH-FT	SAMPLES	SAMPLE NO	BLOWS ON SAMPLER 0/6	6/12	12/18	N	BLOW ON CASING C	SOIL OR ROCK CLASSIFICATION	NOTES
0		1	4	6		14		TOPSOIL ±3"	Note #1: Three-quarter (3/4) inch PVC pipe installed to 40' with two (2) feet of 0.010 slot well screen. Bentonite seal @ 37' to 39'.
			8	6				FILL: Black CINDERS (Dry-Firm) ±2'	
				1				Brown Varved SILT, Some Clay (Moist-Medium) -becomes Gray (Wet)	
5		2	2	4		6			
			3						
10		3U	TUBE						
				2					
		4	3	3		6			
			4						
				2					
15		5	2	2		4		-becomes Varved SILT & CLAY (Soft)	
			3						
20		6U	TUBE						
				2					
		7	2	2		4			
			2						
				1					
25		8	2	2		4			
			2						
30		9U	TUBE						
				2					
		10	3	3		6			
			4						
				2					
35		11	3	3		6			
			4						
40								(Wet-Medium to Soft)	

N = No blows to drive 2 " spoon 12 " with 140 lb. pin wt. falling 30 "per blow.
C = No blows to drive _____ " casing _____ " with _____ lb. weight falling _____ "per blow.

CLASSIFICATION Visual by Geotechnical Engineer

METHOD OF INVESTIGATION 3¼" I.D. Hollow Stem Auger casing

DATE
STARTED 6-3-87
FINISHED 6-3-87
SHEET 2 OF 2

EMPIRE SOILS INVESTIGATIONS INC.

SUBSURFACE LOG

HOLE NO. B-1A
SURF. ELEV. ±203.2'
G. W. DEPTH See Note #1

PROJECT Patient Tower Building
Albany Medical Center Hospital

LOCATION Albany, New York

DEPTH-FT.	SAMPLES	SAMPLE NO.	BLOWS ON SAMPLER 0/6	6/12	12/18	N	BLOW ON CASING C	SOIL OR ROCK CLASSIFICATION	NOTES
40		12U	TUBE					Gray Varved SILT & CLAY	
				2					
		13	3	3		6		(Wet-Soft)	
			3						
45								END OF BORING @ 43.5'	

N = No. blows to drive 2 " spoon 12 " with 140 lb. pin wt. falling 30 "per blow.
C = No. blows to drive _____ " casing _____ " with _____ lb. weight falling _____ "per blow.
METHOD OF INVESTIGATION: 3½" I.D. Hollow Stem Auger Casing

CLASSIFICATION Visual by Geotechnical Engineer

DATE
STARTED 4/22/87
FINISHED 4/22/87
SHEET 1 OF 2

EMPIRE SOILS INVESTIGATIONS INC

SUBSURFACE LOG

HOLE NO. B-2 #86
SURF. ELEV. ±202
G. W. DEPTH See Note #1

PROJECT Patient Tower Building
Albany Medical Center Hospital

LOCATION Albany, New York

DEPTH-FT.	SAMPLES	SAMPLE NO	BLOWS ON SAMPLER 0/6	6/12	12/18	N	BLOW ON CASING C	SOIL OR ROCK CLASSIFICATION	NOTES
0		1	2	3		6		Topsoil (6")	Note #1: At completion of drilling with augers advanced to 60', no water present inside auger casing.
			3	3				FILL: Brown SILT, little sand, trace brick & cinders (Moist - Loose) ±4'	
5		2	2	2		4		Brown to Gray Varved SILT, Some Clay	
			2	2					
10		3	2	2		4			
			2	3					
15		4	3	4		8			
			4	2					
20		5U	TUBE						
		6	3	2		4		-becomes Varved SILT & CLAY	
			2	3					
25		7	2	2		4			
			2	3					
30		8U	TUBE						
		9	2	2		6			
			4	3					
35		10	2	1		3			
			2	4					
40								(Wet-Medium to Soft)	

N = No. blows to drive 2 " spoon 12 " with 140 lb. pin wt. falling 30 "per blow.
C = No blows to drive _____ " casing _____ " with _____ lb. weight falling _____ "per blow.

CLASSIFICATION Visual by Geotechnical Engineer

METHOD OF INVESTIGATION: 3¼" I.D. Hollow Stem Auger Casing

DATE
STARTED 4/22/87
FINISHED 4/22/87
SHEET 2 OF 2

EMPIRE SOILS INVESTIGATIONS INC.

SUBSURFACE LOG

HOLE NO. B-2
SURF. ELEV.
G. W. DEPTH See Note #1

PROJECT Patient Tower Building
Albany Medical Center Hospital

LOCATION Albany, New York

DEPTH-FT.	SAMPLES	SAMPLE NO.	BLOWS ON SAMPLER 0/6	6/12	12/18	N	BLOW ON CASING C	SOIL OR ROCK CLASSIFICATION	NOTES
40	/	11	2	2		6		Gray Varved CLAY, Some Silt	
			4	3					
45	/	12	2	3		6			
			3	3					
50		13U	TUBE						
	/	14	2	3		7			
			4	3					
55	/	15	2	2		6			
			4	2					
60	/	16	2	3		6			
			3	3				(Wet-Medium)	
								End of Boring @ 62.0'	
65									

N = No. blows to drive 2 " spoon 12 " with 140 lb. pin wt. falling 30 "per blow.
C = No blows to drive ____ " casing ____ " with ____ lb. weight falling ____ "per blow.

CLASSIFICATION Visual by Geotechnical Engineer

METHOD OF INVESTIGATION: 3¼" I.D. Hollow Stem Auger Casing

DATE
STARTED 4/20/87
FINISHED 4/22/87
SHEET 1 OF 4

EMPIRE SOILS INVESTIGATIONS INC.

SUBSURFACE LOG

HOLE NO. B-3 #87
SURF. ELEV. ±201
G. W. DEPTH See Note #1

PROJECT Patient Tower Building
Albany Medical Center Hospital

LOCATION Albany, New York

DEPTH-FT	SAMPLES	SAMPLE NO.	BLOWS ON SAMPLER 0/6	6/12	12/18	N	BLOW ON CASING C	SOIL OR ROCK CLASSIFICATION	NOTES
0		1	1	2		6		Topsoil (6")	Note #1: No groundwater present inside casing prior to introducing water into the borehole.
			4	5				Brown CLAY, Some Silt (Medium)	
				2					
5		2	2	5		7			
			8						
				3					
10		3	3	4		7		-becomes Varved SILT, Some Clay	
			5						
				2					
15		4	4	4		8		-becomes Gray	
			4						
				2					
20		5	2	3		5		-becomes (Soft)	
			2						
				3					
25		6	3	3		6		-becomes Varved CLAY, Some Silt	
			5						
				2					
30		7	2	2		4			
			3						
				2					
35		8	2	3		5			
			4						
40				2					

N = No. blows to drive 2 " spoon 12 " with 140 lb. pin wt. falling 30 "per blow.
C = No blows to drive _____ " casing _____ " with _____ lb. weight falling _____ "per blow.

CLASSIFICATION Visual by Goetechnical Engineer

METHOD OF INVESTIGATION: 3¼" I.D. Hollow Stem Auger Casing to 30'

DATE
STARTED 4/20/87
FINISHED 4/22/87
SHEET 2 OF 4

EMPIRE SOILS INVESTIGATIONS INC.

SUBSURFACE LOG

HOLE NO. B-3
SURF. ELEV.
G. W. DEPTH See Note #1

PROJECT Patient Tower Building
Albany Medical Center Hospital

LOCATION Albany, New York

DEPTH-FT	SAMPLES	SAMPLE NO	BLOWS ON SAMPLER 0/6	6/12	12/18	N	BLOW ON CASING C	SOIL OR ROCK CLASSIFICATION	NOTES
40		9	3	3		6		Gray Varved CLAY, Some Silt	
			4						
				2					
45		10	3	3		6			
			4						
				3					
50		11	4	5		9			
			4						
55									
				3					
60		12	5	5		10			
			6						
65									
				WOR					
70		13	3	5		8			Note #2: WOR indicates split barrel sampler advanced six (6) inches into ground under the weight of drill rods alone.
			5						
75									
80				2				(Wet-Medium)	

N = No. blows to drive 2 " spoon 12 " with 140 lb. pin wt. falling 30 "per blow.

C = No blows to drive _____ " casing _____ " with _____ lb. weight falling _____ "per blow.

CLASSIFICATION Visual by Geotechnical Engineer

METHOD OF INVESTIGATION: Remove Augers, Set 4" Dia Flush Joint Casing to 50'

R/T Form H

DATE
STARTED 4/20/87
FINISHED 4/22/87
SHEET 3 OF 4

EMPIRE SOILS INVESTIGATIONS INC.

SUBSURFACE LOG

HOLE NO. B-3
SURF. ELEV.
G. W. DEPTH See Note #1

PROJECT Patient Tower Building
Albany Medical Center Hospital

LOCATION Albany, New York

DEPTH-FT.	SAMPLES	SAMPLE NO	BLOWS ON SAMPLER 0/6	6/12	12/18	N	BLOW ON CASING C	SOIL OR ROCK CLASSIFICATION	NOTES
80		14	3 7	5		8		Gray Varved CLAY, Some Silt	
85									
				2					
90		15	3 6	6		9			
95									
				3					
100		16	3 8	6		9			
105									
				4					
110		17	8 7	8		16			
								(Wet-Medium) ±115'	
115									
120				11				Gray Silt	

N = No. blows to drive 2 " spoon 12 " with 140 lb. pin wt. falling 30 "per blow.
C = No. blows to drive ____ " casing ____ " with ____ lb. weight falling ____ "per blow.

CLASSIFICATION Visual by Geotechnical Engineer

METHOD OF INVESTIGATION: Open Hole Below 50'

R/T Form H

DATE
STARTED 4/20/87
FINISHED 4/22/87
SHEET 4 OF 4

EMPIRE SOILS INVESTIGATIONS INC.

SUBSURFACE LOG

HOLE NO. B-3
SURF. ELEV.
G. W. DEPTH See Note #1

PROJECT Patient Tower Building
Albany Medical Center Hospital

LOCATION Albany, New York

DEPTH-FT.	SAMPLES	SAMPLE NO.	BLOWS ON SAMPLER 0/6	6/12	12/18	N	BLOW ON CASING C	SOIL OR ROCK CLASSIFICATION	NOTES
120		18	45	62		107		Gray SILT	
			66						
125								(Wet-Very Compact) ±126'	
				23					
130		19	47	60		107		Gray fine to medium SAND, little silt	
			100						
135								(Wet-Very Compact) ±136'	
				38					
140		20	49	58		107		TILL: Gray fine to medium SAND, Some Silt	
			48						
145									
		21	87	100/0.0'				-becomes SILT with embedded fine to coarse sand (Wet Very Compact) ±150'	
150								SHALE FRAGMENTS	
								End of Boring @ 152.0'	
155									
160									

N = No. blows to drive 2 " spoon 12 " with 140 lb. pin wt. falling 30 "per blow.

C = No. blows to drive _____ " casing _____ " with _____ lb. weight falling _____ "per blow.

CLASSIFICATION Visual by Geotechnical Engineer

METHOD OF INVESTIGATION: Open Hole Below 50'

R/T Form H

TEST BORINGS # 85, 85A & 86

SAVE

SUMMARY OF LABORATORY TEST RESULTS

NATURAL MOISTURE CONTENT & ATTERBERG LIMITS

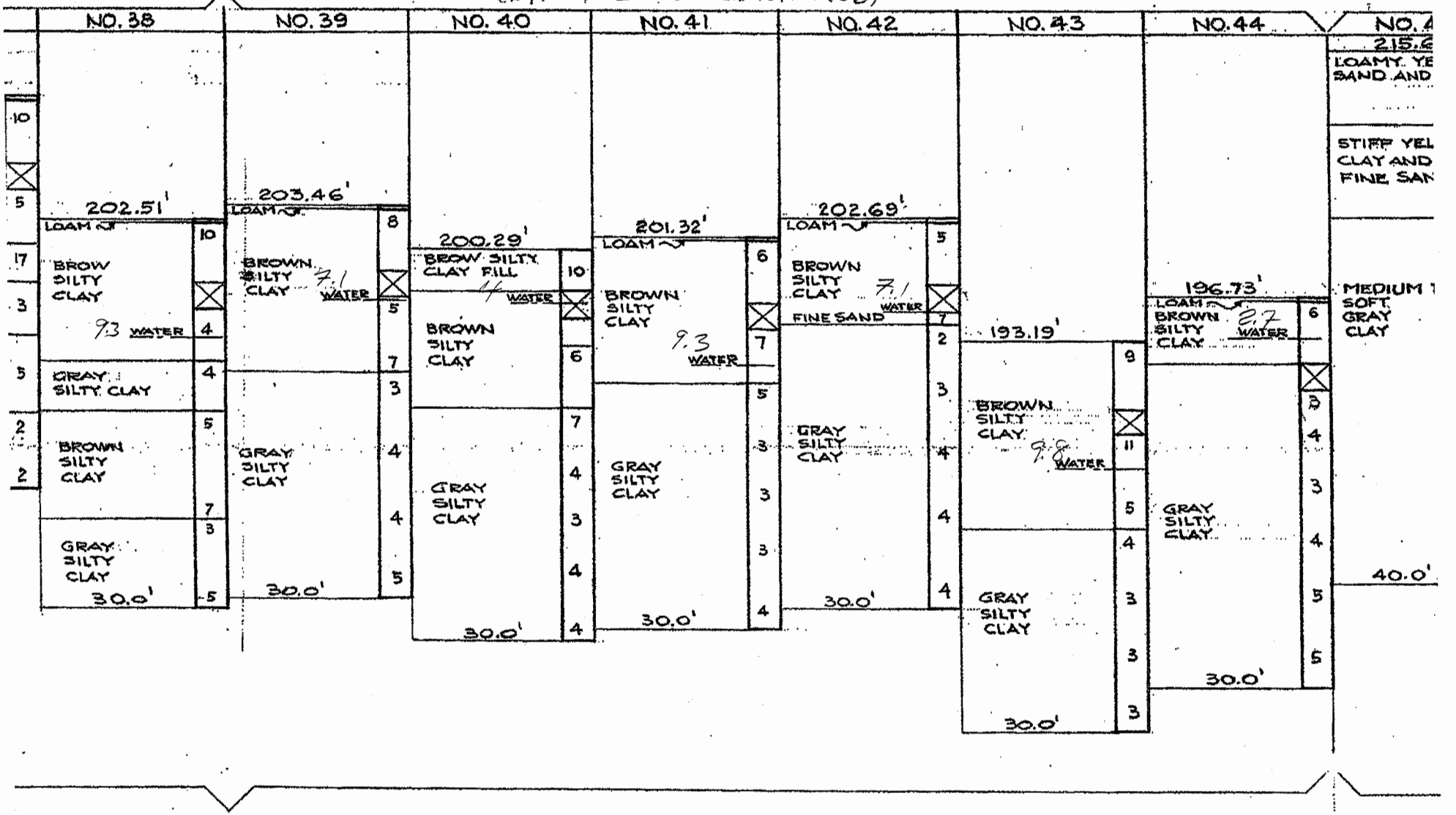
ADDITIONS AND ALTERATIONS

ALBANY MEDICAL CENTER

ALBANY, NEW YORK

	Boring No.	Sample No.	Depth (ft.)	Natural Moisture Content (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)
# 85 →	B-1	4	12-14	35.1	-	-	-
	B-1	6	16-18	32.0	-	-	-
	B-1	8	20-22	35.6	35	22	13
	B-1	10	24-26	30.0	-	-	-
	B-1	13	30-32	45.3	43	24	19
	B-1	15	40-42	46.7	-	-	-
	B-1	17	50-52	35.3	-	-	-
	B-1	19	70-72	31.1	-	-	-
	B-1	20	80-82	32.4	-	-	-
# 86 →	B-2	5U	20-22	27.2	28	19	9
	B-2	8U	30-32	46.4	57	24	33
	B-2	13U	50-52	45.5	46	24	22
# 85A →	B-1A	3U	9.5-11.5	30.6	-	-	-
	B-1A	4	11.5-13.5	-	26	21	5
	B-1A	6U	19.5-21.5	34.6	-	-	-
	B-1A	7	21.5-23.5	-	25	20	5
	B-1A	9U	29.5-31.5	36.2	-	-	-
	B-1A	10	31.5-33.5	-	50	28	22
	B-1A	12U	39.5-41.5	43.1	-	-	-
	B-1A	13	41.5-43.5	-	49	27	22

NURSES DORMITORY (RZ, RW, RE DEMOLISHED 1988)



E DATA INFORMATION SEE S.G.E. ARCH. BLDG.NO. 6118, SHEET NO. 1

TEST BORING REPORT

RAYMOND

CONCRETE PILE DIVISION

BOSTON

To SHMIDT GARDEN & ERIKSON Date APRIL 16 19 64 Job No. EB3721 BOS

Location of Borings ALBANY MEDICAL CENTER BUILDING, ALBANY, NEW YORK.

All borings are plotted to a scale of 1" 8 ft. using as a fixed datum.

No. 45	No. 46	No. 47	No. 48
215.6	216.4	214.6	214.4
GROUND SURFACE 0.0'	GROUND SURFACE 0.0'	GROUND SURFACE 0.0'	GROUND SURFACE 0.0'
LOAMY YELLOW SAND AND CLAY. 3	LOOSE LOAMY SAND. 2.0'	FIRM SAND & GRAVEL FILL. 3.0'	FIRM SAND & GRAVEL FILL. 3.0'
5.5'	STIFF TO MEDIUM YELLOW CLAY SOME FINE SAND. 14	MEDIUM YELLOW CLAY AND FINE SAND. 13	STIFF TO MEDIUM YELLOW CLAY SOME FINE SAND. 13
STIFF YELLOW CLAY AND FINE SAND. 13	9	3 9.0'	8
12.0'		MEDIUM BLUE-GRAY CLAY. 6	12.0'
MEDIUM TO SOFT GRAY CLAY. 5	15.0'	15.0'	MEDIUM BLUE-GRAY CLAY. 6
	UNDISTURBED SAMPLE CLAY. 17.0'	UNDISTURBED SAMPLE. CLAY. 17.0'	
5	MEDIUM BLUE-GRAY CLAY	MEDIUM BLUE-GRAY CLAY.	
	5	5	5
6	25.0'	25.0'	25.0'
6			
5			
4 40.0'			
WM. MCGRATH	R. AUGENSTENE	R. AUGENSTENE	R. AUGENSTENE

Used " of " Casing Used " of " Casing Used " of " Casing Used " of " Casing

Total Footage 115.0'

Foreman AS ABOVE

Figures in right hand column indicate number of blows required to drive sampling pipe one foot, using 140-lb. weight falling 30 inches.

TEST BORING REPORT

RAYMOND

CONCRETE PILE DIVISION

BOSTON

To SHMIDT GARDEN & ERIKSON Date APRIL 16 1964 Job No. EB372IBOS.

Location of Borings ALBANY MEDICAL CENTER BUILDING – ALBANY NEW YORK.

All borings are plotted to a scale of 1" 8 ft. using as a fixed datum.

No. 49			No. 50			No. 51			No. 52		
214.0			211.8			213.3			210.0		
GROUND SURFACE		0.0'	GROUND SURFACE		0.0'	GROUND SURFACE		0.0'	GROUND SURFACE		0.0'
4" ASPHALT. DIRTY SAND & GRAVEL FILL. STIFF RED CLAY AND FINE SAND.	12	3.0'	FIRM SAND & GRAVEL FILL STIFF YELLOW CLAY.	12	1.5'	LOOSE LOAMY SAND AND CLAY. STIFF YELLOW CLAY AND FINE SAND.	13	3.0'	LOOSE LOAMY SAND. STIFF YELLOW CLAY AND FINE SAND.	12	2.0'
VERDIUM TO SOFT RED CLAY AND FINE RED SAND.	5	8.5'	MEDIUM BLUE GRAY CLAY.	6	9.5'		12	11.0' WL		11	10.5'
	5					MEDIUM TO SOFT GRAY CLAY AND FINE SAND.	6	13.0'	MEDIUM GRAY CLAY AND FINE GRAY SAND.	6	
	4			5			6			6	
		25.0'			25.0'		5	25.0'		5	25.0'
WM. MCGRATH			R. AUGENSTENE			WM. MCGRATH			WM. MCGRATH		

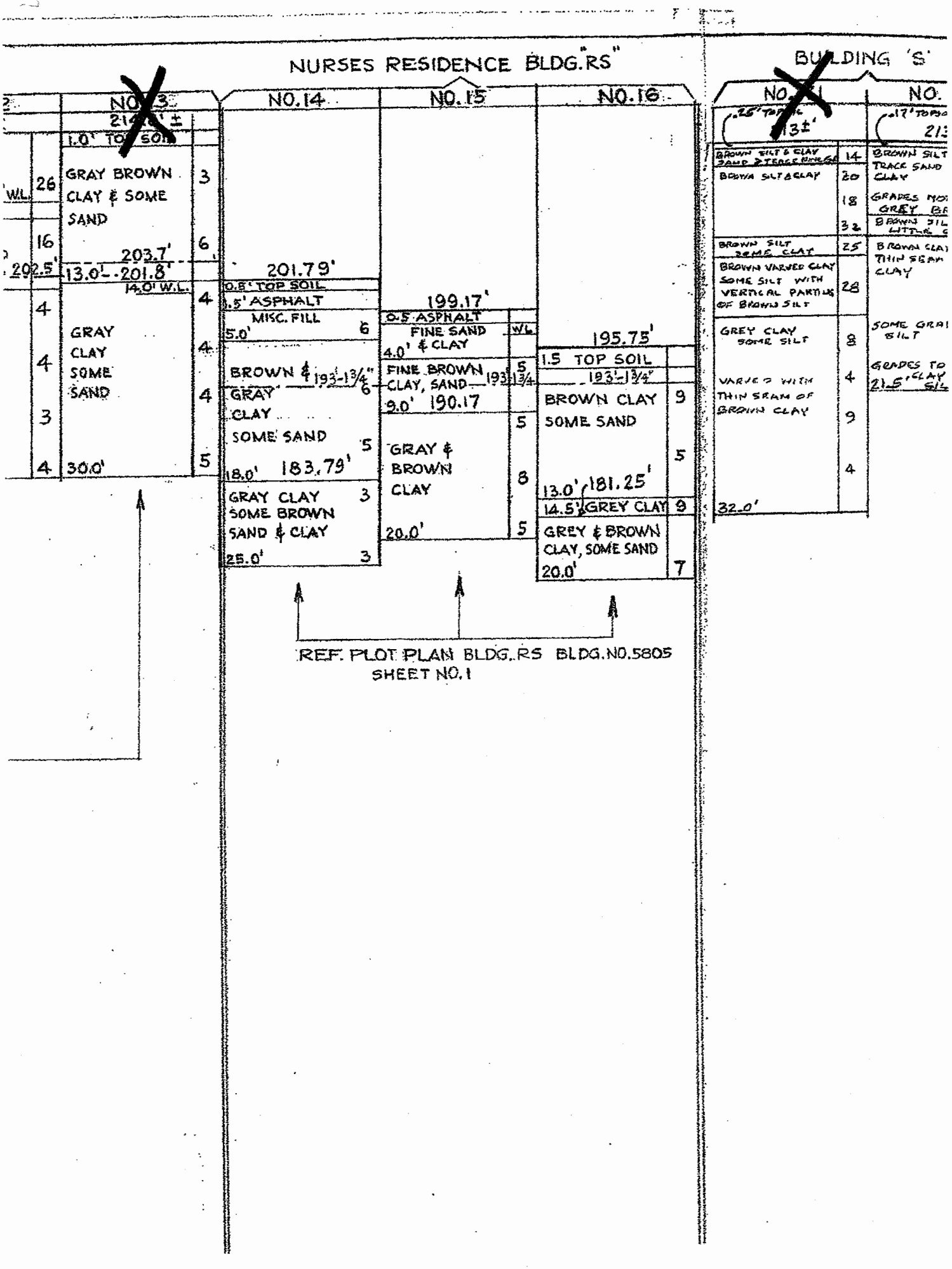
Used ' of " Casing Used ' of " Casing Used ' of " Casing Used ' of " Casing

Total Footage 100.0'

Foreman AS ABOVE

Classification by FOREMAN

Figures in right hand column indicate number of blows required to drive sampling pipe one foot, using 140-lb. weight falling 30 inches.


NURSES RESIDENCE BLDG."RS"
BUILDING 'S'
NO.13
NO.14
NO.15
NO.16
1.0' TOP SOIL
GRAY BROWN CLAY & SOME SAND
203.7'
13.0'
201.8'
14.0' W.L.
GRAY CLAY SOME SAND
30.0'
201.79'
0.5' TOP SOIL
1.5' ASPHALT
MISC. FILL
5.0'
BROWN & GRAY CLAY SOME SAND
18.0'
183.79'
GRAY CLAY SOME BROWN SAND & CLAY
25.0'
199.17'
0.5 ASPHALT
FINE SAND & CLAY
4.0'
FINE BROWN CLAY, SAND
9.0'
190.17
GRAY & BROWN CLAY
20.0'
195.75'
1.5 TOP SOIL
BROWN CLAY SOME SAND
13.0'
181.25'
14.5' GREY CLAY
GREY & BROWN CLAY, SOME SAND
20.0'
BROWN SILT & CLAY
BROWN SILT & CLAY
BROWN SILT SOME CLAY
BROWN VARVED CLAY SOME SILT WITH VERTICAL PARTING OF BROWN SILT
GREY CLAY SOME SILT
VARVED WITH THIN SEAM OF BROWN CLAY
32.0'
BROWN SILT TRACE SAND CLAY
BROWN CLAY THIN SEAM CLAY
SOME GRAY SILT
GRADES TO CLAY SILT
REF. PLOT PLAN BLDG. RS BLDG. NO. 5805
SHEET NO. 1

TEST BORING REPORT

NEW YORK OFFICE COPY

RAYMOND

CONCRETE PILE DIVISION

NEW YORK — GOW DIVISION — BOSTON

To Schmidt, Garden & Erikson — Date May 22, 1961 Job No. BE-463-B03

Location of Borings Proposed Intern Residence, Albany Medical Center, Albany, New York

All borings are plotted to a scale of 1" = 8 ft. using _____ as a fixed datum.

No. 33		No. 34		No. 35		No. 36	
GROUND SURFACE		GROUND SURFACE		GROUND SURFACE		GROUND SURFACE	
LOAM	0.33'	LOAM	0.25'	LOAM	0.25'	LOAM	0.33'
BROWN SILTY CLAY	4	15		BROWN SILTY CLAY ASH FILL	6	13	
	16	24	5.0'		20		5.0'
	5.0'		7.0'		3.5'		7.0'
	7	14			5.0'		
	7.0'		10.0' WATER	BROWN SILTY CLAY	7.0'	BROWN SILTY CLAY	
	9.0' WATER	BROWN & GRAY SILTY CLAY	14.0'		7	8	
GRAY AND BROWN SILTY CLAY	5	5			8.5' WATER		10.0' WATER
	14.0'				5	7	
	3	4		CLAY AND BROWN SILTY CLAY	15.0'	BROWN & GRAY SILTY CLAY	14.0'
GRAY SILTY CLAY					5	6	
	3	3			19.0'		18.0'
		GRAY SILTY CLAY			4	3	
	4	3		GRAY SILTY CLAY	3	GRAY SILTY CLAY	2
	5	5	30.0'		3	3	30.0'
	30.0'				30.0'		

DENOTES SHELBY TUBE

2.5" 2.5" 2.5" 2.5"

Total Footage 120.0'

Figures in right-hand column indicate number of blows

TEST BORING REPORT

RAYMOND

CONCRETE PILE DIVISION

NEW YORK — GOW DIVISION — BOSTON

To ___ chmidt, Jacien & Erikson _____ Date ___ May 22, 19 6 Job No. [illegible]

Location of Borings Proposed Intern Residence, Albany Medical Center, Albany, New York

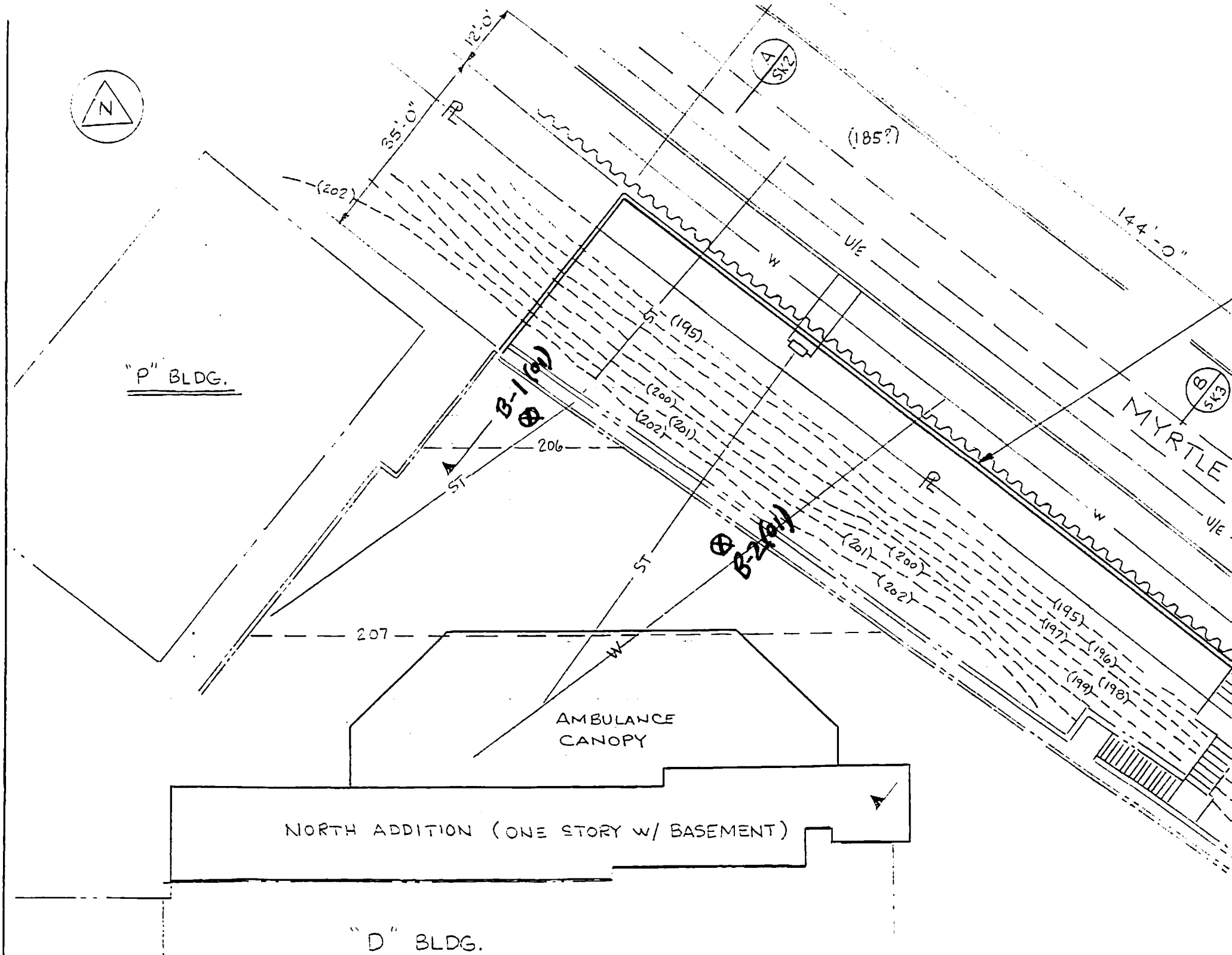
All borings are plotted to a scale of 1" 8 ft. using _____ as a fixed datum.

No. 37		No. 38		No. 39		No. 40	
GROUND SURFACE		GROUND SURFACE		GROUND SURFACE		GROUND SURFACE	
LOAM	0.25'	LOAM	0.25'	LOAM	0.25'	BROWN SILTY CLAY FILL	3.5' WATER
10		10		8		10	
BROWN SILTY CLAY	5.0'	BROWN SILTY CLAY	5.0'	BROWN SILTY CLAY	5.0'	BROWN SILTY CLAY	5.0'
5	7.0' WATER	4	7.0' WATER	5	7.0' WATER	6	7.0'
BROWN AND GRAY SILTY CLAY	11.0'	GRAY SILTY CLAY	11.0'	7	12.5'	7	11.5'
17		4					
BROWN SILTY CLAY	14.0'		15.0'	3		4	
3		5					
BROWN AND GRAY SILTY CLAY	18.0'	BROWN SILTY CLAY		GRAY SILTY CLAY		GRAY SILTY CLAY	
5		7		4		3	
	24.0'		23.0'				
2		3		4		4	
GRAY SILTY CLAY		GRAY SILTY CLAY					
2	30.0'	5	30.0'	5	30.0'	4	30.0
4-27-61	2.5"	4-28-61	2.5"	4-26-61	2.5"	4-27-61	2.5"

☒ DENOTES SHELBY TUBE

Figures in right hand column indicate number of blows required to drive spoon six inches (one foot) using 140 lb. weight falling 30 inches.

Total Footage 120.0'
Foreman C. Ostovitz
Classification by C.O.


N
12'-0"
35'-0"
(202)
(185?)
144'-0"
A
SK2
B
SK3
U/E
W
ST
(195)
(200)
(201)
(202)
(197)
(196)
(199)
(198)
206
207
B-1 (01)
B-2 (01)
"P" BLDG.
MYRTLE
AMBULANCE
CANOPY
NORTH ADDITION (ONE STORY W/ BASEMENT)
"D" BLDG.

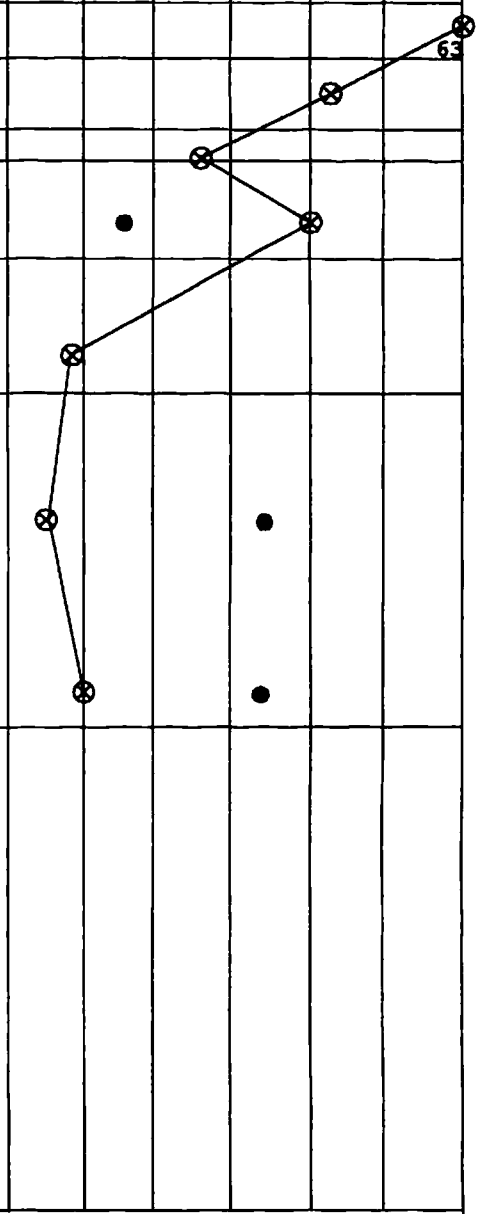
PROJECT NAME:	ALBANY MEDICAL CENTER EMERGENCY DEPARTMENT	LOG OF BORING NO. B-1 (2001)
PROJECT LOCATION:	ALBANY, NEW YORK	OFFSET - ON
CLIENT:	ALBANY MEDICAL CENTER	

UNCONFINED COMPRESSIVE STRENGTH (TSF) 1 2 3 4 5

PLASTIC LIMIT x — WATER CONTENT ● — LIQUID LIMIT △ 10 20 30 40 50

STANDARD PENETRATION (BLOWS/FOOT) 10 20 30 40 50

ELEVATION DEPTH	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL / SURFACE ELEVATION
0					Asphalt
	1	SS			Fine to medium sand, some silt, trace gravel, brown, moist, very dense (SM) frozen uncontrolled fill
	2	SS			Fine to medium sand, some gravel and silt, brown, dry to moist, dense (SM) uncontrolled fill
					Note A: (see below)
5	3	SS			
	4	SS			Fine to medium sand, some clayey silt, trace to some gravel, trace organics, brown, moist, dense (SM) possible uncontrolled fill
		PA			
10	5	SS			Fine to medium sand, trace to some gravel and clayey silt, brown, moist, loose (SM) possible uncontrolled fill
		PA			
15	6	SS			Silt and clay, gray, wet, soft to medium (ML)(CL) varved
		PA			
20	7	SS			
					END OF BORING AT 22.0 FEET
25					
30					
					Note A: Fine to medium sand and gravel, some silt, brown, moist, medium dense (SM)(GM) uncontrolled fill



WATER LEVEL	VCH FILE NO. 5866	VERNON HOFFMAN PE
No water encountered		SOIL & FOUNDATION ENGINEERING
DATE 2/19/01	STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES: IN-SITU, TRANSITION MAY BE GRADUAL.	118 SOUTH FERRY STREET SCHENECTADY NY 12305 (518) 382-0207 [FAX 382-1035]

PROJECT NAME:	ALBANY MEDICAL CENTER EMERGENCY DEPARTMENT	LOG OF BORING NO. B-2 (2001)
PROJECT LOCATION:	ALBANY, NEW YORK	OFFSET - ON
CLIENT:	ALBANY MEDICAL CENTER	

UNCONFINED COMPRESSIVE STRENGTH (TSF): 1 2 3 4 5

PLASTIC LIMIT x — WATER CONTENT ● — LIQUID LIMIT △: 10 20 30 40 50

STANDARD PENETRATION (BLOWS/FOOT): 10 20 30 40 50

ELEVATION DEPTH	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL / SURFACE ELEVATION	STANDARD PENETRATION (BLOWS/FOOT)
0					Asphalt	
	1	SS			Fine sand and silt, trace to some gravel, brown, moist, very dense (SM)(ML) frozen uncontrolled fill	66
	2	SS				66
5	3	SS			Fine to medium sand, some silt, trace to some gravel, brown, moist, dense (SM) uncontrolled fill	
	4	SS			Fine to coarse sand, some clayey silt, trace to some gravel, grayish brown, moist, very dense (SM) possible uncontrolled fill	60
		PA			Fine to coarse sand, some clayey silt, trace to some gravel, brown, moist, medium dense (SM) possible uncontrolled fill	
10	5	SS			Split spoon refusal at 11.0 feet	50/.0
		PA			Cobble	
15	6	SS			Silt, some clay, grayish brown, wet, soft to medium (ML)(CL) varved	
		PA			Clay, some silt, grayish brown, wet, soft to medium (CL)(ML) varved	
20	7	SS				
					END OF BORING AT 22.0 FEET	
25						
30						

WATER LEVEL
No water encountered

DATE
2/19/01

VCH FILE NO. 5866

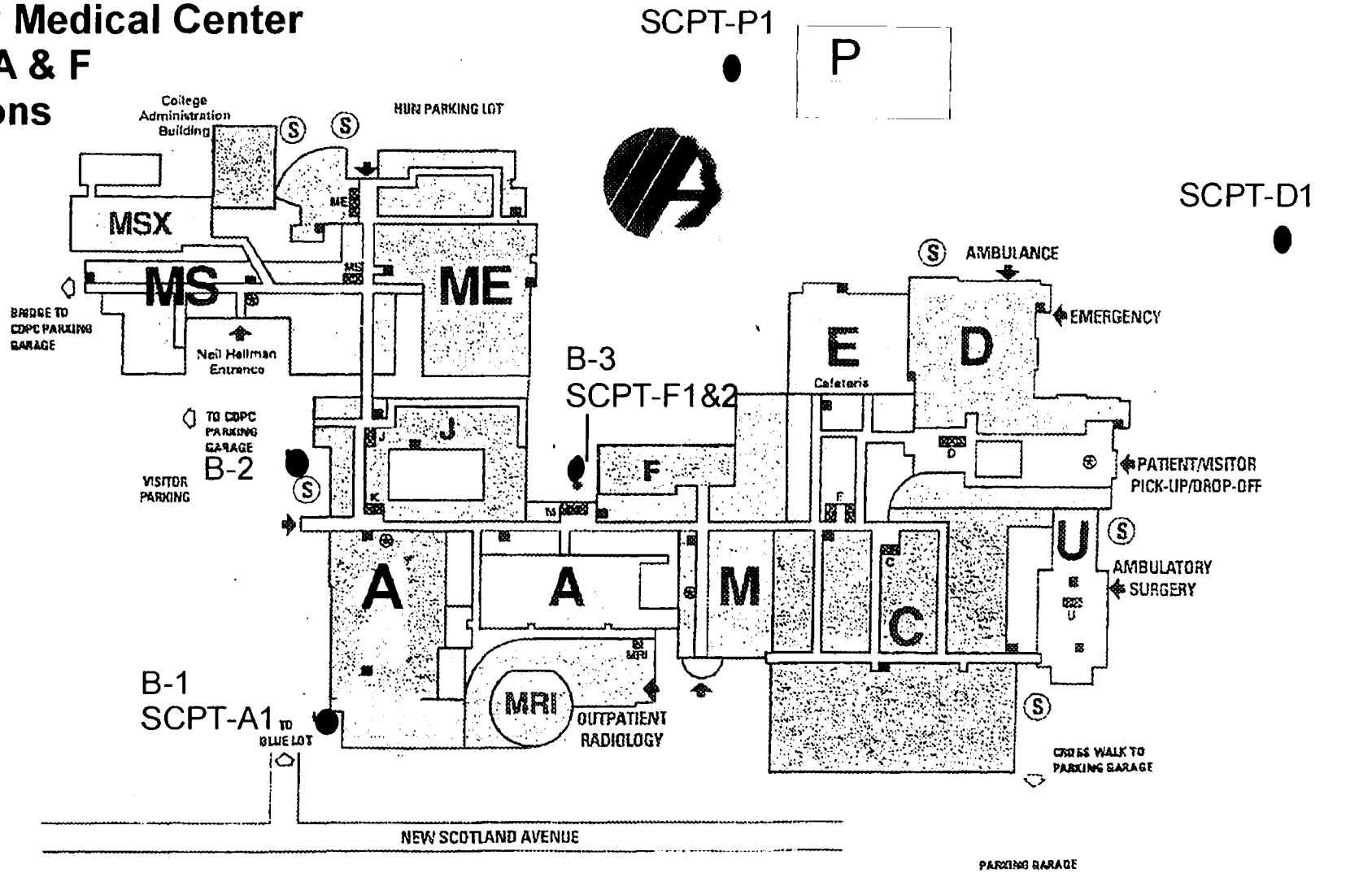
STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES: IN-SITU, TRANSITION MAY BE GRADUAL.

VERNON HOFFMAN PE
SOIL & FOUNDATION ENGINEERING
118 SOUTH FERRY STREET
SCHENECTADY NY 12305
(518) 382-0207
[FAX 382-1035]

Boring & Static Cone Probe Location Diagram

January 2005

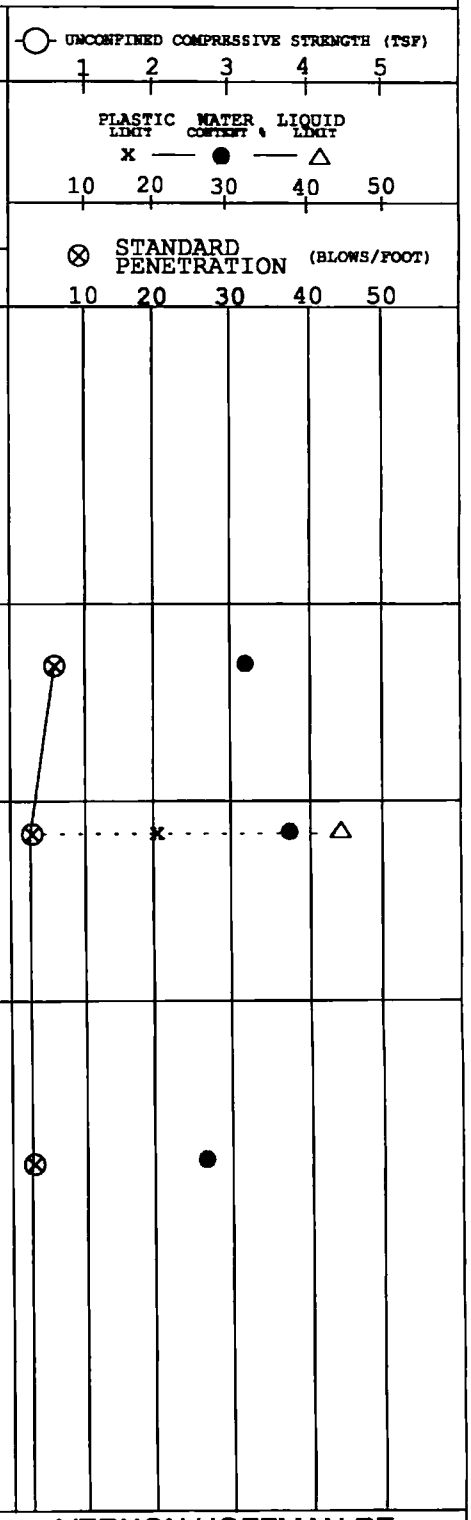
Albany Medical Center Bldgs A & F Additions



● Test Location

PROJECT NAME: ALBANY MEDICAL CENTER BUILDING A	LOG OF BORING NO. B-1
PROJECT LOCATION: ALBANY, NEW YORK	OFFSET - ON
CLIENT: Albany Medical Center	

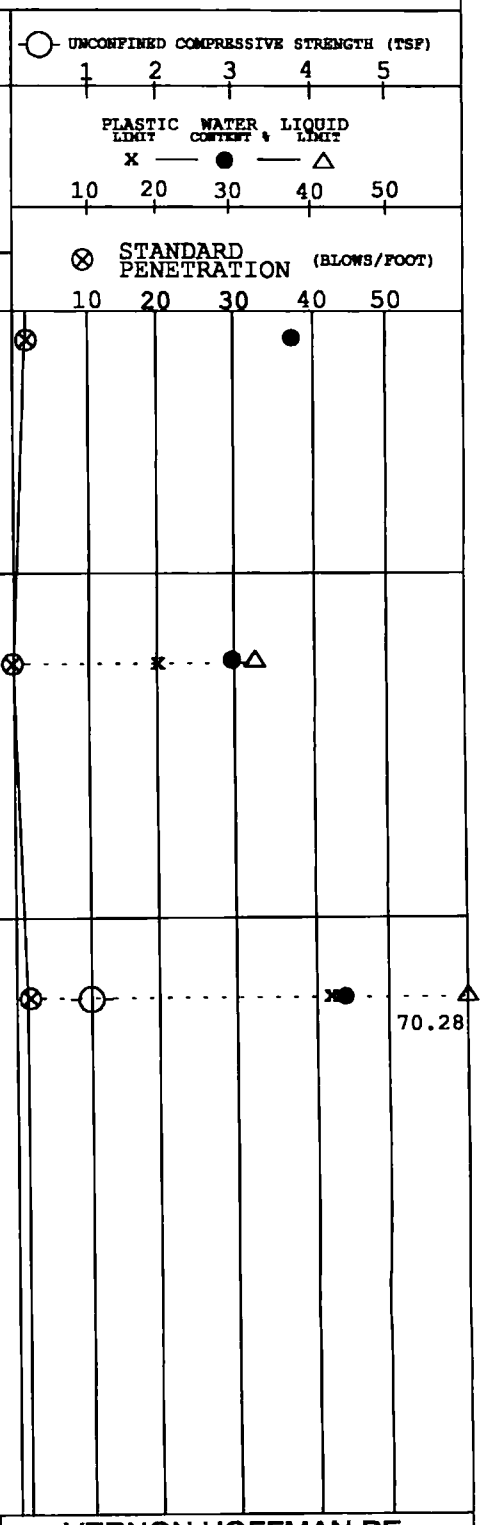
ELEVATION DEPTH	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL / SURFACE ELEVATION
0					
5		RB			NOTE: Install casing to 9.0' without sampling
10	1	SS			Silty clay, brownish red, wet, stiff (CL)
		RB			
15	2	SS			Pressuremeter test @ 15.0'-17.5' Pf = 4.0 tsf Pl = 7.9 tsf Silty clay, dark gray, wet to saturated, stiff (CL)
20		RB			Vane shear test with tip at 22.0' - Su = 978 psf - Su (remolded) = 788 psf Silty clay, wet ( ) trace to some red-brown clay layers
25	3	SS			
		RB			Pressuremeter test @ 25.0'-27.5' Pf = 4.0 tsf Pl = 8.1 tsf
30					NOTE: Pf is the "creep pressure. Pl is the "limit pressure" which is the pressure at the maximum expansion of the probe. Continued Next Page . . . . .



WATER LEVEL Not noted on driller's log	VCH FILE NO. 6131	VERNON HOFFMAN PE SOIL & FOUNDATION ENGINEERING 901 DRAPER AVENUE SCHENECTADY NY 12306 (518) 382-0207 [FAX 382-1035]
DATE Boring started 12/14/04 Boring completed 12/15/04	STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES: IN-SITU, TRANSITION MAY BE GRADUAL.	

PROJECT NAME: ALBANY MEDICAL CENTER BUILDING A	LOG OF BORING NO. B-1
PROJECT LOCATION: ALBANY, NEW YORK	OFFSET - ON
CLIENT: Albany Medical Center	

ELEVATION DEPTH	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL / SURFACE ELEVATION
30	4	SS			
		RB			Pressuremeter test @ 30.0'-32.5' Pf = 5.0 tsf Pl = 9.0 tsf Vane shear test with tip at 37.0' - Su = 1,222 psf - Su (remolded) = 570 psf
35					
40	5	SS			Silty clay, brownish red, wet to saturated, stiff (CL-ML) Pressuremeter test @ 40.0'-42.5' Pf = 6.5 tsf Pl = 10.4 tsf Vane shear test with tip at 47.0' - Su = 1,426 psf - Su (remolded) = 597 psf
		RB			
45					
50	6	RB			Pressuremeter test @ 50.0'-52.5' Pf = 7.5 tsf Pl = 13.3 tsf Silty clay, gray, wet, stiff (CL)
		RB			
55					
60					



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WATER LEVEL Not noted on driller's log	VCH FILE NO. 6131	VERNON HOFFMAN PE SOIL & FOUNDATION ENGINEERING 901 DRAPER AVENUE SCHENECTADY NY 12306 (518) 382-0207 [FAX 382-1035]
DATE Boring started 12/14/04 Boring completed 12/15/04	STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES: IN-SITU, TRANSITION MAY BE GRADUAL.	

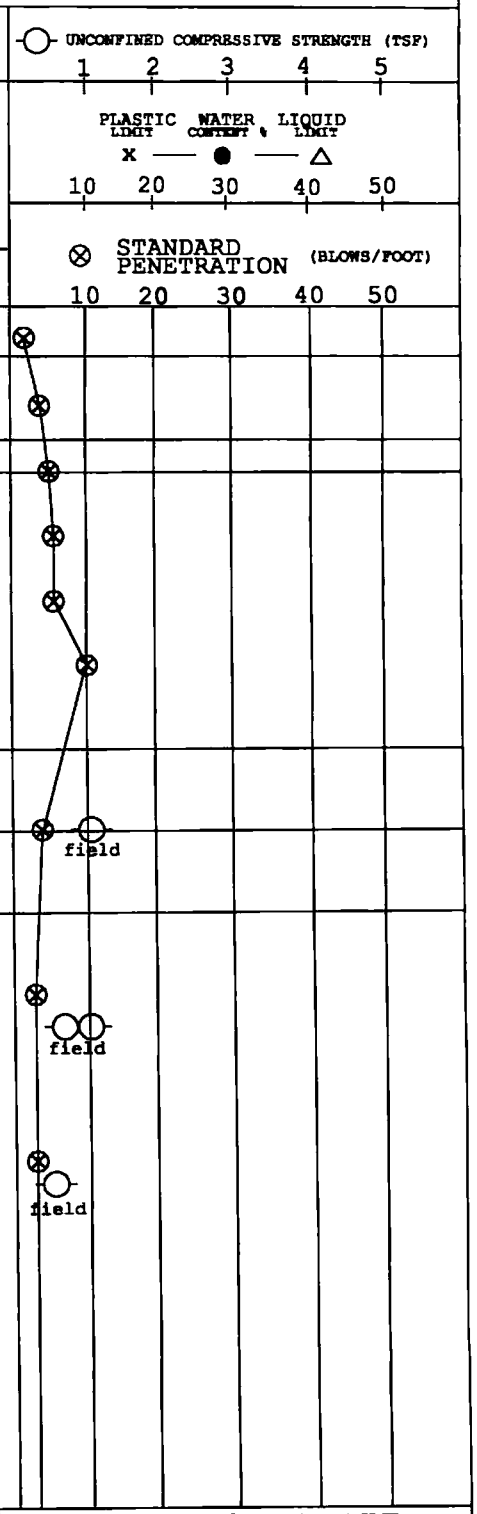
PROJECT NAME: ALBANY MEDICAL CENTER BUILDING A	LOG OF BORING NO. B-1
PROJECT LOCATION: ALBANY, NEW YORK	OFFSET - ON
CLIENT: Albany Medical Center	

ELEVATION DEPTH	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL / SURFACE ELEVATION	UNCONFINED COMPRESSIVE STRENGTH (TSF) 1 2 3 4 5 / PLASTIC LIMIT x — WATER CONTENT ● — LIQUID LIMIT △ 10 20 30 40 50 / STANDARD PENETRATION (BLOWS/FOOT) ⊗ 10 20 30 40 50
60					
					Pressuremeter test @ 65.0'-67.5' Pf = 8.5 tsf Pl = 14.2 tsf
65		RB			NOTE: Boring performed with 4" steel casing and Bentonite slurry
					END OF BORING AT 68.0 FEET
70					
75					
80					
85					
90					

WATER LEVEL Not noted on driller's log	VCH FILE NO. 6131	VERNON HOFFMAN PE SOIL & FOUNDATION ENGINEERING 901 DRAPER AVENUE SCHENECTADY NY 12306 (518) 382-0207 [FAX 382-1035]
DATE Boring started 12/14/04 Boring completed 12/15/04	STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES: IN-SITU, TRANSITION MAY BE GRADUAL.	

PROJECT NAME: ALBANY MEDICAL CENTER BUILDING A	LOG OF BORING NO. B-2
PROJECT LOCATION: ALBANY, NEW YORK	OFFSET - ON
CLIENT: Albany Medical Center	

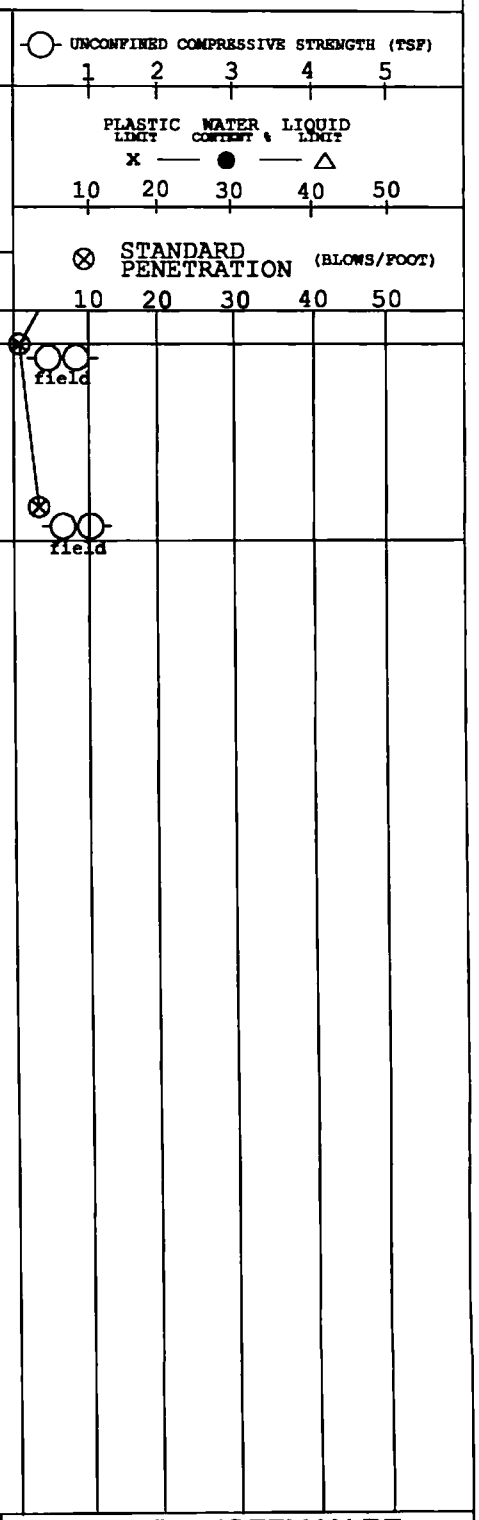
ELEVATION DEPTH	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL / SURFACE ELEVATION
0	1	SS			Note A: (see below)
	2	SS			No recovery
5	3	SS			Note B: (see below)
	4	SS			
	5	SS			Silty clay, trace to some gravel, sand, and concrete fragments, reddish brown, moist, loose, stiff (CL) fill
10	6	SS			
		PA			
15	7	SS			Brown clay layer
		PA			Silty clay, red-brown, moist, stiff to very stiff (CL-CH)
20	8	SS			Silty clay, dark gray, wet, stiff (CL-CH) varved
		PA			
25	9	SS			
		PA			
30					Note A: Silty clay, some fine sand layers, trace organics, brown, moist to wet, loose, stiff (SM)(CL) topsoil and fill Note B: Silty clay, trace brick fragments, yellow-brown, moist, stiff (CL) fill Continued Next Page . . . . .



WATER LEVEL Not noted on driller's log	VCH FILE NO. 6131	VERNON HOFFMAN PE SOIL & FOUNDATION ENGINEERING 901 DRAPER AVENUE SCHENECTADY NY 12306 (518) 382-0207 [FAX 382-1035]
DATE 12/16/04	STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES: IN-SITU, TRANSITION MAY BE GRADUAL.	

PROJECT NAME: ALBANY MEDICAL CENTER BUILDING A	LOG OF BORING NO. B-2
PROJECT LOCATION: ALBANY, NEW YORK	OFFSET - ON
CLIENT: Albany Medical Center	

ELEVATION DEPTH	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL / SURFACE ELEVATION
30	10	SS			Silty clay, dark gray, wet, stiff (CL-CH) varved
		PA			Silty clay, dark gray, wet, stiff (CL)
35	11	SS			
					END OF BORING AT 37.0 FEET
40					
45					
50					
55					
60					



WATER LEVEL Not noted on driller's log	VCH FILE NO. 6131	VERNON HOFFMAN PE SOIL & FOUNDATION ENGINEERING 901 DRAPER AVENUE SCHENECTADY NY 12306 (518) 382-0207 [FAX 382-1035]
DATE 12/16/04	STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES: IN-SITU, TRANSITION MAY BE GRADUAL.	

PROJECT NAME: ALBANY MEDICAL CENTER BUILDING F	LOG OF BORING NO. B-3
PROJECT LOCATION: ALBANY, NEW YORK	OFFSET - ON
CLIENT: Albany Medical Center	

UNCONFINED COMPRESSIVE STRENGTH (TSF): 1 2 3 4 5

PLASTIC LIMIT — WATER CONTENT % — LIQUID LIMIT: 10 20 30 40 50

STANDARD PENETRATION (BLOWS/FOOT): 10 20 30 40 50

ELEVATION DEPTH	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL / SURFACE ELEVATION
0					Asphalt concrete and stone
	1	SS			Silty clay, trace concrete, orange-brown and gray, moist, loose to medium dense, stiff (CL-ML) fill
		PA			Silty clay, orange-brown, moist, loose to medium, stiff (CL-ML) fill
5	2	SS			Pressuremeter test @ 4.5'-7.0' Pf = 3.0 tsf Pl = 5.8 tsf
		PA			
	3	SS			Silty clay, trace brick or orangeburg, red-brown, loose, stiff (CL-ML) fill
10	4	SS			Silty clay, reddish-brown, moist, stiff (CL) weathered Pressuremeter test @ 9.5'-12.0' Pf = 4.5 tsf Pl = 8.8 tsf
		RB			Silty clay, trace to some silt layers, light brown, moist to wet, stiff (ML)(CL)
15	5	SS			Casing to 14.0' Pressuremeter test @ 14.5'-17.0' Pf = 4.5 tsf Pl = 9.1 tsf
		RB			
20	6	SS			Silty clay, trace to some silt layers, gray, wet, stiff (ML)(CL)
		RB			Note A: (see below) Vane shear test with tip at 25.0' - Su = 1,059 psf - Su (remolded) = 380 psf
25	7	SS			Pressuremeter test @ 25.0'-27.5' Pf = 4.0 tsf Pl = 7.1 tsf
		RB			
30					Silty clay, reddish-gray, wet to saturated, loose, medium, stiff (CL) Note A: Silty clay and silt layers, gray, wet to saturated, loose, medium, stiff (ML)(CL)

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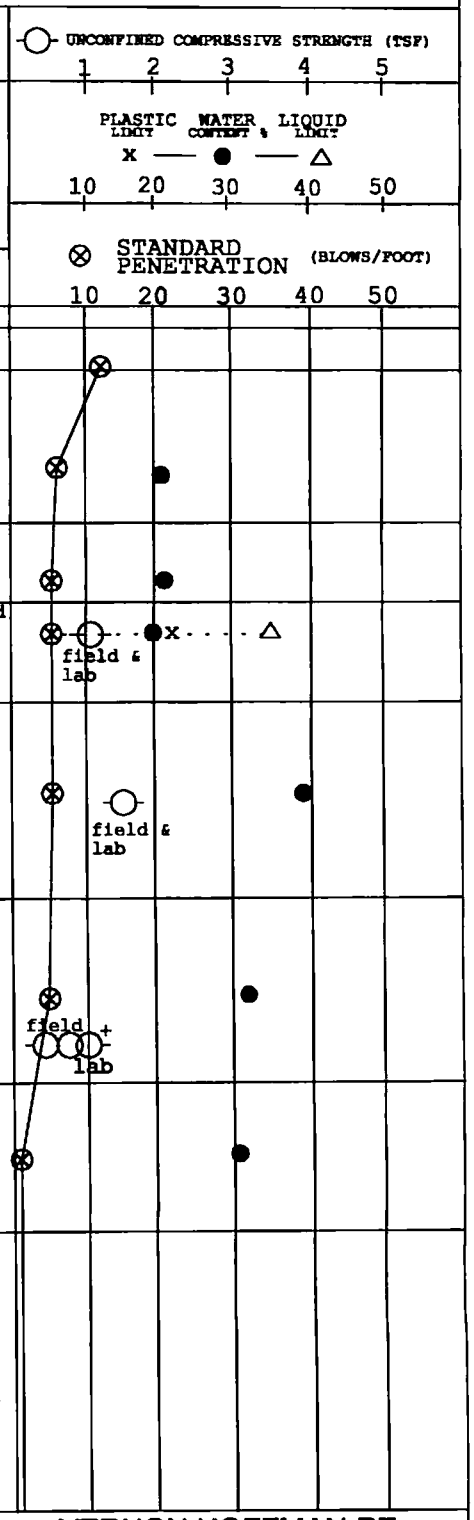


WATER LEVEL Not noted on driller's log	VCH FILE NO. 6131	VERNON HOFFMAN PE SOIL & FOUNDATION ENGINEERING 901 DRAPER AVENUE SCHENECTADY NY 12306 (518) 382-0207 [FAX 382-1035]
DATE 12/14/04	STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES: IN-SITU, TRANSITION MAY BE GRADUAL.	

PROJECT NAME: ALBANY MEDICAL CENTER BUILDING A	LOG OF BORING NO. B-3
PROJECT LOCATION: ALBANY, NEW YORK	OFFSET - ON
CLIENT: Albany Medical Center	

ELEVATION DEPTH	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL / SURFACE ELEVATION	UNCONFINED COMPRESSIVE STRENGTH (TSF) 1 2 3 4 5	PLASTIC LIMIT x — WATER CONTENT ● — LIQUID LIMIT △ 10 20 30 40 50	STANDARD PENETRATION (BLOWS/FOOT) ⊗ 10 20 30 40 50
30	8	SS			Silty clay, reddish-gray, wet to saturated, loose, medium, stiff (CL)			●
					END OF BORING AT 31.5 FEET			
35					NOTE: Pf is the "creep pressure." Pl is the "limit pressure" which is the pressure at the maximum expansion of the probe.			
40					NOTE: Boring performed with PA without fluid to 9.0' Then 4" steel casing to 14.0' Open hole below 14.0' Bentonitic fluid used below 9.0'			
45								
50								
55								
60								

WATER LEVEL Not noted on driller's log	VCH FILE NO. 6131	VERNON HOFFMAN PE SOIL & FOUNDATION ENGINEERING 901 DRAPER AVENUE SCHENECTADY NY 12306 (518) 382-0207 [FAX 382-1035]
DATE 12/14/04	STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES: IN-SITU, TRANSITION MAY BE GRADUAL.	

PRESENTATION OF IN SITU TESTING PROGRAM RESULTS

Albany Medical Center
Albany, New York

November 12, 2004

Prepared for:

Hoffman Engineering
Rotterdam, New York

Prepared by:

ConeTec Inc.
West Berlin, NJ

November 29, 2004

TABLE 1 - SUMMARY OF CPTU SOUNDINGS

Job No.: 04-806
Location: Albany Medical Center - Albany, New York
Client: Hoffman Engineering
Date: November 12, 2004

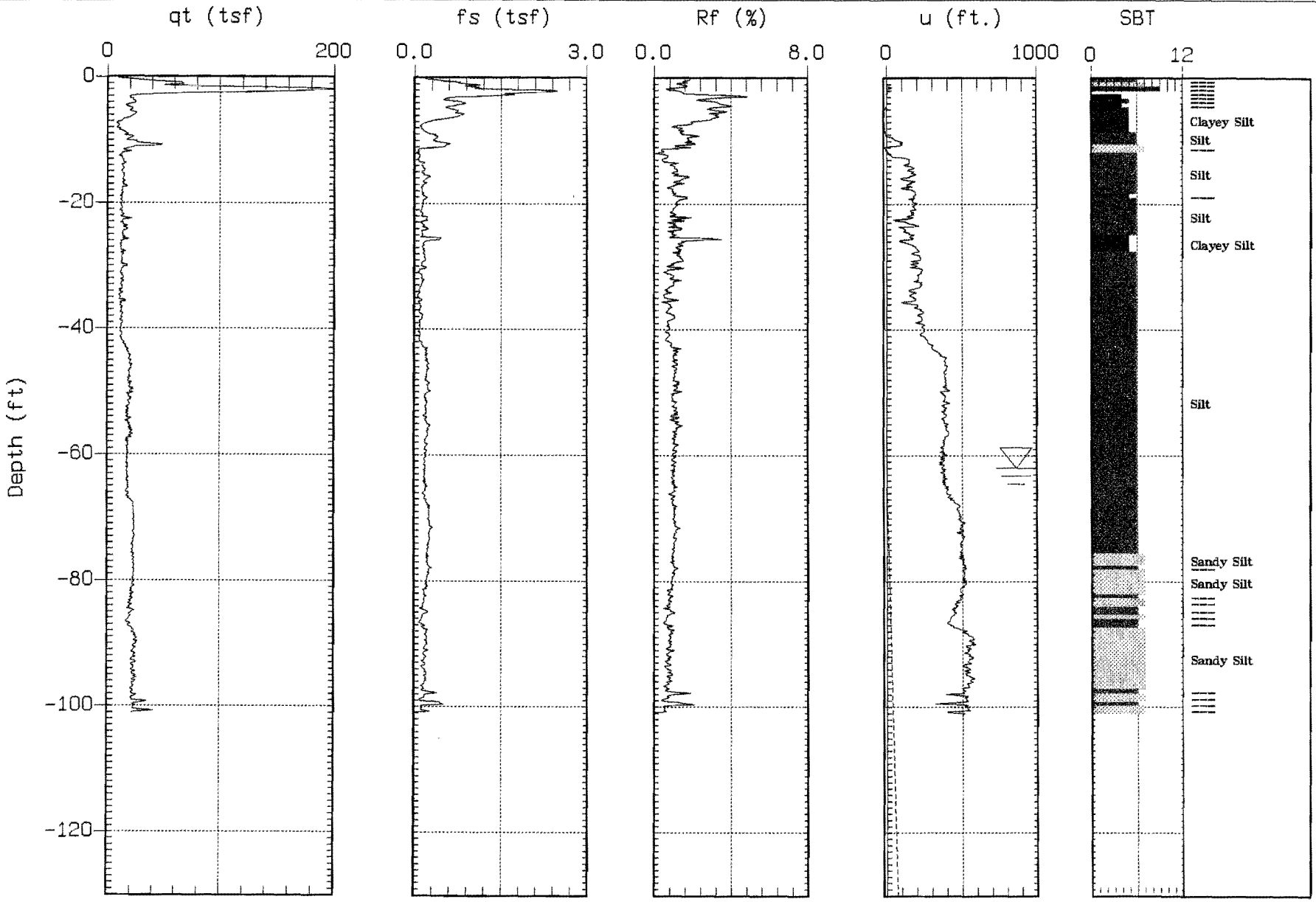
Date	CPTU Sounding	File Name	Total Depth (ft)	Seismic Tests	Comments
November 12, 2004	CPT-A1	806cp01.cor	101.05	30	
November 12, 2004	CPT-D4	806cp4d.cor	100.06	0	
November 12, 2004	CPT-F1	806cp02f.cor	8.37	0	early refusal
November 12, 2004	CPT-F2	806cp2f1.cor	100.23	0	redo of CPT-F1
November 12, 2004	CPT-G1	806cp5g.cor	99.24	3	
November 12, 2004	CPT-P1	806cp3p.cor	126.97	0	
TOTALS:	6 holes	6 files	535.92	33	

CONETEC

Hoffman Engineering

Site:CPT-A1
Location: AMC

Cone:20 Ton AD139
Date:11:12:04 09:49



Max. Depth: 101.05 (ft)
Depth Inc.: 0.164 (ft)

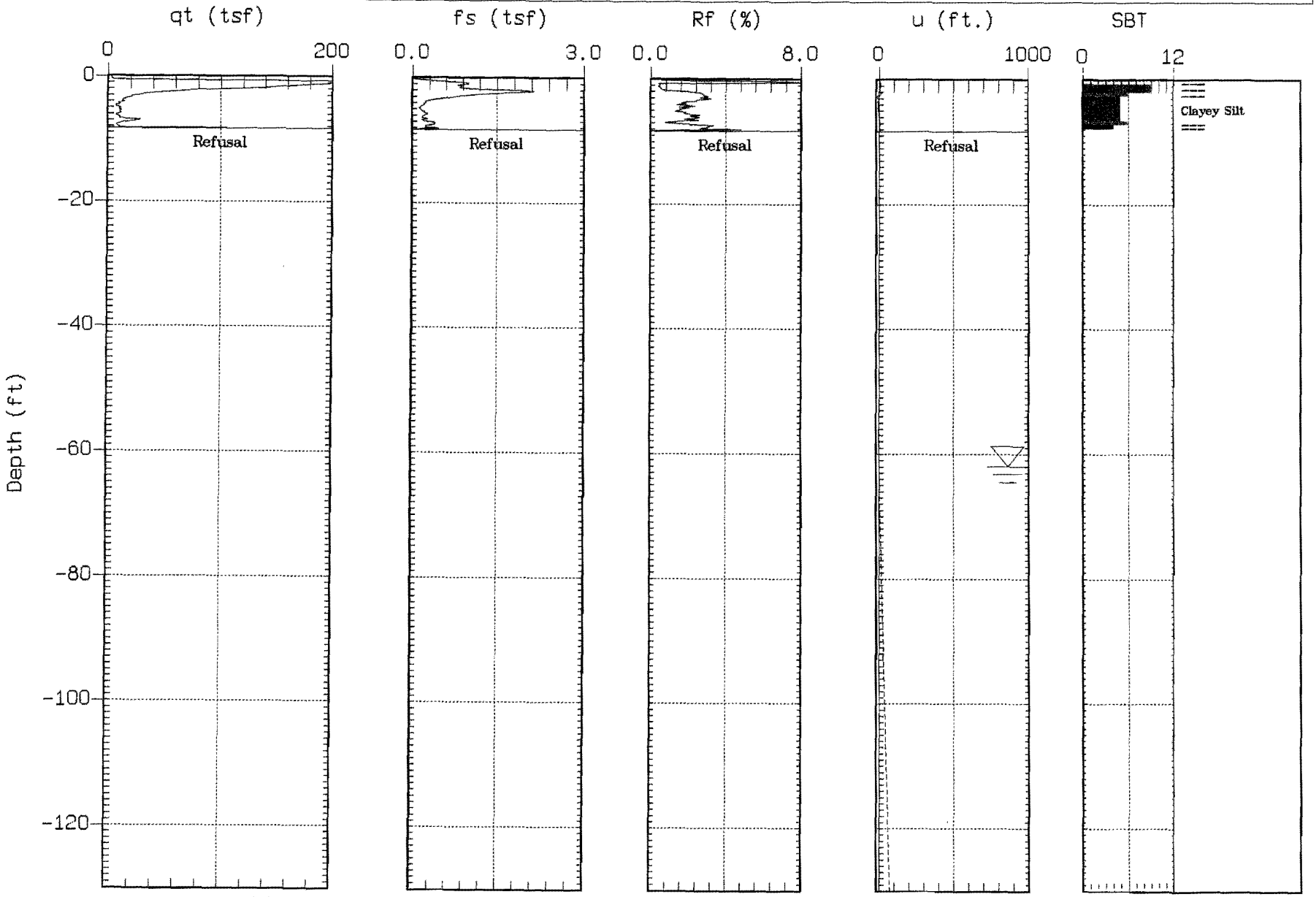
SBT: Soil Behavior Type (Robertson 1990)
Estimated Phreatic Surface

CONETEC

Hoffman Engineering

Site:CPT-F1
Location:AMC

Cone:20 Ton AD139
Date:11:12:04 11:35



Max. Depth: 8.37 (ft)
Depth Inc.: 0.164 (ft)

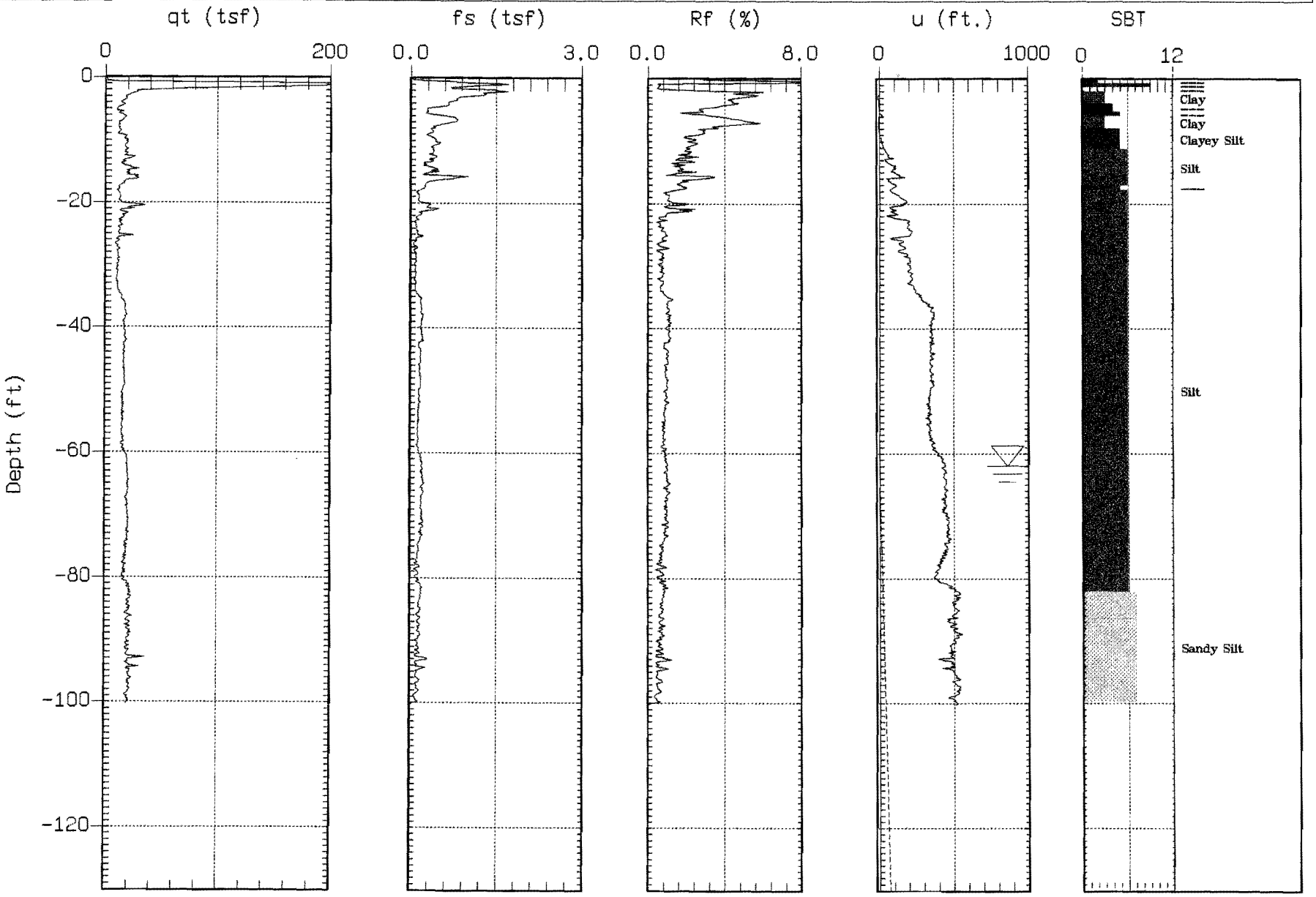
SBT: Soil Behavior Type (Robertson 1990)
Estimated Phreatic Surface

CONETEC

Hoffman Engineering

Site:CPT-F2
Location:AMC

Cone:20 Ton AD139
Date:11:12:04 11:53



Max. Depth: 100.23 (ft)
Depth Inc.: 0.164 (ft)

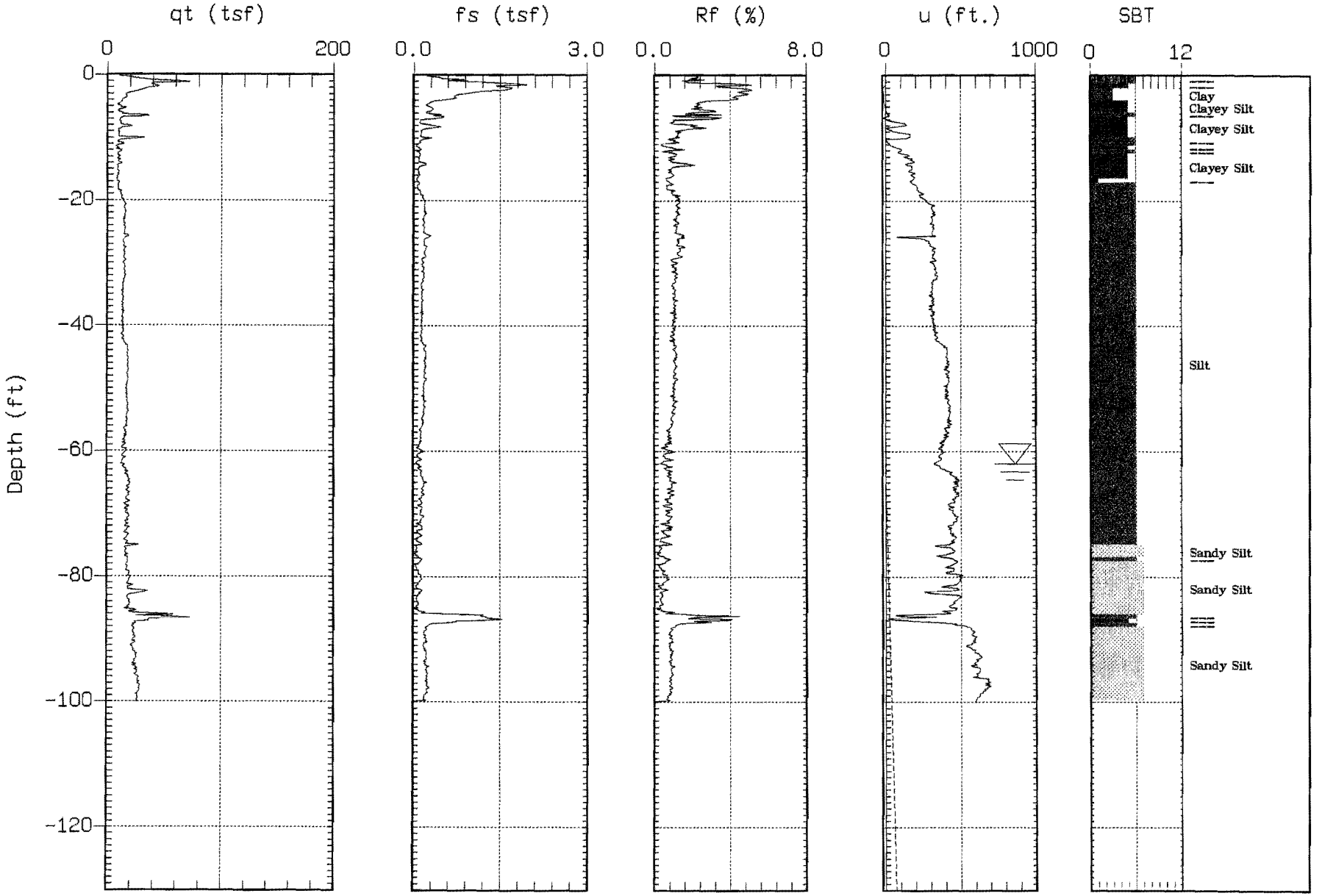
SBT: Soil Behavior Type (Robertson 1990)
Estimated Phreatic Surface

CONETEC

Hoffman Engineering

Site:CPT-D4
Location:AMC

Cone:20 Ton AD139
Date:11:12:04 14:38



Max. Depth: 100.06 (ft)
Depth Inc.: 0.164 (ft)

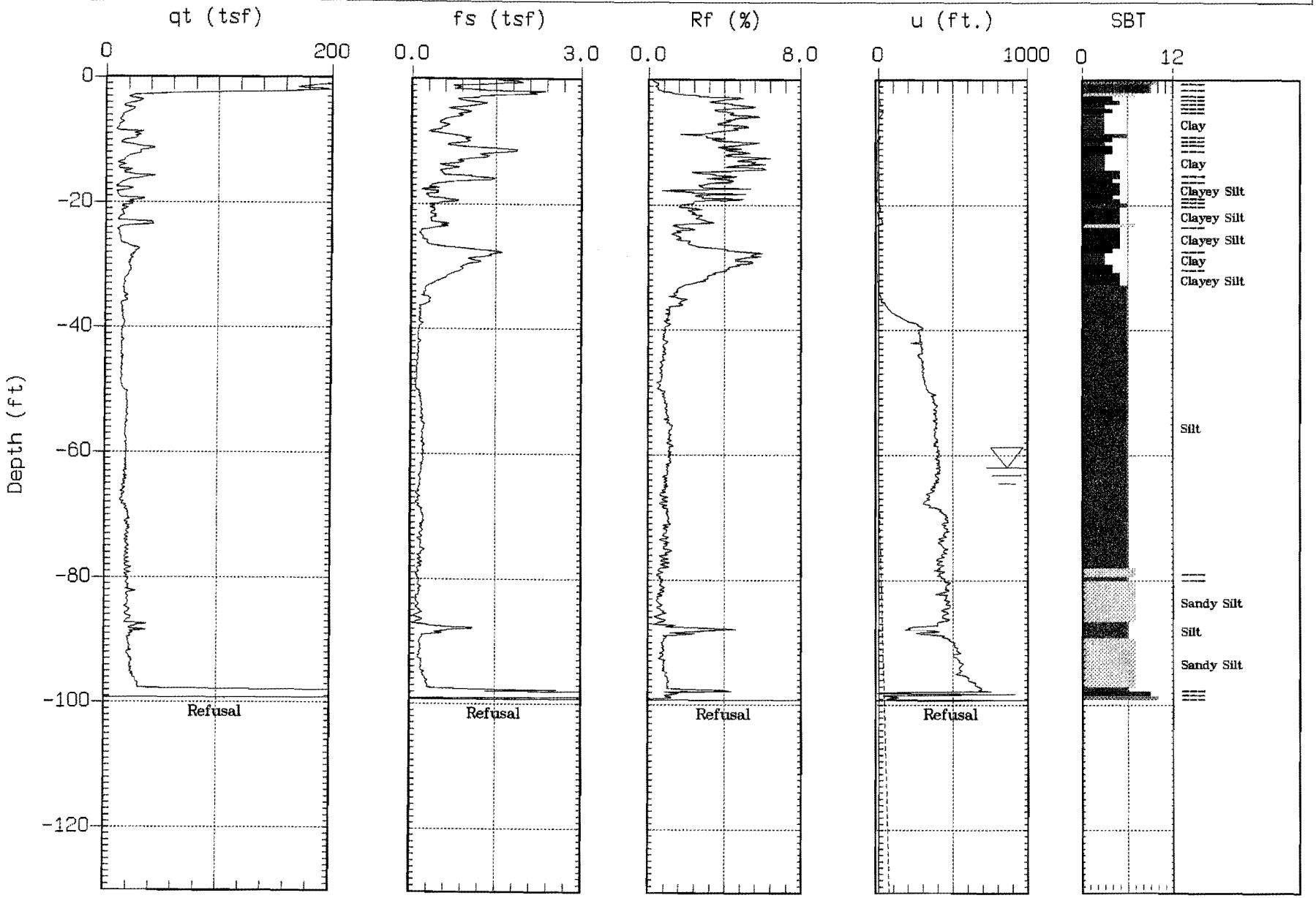
SBT: Soil Behavior Type (Robertson 1990)
Estimated Phreatic Surface

CONETEC

Hoffman Engineering

Site:CPT-G1
Location:AMC

Cone:20 Ton AD139
Date:11:12:04 15:35



Max. Depth: 99.24 (ft)
Depth Inc.: 0.164 (ft)

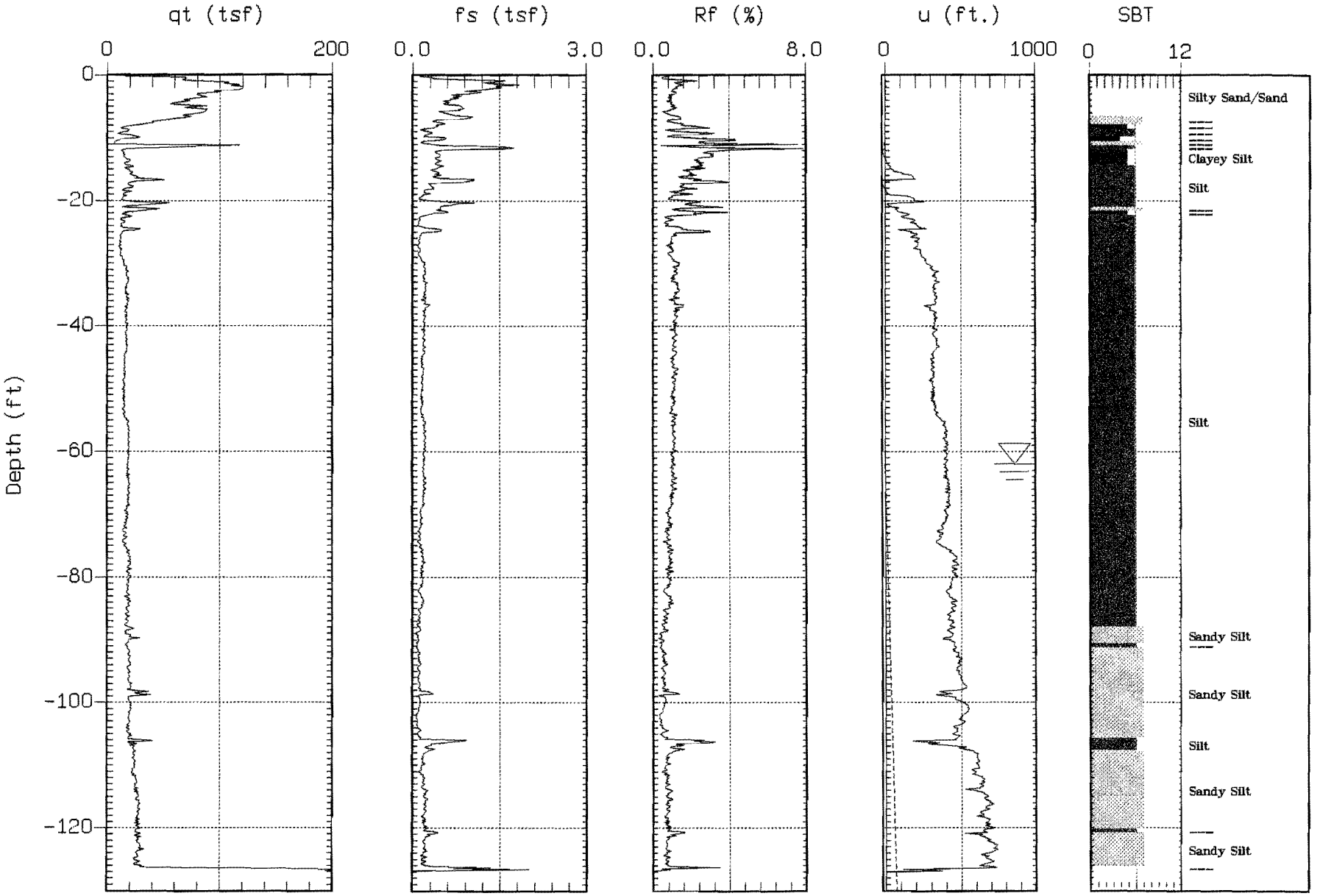
SBT: Soil Behavior Type (Robertson 1990)
Estimated Phreatic Surface

CONETEC

Hoffman Engineering

Site:CPT-P1
Location:AMC

Cone:20 Ton AD139
Date:11:12:04 12:51



Max. Depth: 126.97 (ft)
Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson 1990)
Estimated Phreatic Surface

ConeTec Inc. - CPT Interpretation
Interpretation Output - Release 1.22 Rev. A - Build 5 Format: NLP Imperial
Run No: 04-1129-1222-1842
Job No: 04-806
Client: Hoffman Engineeing
Project: Albany Medical Center - Albany, New York
Site: CPT-A1
Location: AMC
Cone: 20 Ton AD139
CPT Date: 04/12/11
CPT Time: 09:49
CPT File: 806CP01.COR
Northing (m): 0.000000
Easting (m): 0.000000
Elevation (m): 0.000000

Water Table (m): 18.90 (ft): 62.0
Unit Weight of Water (default): 62.40 pcf
Averaging Increment (m): 0.20
Su Nkt used: 15.00 Su/P' (nc): 0.30
Dr Method : Jamiolkowski - All Sands
State Parameter M: 1.20
Used Unit Weights Assigned to Soil Zones
N160Ic Calculated using qc1n
N160cs Calculated using qc1ncs

Col-01 Depth (m)	Col-02 Depth (ft)	Col-03 Elev. (m)	Col-04 Elev. (ft)	Col-05 qc (tsf)	Col-06 qt (tsf)	Col-07 fs (tsf)	Col-08 Rf (%)	Col-09 u (ft)	Col-10 SBT (Zone)	Col-11 SBTn (Zone)
0.100	0.328	-0.100	-0.328	27.92	27.91	0.46	1.65	-0.57	6	-9999.0
0.300	0.984	-0.300	-0.984	63.15	63.15	0.92	1.45	0.78	7	-9999.0
0.500	1.640	-0.500	-1.640	168.39	168.43	1.51	0.90	7.91	9	-9999.0
0.700	2.297	-0.700	-2.297	115.75	115.77	1.96	1.69	3.03	8	8
0.900	2.953	-0.900	-2.953	23.85	23.84	0.92	3.88	-0.38	4	8
1.100	3.609	-1.100	-3.609	23.47	23.47	0.69	2.94	0.05	5	5
1.300	4.265	-1.300	-4.265	19.58	19.56	0.70	3.60	-2.74	4	4
1.500	4.921	-1.500	-4.921	20.95	20.88	0.66	3.17	-14.55	5	5
1.700	5.577	-1.700	-5.577	24.14	24.06	0.77	3.20	-17.97	5	5
1.900	6.234	-1.900	-6.234	19.98	19.89	0.62	3.12	-18.92	5	4
2.100	6.890	-2.100	-6.890	11.27	11.18	0.24	2.15	-18.83	5	4
2.300	7.546	-2.300	-7.546	9.10	9.02	0.11	1.22	-17.51	5	5
2.500	8.202	-2.500	-8.202	10.65	10.58	0.14	1.35	-15.05	5	5
2.700	8.858	-2.700	-8.858	16.11	16.08	0.29	1.79	-7.35	6	5
2.900	9.514	-2.900	-9.514	20.44	20.65	0.37	1.77	44.52	6	5
3.100	10.170	-3.100	-10.170	24.02	24.46	0.47	1.94	93.25	6	5
3.300	10.827	-3.300	-10.827	36.14	36.20	0.44	1.23	12.73	7	5
3.500	11.483	-3.500	-11.483	17.65	17.65	0.06	0.34	0.92	7	5
3.700	12.139	-3.700	-12.139	11.90	12.02	0.06	0.52	25.14	6	5
3.900	12.795	-3.900	-12.795	12.44	13.09	0.06	0.48	137.86	6	5
4.100	13.451	-4.100	-13.451	14.10	14.74	0.13	0.87	135.13	6	5
4.300	14.107	-4.300	-14.107	12.60	13.34	0.14	1.07	157.71	6	4
4.500	14.764	-4.500	-14.764	12.39	13.12	0.14	1.07	155.47	6	4
4.700	15.420	-4.700	-15.420	13.46	14.24	0.21	1.44	165.05	6	4
4.900	16.076	-4.900	-16.076	13.08	13.70	0.18	1.34	132.99	6	4
5.100	16.732	-5.100	-16.732	13.22	13.89	0.16	1.15	143.11	6	4
5.300	17.388	-5.300	-17.388	14.04	14.65	0.12	0.82	130.97	6	4
5.500	18.044	-5.500	-18.044	12.06	12.91	0.13	0.99	181.11	6	4
5.700	18.701	-5.700	-18.701	11.13	11.97	0.16	1.36	178.22	5	4
5.900	19.357	-5.900	-19.357	11.42	12.18	0.16	1.30	162.45	6	4
6.100	20.013	-6.100	-20.013	11.06	11.92	0.14	1.16	182.84	6	4
6.300	20.669	-6.300	-20.669	11.39	12.21	0.12	0.99	175.92	6	4

C

Run No: 04-1129-1222-1842
CPT File: 806CP01.COR

Col-01 Depth (m)	Col-02 Depth (ft)	Col-03 Elev. (m)	Col-04 Elev. (ft)	Col-05 qc (tsf)	Col-06 qt (tsf)	Col-07 fs (tsf)	Col-08 Rf (%)	Col-09 u (ft)	Col-10 SBT (Zone)	Col-11 SBTn (Zone)
6.500	21.325	-6.500	-21.325	11.19	11.97	0.12	0.96	166.18	6	4
6.700	21.981	-6.700	-21.981	12.54	13.24	0.16	1.23	149.28	6	4
6.900	22.638	-6.900	-22.638	15.00	15.42	0.16	1.01	91.27	6	4
7.100	23.294	-7.100	-23.294	13.29	14.01	0.14	0.97	154.01	6	4
7.300	23.950	-7.300	-23.950	15.31	15.84	0.19	1.19	111.54	6	4
7.500	24.606	-7.500	-24.606	12.44	13.14	0.13	0.97	148.48	6	4
7.700	25.262	-7.700	-25.262	12.90	13.64	0.28	2.06	158.23	5	3
7.900	25.918	-7.900	-25.918	13.70	14.19	0.24	1.68	103.79	5	3
8.100	26.574	-8.100	-26.574	10.62	11.45	0.15	1.27	175.46	5	3
8.300	27.231	-8.300	-27.231	10.83	11.77	0.15	1.30	201.60	5	3
8.500	27.887	-8.500	-27.887	12.62	13.49	0.16	1.15	186.26	6	4
8.700	28.543	-8.700	-28.543	11.40	12.42	0.17	1.39	217.73	6	3
8.900	29.199	-8.900	-29.199	11.45	12.29	0.14	1.14	178.77	6	3
9.100	29.855	-9.100	-29.855	14.05	14.92	0.15	0.99	183.97	6	4
9.300	30.511	-9.300	-30.511	11.45	12.51	0.10	0.76	226.16	6	4
9.500	31.168	-9.500	-31.168	10.81	11.79	0.10	0.85	208.36	6	3
9.700	31.824	-9.700	-31.824	12.15	13.11	0.13	0.99	203.86	6	3
9.900	32.480	-9.900	-32.480	11.72	12.71	0.13	1.01	211.37	6	3
10.100	33.136	-10.100	-33.136	11.42	12.38	0.10	0.81	205.09	6	3
10.300	33.792	-10.300	-33.792	10.35	11.11	0.08	0.68	162.81	6	3
10.500	34.448	-10.500	-34.448	10.33	11.09	0.06	0.52	161.51	6	1
10.700	35.105	-10.700	-35.105	10.99	11.82	0.10	0.81	176.78	6	3
10.900	35.761	-10.900	-35.761	11.96	12.65	0.08	0.63	146.26	6	4
11.100	36.417	-11.100	-36.417	10.94	11.87	0.10	0.80	199.64	6	3
11.300	37.073	-11.300	-37.073	10.88	11.95	0.08	0.69	229.05	6	3
11.500	37.729	-11.500	-37.729	11.79	12.78	0.13	1.00	212.41	6	3
11.700	38.385	-11.700	-38.385	10.73	11.78	0.10	0.83	224.13	6	3
11.900	39.042	-11.900	-39.042	11.44	12.48	0.09	0.68	223.14	6	3
12.100	39.698	-12.100	-39.698	10.51	11.61	0.09	0.73	234.96	6	3
12.300	40.354	-12.300	-40.354	10.32	11.39	0.08	0.66	229.71	6	3
12.500	41.010	-12.500	-41.010	10.72	11.84	0.09	0.72	239.72	6	3
12.700	41.666	-12.700	-41.666	11.16	12.39	0.09	0.69	261.67	6	3
12.900	42.322	-12.900	-42.322	13.40	14.74	0.13	0.87	285.74	6	3
13.100	42.978	-13.100	-42.978	15.31	16.72	0.19	1.11	300.16	6	3
13.300	43.635	-13.300	-43.635	16.66	18.25	0.20	1.11	340.52	6	3
13.500	44.291	-13.500	-44.291	18.05	19.78	0.19	0.98	370.50	6	4
13.700	44.947	-13.700	-44.947	18.11	19.87	0.21	1.06	376.37	6	4
13.900	45.603	-13.900	-45.603	18.67	20.47	0.22	1.07	384.04	6	4
14.100	46.259	-14.100	-46.259	18.66	20.44	0.22	1.08	381.05	6	4
14.300	46.915	-14.300	-46.915	17.44	19.19	0.20	1.06	374.78	6	3
14.500	47.572	-14.500	-47.572	17.34	19.11	0.20	1.02	377.05	6	3
14.700	48.228	-14.700	-48.228	17.63	19.42	0.23	1.16	380.60	6	3
14.900	48.884	-14.900	-48.884	17.76	19.54	0.23	1.15	379.19	6	3
15.100	49.540	-15.100	-49.540	19.40	21.20	0.24	1.15	382.64	6	3
15.300	50.196	-15.300	-50.196	18.14	19.86	0.19	0.97	367.46	6	3
15.500	50.852	-15.500	-50.852	17.92	19.68	0.18	0.93	376.68	6	3
15.700	51.509	-15.700	-51.509	17.57	19.36	0.20	1.05	383.20	6	3
15.900	52.165	-15.900	-52.165	16.78	18.52	0.19	1.03	371.73	6	3
16.100	52.821	-16.100	-52.821	16.06	17.79	0.20	1.11	369.04	6	3
16.300	53.477	-16.300	-53.477	16.16	17.94	0.18	0.98	379.89	6	3
16.500	54.133	-16.500	-54.133	16.82	18.53	0.19	1.03	365.67	6	3
16.700	54.789	-16.700	-54.789	16.31	18.10	0.21	1.18	382.07	6	3
16.900	55.446	-16.900	-55.446	17.71	19.51	0.24	1.25	384.75	6	3
17.100	56.102	-17.100	-56.102	18.89	20.74	0.23	1.09	395.00	6	3
17.300	56.758	-17.300	-56.758	18.72	20.55	0.23	1.10	390.29	6	3
17.500	57.414	-17.500	-57.414	16.83	18.58	0.19	1.01	373.72	6	3
17.700	58.070	-17.700	-58.070	16.19	17.93	0.20	1.10	369.88	6	3
17.900	58.726	-17.900	-58.726	16.18	17.87	0.18	1.02	361.18	6	3
18.100	59.382	-18.100	-59.382	16.37	18.06	0.20	1.08	361.09	6	3
18.300	60.039	-18.300	-60.039	16.55	18.29	0.19	1.01	371.13	6	3

Run No: 04-1129-1222-1842
CPT File: 806CP01.COR

Col-01 Depth (m)	Col-02 Depth (ft)	Col-03 Elev. (m)	Col-04 Elev. (ft)	Col-05 qc (tsf)	Col-06 qt (tsf)	Col-07 fs (tsf)	Col-08 Rf (%)	Col-09 u (ft)	Col-10 SBT (Zone)	Col-11 SBTn (Zone)
18.500	60.695	-18.500	-60.695	15.79	17.47	0.17	0.98	358.97	6	3
18.700	61.351	-18.700	-61.351	15.75	17.44	0.17	0.99	360.71	6	3
18.900	62.007	-18.900	-62.007	16.06	17.77	0.18	0.99	364.12	6	3
19.100	62.663	-19.100	-62.663	15.84	17.56	0.17	0.98	367.37	6	3
19.300	63.319	-19.300	-63.319	16.26	18.01	0.17	0.96	373.38	6	3
19.500	63.976	-19.500	-63.976	15.83	17.56	0.17	0.98	369.91	6	3
19.700	64.632	-19.700	-64.632	16.39	18.17	0.19	1.05	380.39	6	3
19.900	65.288	-19.900	-65.288	16.26	18.09	0.19	1.03	390.19	6	3
20.100	65.944	-20.100	-65.944	15.84	17.70	0.15	0.86	395.59	6	3
20.300	66.600	-20.300	-66.600	16.18	18.09	0.17	0.96	408.74	6	3
20.500	67.256	-20.500	-67.256	19.08	21.14	0.20	0.95	438.36	6	3
20.700	67.913	-20.700	-67.913	20.95	23.15	0.24	1.03	468.53	6	3
20.900	68.569	-20.900	-68.569	21.13	23.29	0.25	1.05	461.69	6	3
21.100	69.225	-21.100	-69.225	21.43	23.65	0.25	1.05	473.10	6	3
21.300	69.881	-21.300	-69.881	21.57	23.81	0.24	1.02	477.10	6	3
21.500	70.537	-21.500	-70.537	21.42	23.73	0.25	1.06	493.39	6	3
21.700	71.193	-21.700	-71.193	21.54	23.81	0.28	1.17	483.44	6	3
21.900	71.850	-21.900	-71.850	21.46	23.72	0.27	1.14	481.56	6	3
22.100	72.506	-22.100	-72.506	21.25	23.55	0.25	1.04	490.25	6	3
22.300	73.162	-22.300	-73.162	21.24	23.56	0.26	1.10	494.79	6	3
22.500	73.818	-22.500	-73.818	20.86	23.12	0.24	1.04	482.94	6	3
22.700	74.474	-22.700	-74.474	20.43	22.70	0.23	1.00	486.34	6	3
22.900	75.130	-22.900	-75.130	20.25	22.52	0.23	1.00	484.21	6	3
23.100	75.786	-23.100	-75.786	20.71	22.98	0.22	0.95	485.13	7	3
23.300	76.443	-23.300	-76.443	20.67	22.96	0.22	0.95	490.48	7	3
23.500	77.099	-23.500	-77.099	21.19	23.53	0.22	0.94	498.38	7	3
23.700	77.755	-23.700	-77.755	21.05	23.42	0.26	1.10	506.39	6	3
23.900	78.411	-23.900	-78.411	21.38	23.72	0.24	1.00	498.67	7	3
24.100	79.067	-24.100	-79.067	20.92	23.26	0.23	0.97	499.37	7	3
24.300	79.723	-24.300	-79.723	20.64	22.98	0.21	0.89	500.61	7	3
24.500	80.380	-24.500	-80.380	20.38	22.75	0.21	0.90	507.58	7	3
24.700	81.036	-24.700	-81.036	20.01	22.27	0.19	0.86	483.65	7	3
24.900	81.692	-24.900	-81.692	19.58	21.86	0.17	0.76	485.95	7	3
25.100	82.348	-25.100	-82.348	18.77	21.00	0.18	0.85	477.63	6	3
25.300	83.004	-25.300	-83.004	19.21	21.40	0.17	0.77	466.49	7	3
25.500	83.660	-25.500	-83.660	18.21	20.31	0.15	0.72	448.83	7	3
25.700	84.317	-25.700	-84.317	17.41	19.44	0.14	0.71	434.20	6	3
25.900	84.973	-25.900	-84.973	19.58	21.64	0.20	0.93	439.38	6	3
26.100	85.629	-26.100	-85.629	17.92	19.87	0.13	0.64	415.89	7	1
26.300	86.285	-26.300	-86.285	15.75	17.63	0.10	0.57	401.10	6	1
26.500	86.941	-26.500	-86.941	17.39	19.35	0.14	0.73	418.58	6	3
26.700	87.597	-26.700	-87.597	19.93	22.22	0.19	0.85	489.79	7	3
26.900	88.254	-26.900	-88.254	21.14	23.55	0.20	0.83	514.14	7	3
27.100	88.910	-27.100	-88.910	22.53	25.15	0.21	0.83	559.00	7	3
27.300	89.566	-27.300	-89.566	22.64	25.22	0.20	0.80	549.40	7	3
27.500	90.222	-27.500	-90.222	21.43	23.94	0.19	0.81	535.86	7	3
27.700	90.878	-27.700	-90.878	21.46	23.95	0.19	0.78	530.78	7	3
27.900	91.534	-27.900	-91.534	21.21	23.67	0.16	0.69	526.53	7	3
28.100	92.190	-28.100	-92.190	20.52	23.09	0.18	0.77	548.17	7	3
28.300	92.847	-28.300	-92.847	21.00	23.47	0.16	0.68	527.58	7	3
28.500	93.503	-28.500	-93.503	20.04	22.43	0.14	0.64	509.83	7	3
28.700	94.159	-28.700	-94.159	20.54	22.99	0.18	0.80	524.52	7	3
28.900	94.815	-28.900	-94.815	20.67	23.12	0.18	0.79	524.76	7	3
29.100	95.471	-29.100	-95.471	21.15	23.74	0.19	0.81	553.74	7	3
29.300	96.127	-29.300	-96.127	21.13	23.63	0.16	0.69	535.00	7	3
29.500	96.784	-29.500	-96.784	20.11	22.52	0.14	0.63	514.20	7	3
29.700	97.440	-29.700	-97.440	19.42	21.75	0.23	1.05	497.61	6	3
29.900	98.096	-29.900	-98.096	20.91	23.09	0.19	0.80	466.06	7	3
30.100	98.752	-30.100	-98.752	19.18	21.61	0.11	0.49	518.13	7	1
30.300	99.408	-30.300	-99.408	25.61	27.73	0.39	1.39	451.60	6	3

C

Run No: 04-1129-1222-1842
CPT File: 806CP01.COR

Col-01 Depth (m)	Col-02 Depth (ft)	Col-03 Elev. (m)	Col-04 Elev. (ft)	Col-05 qc (tsf)	Col-06 qt (tsf)	Col-07 fs (tsf)	Col-08 Rf (%)	Col-09 u (ft)	Col-10 SBT (Zone)	Col-11 SBTn (Zone)
30.500	100.064	-30.500	-100.064	21.00	23.44	0.12	0.49	520.06	7	1

ConeTec Inc. - CPT Interpretation
Interpretation Output - Release 1.22 Rev. A - Build 5 Format: NLP Imperial
Run No: 04-1129-1222-2122
Job No: 04-806
Client: Hoffman Engineeing
Project: Albany Medical Center - Albany, New York
Site: CPT-D4
Location: AMC
Cone: 20 Ton AD139
CPT Date: 04/12/11
CPT Time: 14:38
CPT File: 806CP4D.COR
Northing (m): 0.000000
Easting (m): 0.000000
Elevation (m): 0.000000

Water Table (m): 18.90 (ft): 62.0
Unit Weight of Water (default): 62.40 pcf
Averaging Increment (m): 0.20
Su Nkt used: 15.00 Su/P' (nc): 0.30
Dr Method : Jamiolkowski - All Sands
State Parameter M: 1.20
Used Unit Weights Assigned to Soil Zones
N160Ic Calculated using qc1n
N160cs Calculated using qc1ncs

Col-01 Depth (m)	Col-02 Depth (ft)	Col-03 Elev. (m)	Col-04 Elev. (ft)	Col-05 qc (tsf)	Col-06 qt (tsf)	Col-07 fs (tsf)	Col-08 Rf (%)	Col-09 u (ft)	Col-10 SBT (Zone)	Col-11 SBTn (Zone)
0.100	0.328	-0.100	-0.328	22.26	22.26	0.51	2.29	-0.09	6	-9999.0
0.300	0.984	-0.300	-0.984	53.60	53.60	1.16	2.16	-0.47	6	8
0.500	1.640	-0.500	-1.640	42.00	41.96	1.66	3.95	-8.97	5	8
0.700	2.297	-0.700	-2.297	29.39	29.30	1.40	4.79	-18.55	3	9
0.900	2.953	-0.900	-2.953	17.97	17.89	0.83	4.65	-15.38	3	9
1.100	3.609	-1.100	-3.609	15.75	15.68	0.66	4.19	-13.16	3	4
1.300	4.265	-1.300	-4.265	11.95	11.89	0.29	2.42	-11.54	5	5
1.500	4.921	-1.500	-4.921	12.20	12.18	0.27	2.18	-3.30	5	5
1.700	5.577	-1.700	-5.577	10.73	10.74	0.29	2.66	0.96	5	4
1.900	6.234	-1.900	-6.234	24.61	24.67	0.39	1.57	12.15	6	5
2.100	6.890	-2.100	-6.890	12.02	12.06	0.27	2.26	7.75	5	4
2.300	7.546	-2.300	-7.546	11.03	11.54	0.15	1.28	107.13	5	5
2.500	8.202	-2.500	-8.202	16.44	16.62	0.35	2.13	39.13	5	5
2.700	8.858	-2.700	-8.858	9.54	9.86	0.13	1.32	70.27	5	4
2.900	9.514	-2.900	-9.514	9.28	10.02	0.12	1.23	157.10	5	4
3.100	10.170	-3.100	-10.170	19.40	19.56	0.18	0.91	34.13	6	5
3.300	10.827	-3.300	-10.827	11.77	11.89	0.07	0.61	25.02	6	5
3.500	11.483	-3.500	-11.483	7.94	8.32	0.09	1.02	81.20	5	4
3.700	12.139	-3.700	-12.139	10.72	11.16	0.09	0.76	94.04	6	5
3.900	12.795	-3.900	-12.795	9.23	9.88	0.10	0.96	138.84	5	4
4.100	13.451	-4.100	-13.451	8.89	9.70	0.08	0.85	173.08	5	4
4.300	14.107	-4.300	-14.107	9.77	10.48	0.17	1.60	151.53	5	4
4.500	14.764	-4.500	-14.764	8.28	9.06	0.08	0.86	167.17	5	4
4.700	15.420	-4.700	-15.420	8.61	9.41	0.08	0.85	171.48	5	4
4.900	16.076	-4.900	-16.076	8.10	8.93	0.08	0.84	178.29	5	4
5.100	16.732	-5.100	-16.732	7.90	8.70	0.06	0.69	169.28	1	4
5.300	17.388	-5.300	-17.388	8.72	9.61	0.08	0.78	190.80	6	4
5.500	18.044	-5.500	-18.044	8.53	9.50	0.07	0.77	206.87	6	4
5.700	18.701	-5.700	-18.701	10.75	11.81	0.11	0.91	227.71	6	4
5.900	19.357	-5.900	-19.357	11.39	12.48	0.15	1.22	234.54	6	4
6.100	20.013	-6.100	-20.013	12.97	14.22	0.18	1.25	267.23	6	4
6.300	20.669	-6.300	-20.669	14.16	15.58	0.18	1.17	301.51	6	4

Run No: 04-1129-1222-2122
CPT File: 806CP4D.COR

Col-01 Depth (m)	Col-02 Depth (ft)	Col-03 Elev. (m)	Col-04 Elev. (ft)	Col-05 qc (tsf)	Col-06 qt (tsf)	Col-07 fs (tsf)	Col-08 Rf (%)	Col-09 u (ft)	Col-10 SBT (Zone)	Col-11 SBTn (Zone)
6.500	21.325	-6.500	-21.325	13.88	15.29	0.18	1.20	302.89	6	4
6.700	21.981	-6.700	-21.981	14.41	15.88	0.20	1.23	315.27	6	4
6.900	22.638	-6.900	-22.638	13.83	15.23	0.17	1.10	299.12	6	4
7.100	23.294	-7.100	-23.294	13.00	14.40	0.17	1.18	298.00	6	4
7.300	23.950	-7.300	-23.950	13.73	15.19	0.17	1.09	310.96	6	4
7.500	24.606	-7.500	-24.606	13.86	15.30	0.17	1.13	306.34	6	4
7.700	25.262	-7.700	-25.262	14.61	16.06	0.22	1.36	308.74	6	4
7.900	25.918	-7.900	-25.918	15.35	16.24	0.22	1.34	190.34	6	4
8.100	26.574	-8.100	-26.574	13.08	14.41	0.18	1.24	282.83	6	4
8.300	27.231	-8.300	-27.231	13.54	14.97	0.21	1.37	304.93	6	4
8.500	27.887	-8.500	-27.887	13.43	14.89	0.19	1.30	311.26	6	4
8.700	28.543	-8.700	-28.543	13.61	15.05	0.19	1.27	307.99	6	4
8.900	29.199	-8.900	-29.199	13.69	15.17	0.16	1.02	317.33	6	4
9.100	29.855	-9.100	-29.855	13.19	14.62	0.15	1.03	305.29	6	4
9.300	30.511	-9.300	-30.511	13.92	15.42	0.16	1.02	320.07	6	4
9.500	31.168	-9.500	-31.168	13.67	15.21	0.16	1.05	328.61	6	4
9.700	31.824	-9.700	-31.824	13.99	15.53	0.17	1.11	329.04	6	4
9.900	32.480	-9.900	-32.480	13.40	14.90	0.16	1.09	320.15	6	4
10.100	33.136	-10.100	-33.136	12.57	13.98	0.14	0.99	301.14	6	4
10.300	33.792	-10.300	-33.792	12.22	13.63	0.14	0.99	302.17	6	3
10.500	34.448	-10.500	-34.448	12.25	13.65	0.14	1.05	299.38	6	3
10.700	35.105	-10.700	-35.105	12.18	13.59	0.14	1.05	300.02	6	3
10.900	35.761	-10.900	-35.761	12.55	13.99	0.15	1.06	307.15	6	3
11.100	36.417	-11.100	-36.417	11.98	13.39	0.14	1.03	302.40	6	3
11.300	37.073	-11.300	-37.073	12.22	13.60	0.14	1.03	295.24	6	3
11.500	37.729	-11.500	-37.729	12.44	13.89	0.14	1.01	308.88	6	3
11.700	38.385	-11.700	-38.385	11.74	13.14	0.14	1.05	299.40	6	3
11.900	39.042	-11.900	-39.042	11.93	13.37	0.13	0.99	307.79	6	3
12.100	39.698	-12.100	-39.698	12.14	13.61	0.14	0.99	312.93	6	3
12.300	40.354	-12.300	-40.354	12.40	13.89	0.14	1.03	318.35	6	3
12.500	41.010	-12.500	-41.010	11.98	13.50	0.13	0.97	323.23	6	3
12.700	41.666	-12.700	-41.666	12.36	13.91	0.13	0.90	331.28	6	3
12.900	42.322	-12.900	-42.322	12.65	14.24	0.14	0.95	338.96	6	3
13.100	42.978	-13.100	-42.978	15.16	16.92	0.18	1.07	375.42	6	3
13.300	43.635	-13.300	-43.635	16.11	17.98	0.18	1.02	398.70	6	3
13.500	44.291	-13.500	-44.291	16.30	18.17	0.20	1.12	399.26	6	3
13.700	44.947	-13.700	-44.947	16.39	18.25	0.20	1.11	398.27	6	3
13.900	45.603	-13.900	-45.603	16.47	18.34	0.19	1.02	400.69	6	3
14.100	46.259	-14.100	-46.259	16.18	18.07	0.20	1.10	403.38	6	3
14.300	46.915	-14.300	-46.915	16.45	18.31	0.19	1.04	397.20	6	3
14.500	47.572	-14.500	-47.572	16.16	18.04	0.19	1.06	400.13	6	3
14.700	48.228	-14.700	-48.228	16.35	18.27	0.20	1.08	408.47	6	3
14.900	48.884	-14.900	-48.884	16.05	17.96	0.19	1.05	407.97	6	3
15.100	49.540	-15.100	-49.540	15.42	17.28	0.17	0.99	395.93	6	3
15.300	50.196	-15.300	-50.196	15.27	17.13	0.17	0.99	397.16	6	3
15.500	50.852	-15.500	-50.852	15.56	17.42	0.17	0.95	396.65	6	3
15.700	51.509	-15.700	-51.509	15.70	17.59	0.18	1.00	401.87	6	3
15.900	52.165	-15.900	-52.165	15.75	17.64	0.19	1.07	405.33	6	3
16.100	52.821	-16.100	-52.821	16.23	18.18	0.19	1.03	416.81	6	3
16.300	53.477	-16.300	-53.477	16.24	18.19	0.17	0.94	416.88	6	3
16.500	54.133	-16.500	-54.133	15.73	17.68	0.17	0.98	415.89	6	3
16.700	54.789	-16.700	-54.789	15.53	17.45	0.16	0.89	411.20	6	3
16.900	55.446	-16.900	-55.446	15.38	17.32	0.16	0.93	413.56	6	3
17.100	56.102	-17.100	-56.102	14.45	16.33	0.14	0.84	400.04	6	3
17.300	56.758	-17.300	-56.758	14.57	16.45	0.12	0.73	401.39	6	3
17.500	57.414	-17.500	-57.414	14.39	16.22	0.12	0.74	390.59	6	3
17.700	58.070	-17.700	-58.070	13.78	15.57	0.13	0.80	382.53	6	3
17.900	58.726	-17.900	-58.726	13.43	15.13	0.10	0.66	362.04	6	1
18.100	59.382	-18.100	-59.382	12.87	14.54	0.08	0.57	356.45	6	1
18.300	60.039	-18.300	-60.039	14.26	16.00	0.13	0.78	370.74	6	3

Run No: 04-1129-1222-2122
CPT File: 806CP4D.COR

Col-01 Depth (m)	Col-02 Depth (ft)	Col-03 Elev. (m)	Col-04 Elev. (ft)	Col-05 qc (tsf)	Col-06 qt (tsf)	Col-07 fs (tsf)	Col-08 Rf (%)	Col-09 u (ft)	Col-10 SBT (Zone)	Col-11 SBTn (Zone)
18.500	60.695	-18.500	-60.695	12.73	14.38	0.07	0.51	352.42	6	1
18.700	61.351	-18.700	-61.351	12.46	14.09	0.10	0.68	348.43	6	1
18.900	62.007	-18.900	-62.007	12.38	13.93	0.07	0.52	332.17	6	1
19.100	62.663	-19.100	-62.663	13.82	15.55	0.11	0.68	371.29	6	1
19.300	63.319	-19.300	-63.319	15.04	17.02	0.14	0.79	422.62	6	3
19.500	63.976	-19.500	-63.976	16.48	18.59	0.14	0.76	449.25	6	3
19.700	64.632	-19.700	-64.632	17.34	19.52	0.18	0.92	464.65	6	3
19.900	65.288	-19.900	-65.288	17.22	19.35	0.17	0.89	456.42	6	3
20.100	65.944	-20.100	-65.944	16.18	18.28	0.15	0.84	449.09	6	3
20.300	66.600	-20.300	-66.600	17.06	19.24	0.16	0.82	465.87	6	3
20.500	67.256	-20.500	-67.256	15.60	17.72	0.13	0.74	452.92	6	3
20.700	67.913	-20.700	-67.913	16.31	18.37	0.13	0.71	439.86	6	3
20.900	68.569	-20.900	-68.569	15.38	17.35	0.11	0.64	420.33	6	1
21.100	69.225	-21.100	-69.225	15.43	17.43	0.13	0.76	426.72	6	3
21.300	69.881	-21.300	-69.881	15.64	17.71	0.12	0.68	443.37	6	3
21.500	70.537	-21.500	-70.537	16.42	18.59	0.16	0.85	464.57	6	3
21.700	71.193	-21.700	-71.193	15.00	17.08	0.10	0.60	444.93	6	1
21.900	71.850	-21.900	-71.850	16.11	18.08	0.13	0.69	420.40	6	3
22.100	72.506	-22.100	-72.506	15.33	17.29	0.11	0.62	419.24	6	1
22.300	73.162	-22.300	-73.162	15.89	17.92	0.11	0.62	434.40	6	1
22.500	73.818	-22.500	-73.818	14.49	16.59	0.07	0.41	448.56	6	1
22.700	74.474	-22.700	-74.474	15.25	17.25	0.11	0.61	426.84	6	1
22.900	75.130	-22.900	-75.130	18.93	20.67	0.06	0.27	373.12	7	1
23.100	75.786	-23.100	-75.786	14.63	16.70	0.05	0.27	443.43	7	1
23.300	76.443	-23.300	-76.443	14.98	16.72	0.05	0.27	371.54	7	1
23.500	77.099	-23.500	-77.099	16.45	18.49	0.12	0.64	435.94	6	1
23.700	77.755	-23.700	-77.755	15.73	17.83	0.08	0.44	448.02	7	1
23.900	78.411	-23.900	-78.411	15.62	17.60	0.05	0.28	422.44	7	1
24.100	79.067	-24.100	-79.067	16.59	18.54	0.08	0.42	417.31	7	1
24.300	79.723	-24.300	-79.723	17.38	19.66	0.12	0.59	487.33	7	1
24.500	80.380	-24.500	-80.380	17.49	19.75	0.13	0.65	483.81	7	3
24.700	81.036	-24.700	-81.036	17.30	19.40	0.07	0.36	449.77	7	1
24.900	81.692	-24.900	-81.692	17.07	19.09	0.07	0.37	431.43	7	1
25.100	82.348	-25.100	-82.348	29.75	31.22	0.12	0.39	313.63	7	4
25.300	83.004	-25.300	-83.004	16.39	18.63	0.07	0.36	477.95	7	1
25.500	83.660	-25.500	-83.660	16.99	19.12	0.06	0.31	454.68	7	1
25.700	84.317	-25.700	-84.317	18.02	20.04	0.07	0.36	431.75	7	1
25.900	84.973	-25.900	-84.973	16.53	18.62	0.05	0.28	447.15	7	1
26.100	85.629	-26.100	-85.629	26.03	27.77	0.27	0.96	371.42	7	3
26.300	86.285	-26.300	-86.285	52.38	52.94	1.24	2.33	119.40	6	3
26.500	86.941	-26.500	-86.941	33.11	33.87	1.11	3.29	163.08	5	3
26.700	87.597	-26.700	-87.597	21.37	23.64	0.29	1.21	485.69	6	3
26.900	88.254	-26.900	-88.254	20.81	23.42	0.21	0.90	556.94	7	3
27.100	88.910	-27.100	-88.910	20.92	23.59	0.19	0.79	569.27	7	3
27.300	89.566	-27.300	-89.566	21.72	24.44	0.21	0.84	581.26	7	3
27.500	90.222	-27.500	-90.222	21.23	23.92	0.21	0.88	574.78	7	3
27.700	90.878	-27.700	-90.878	19.85	22.40	0.18	0.78	543.46	7	3
27.900	91.534	-27.900	-91.534	20.43	23.10	0.20	0.86	571.10	7	3
28.100	92.190	-28.100	-92.190	22.53	25.35	0.22	0.88	602.18	7	3
28.300	92.847	-28.300	-92.847	22.81	25.67	0.22	0.86	611.82	7	3
28.500	93.503	-28.500	-93.503	21.11	23.88	0.19	0.81	590.78	7	3
28.700	94.159	-28.700	-94.159	22.16	24.89	0.23	0.92	581.07	7	3
28.900	94.815	-28.900	-94.815	23.30	26.18	0.23	0.86	615.31	7	3
29.100	95.471	-29.100	-95.471	22.89	25.69	0.23	0.91	599.27	7	3
29.300	96.127	-29.300	-96.127	24.50	27.45	0.23	0.84	631.58	7	3
29.500	96.784	-29.500	-96.784	24.36	27.49	0.23	0.83	670.04	7	3
29.700	97.440	-29.700	-97.440	25.54	28.66	0.25	0.86	666.50	7	3
29.900	98.096	-29.900	-98.096	25.15	28.15	0.23	0.82	640.83	7	3
30.100	98.752	-30.100	-98.752	23.81	26.69	0.20	0.74	614.90	7	3
30.300	99.408	-30.300	-99.408	24.04	26.82	0.19	0.69	593.52	7	3

Run No: 04-1129-1222-2122
CPT File: 806CP4D.COR

Col-01 Depth (m)	Col-02 Depth (ft)	Col-03 Elev. (m)	Col-04 Elev. (ft)	Col-05 qc (tsf)	Col-06 qt (tsf)	Col-07 fs (tsf)	Col-08 Rf (%)	Col-09 u (ft)	Col-10 SBT (Zone)	Col-11 SBTn (Zone)

ConeTec Inc. - CPT Interpretation
Interpretation Output - Release 1.22 Rev. A - Build 5 Format: NLP Imperial
Run No: 04-1129-1222-1952
Job No: 04-806
Client: Hoffman Engineeing
Project: Albany Medical Center - Albany, New York
Site: CPT-F2
Location: AMC
Cone: 20 Ton AD139
CPT Date: 04/12/11
CPT Time: 11:53
CPT File: 806CP2F1.COR
Northing (m): 0.000000
Easting (m): 0.000000
Elevation (m): 0.000000

Water Table (m): 18.90 (ft): 62.0
Unit Weight of Water (default): 62.40 pcf
Averaging Increment (m): 0.20
Su Nkt used: 15.00 Su/P' (nc): 0.30
Dr Method : Jamiolkowski - All Sands
State Parameter M: 1.20
Used Unit Weights Assigned to Soil Zones
N160Ic Calculated using qc1n
N160cs Calculated using qc1ncs

Col-01 Depth (m)	Col-02 Depth (ft)	Col-03 Elev. (m)	Col-04 Elev. (ft)	Col-05 qc (tsf)	Col-06 qt (tsf)	Col-07 fs (tsf)	Col-08 Rf (%)	Col-09 u (ft)	Col-10 SBT (Zone)	Col-11 SBTn (Zone)
0.100	0.328	-0.100	-0.328	4.39	4.39	0.43	9.82	-0.38	0	9
0.300	0.984	-0.300	-0.984	245.11	245.11	1.39	0.57	-0.43	9	-9999.0
0.500	1.640	-0.500	-1.640	89.24	89.24	1.10	1.24	0.06	8	-9999.0
0.700	2.297	-0.700	-2.297	26.53	26.52	1.40	5.29	-2.07	3	9
0.900	2.953	-0.900	-2.953	19.55	19.50	0.94	4.81	-10.09	3	9
1.100	3.609	-1.100	-3.609	16.37	16.33	0.73	4.45	-8.15	3	9
1.300	4.265	-1.300	-4.265	15.43	15.40	0.59	3.84	-5.73	4	4
1.500	4.921	-1.500	-4.921	10.65	10.64	0.30	2.78	-3.21	4	4
1.700	5.577	-1.700	-5.577	13.83	13.87	0.34	2.46	8.42	5	5
1.900	6.234	-1.900	-6.234	17.50	17.48	0.75	4.31	-4.72	3	4
2.100	6.890	-2.100	-6.890	13.78	13.75	0.73	5.30	-6.50	3	3
2.300	7.546	-2.300	-7.546	11.90	11.87	0.45	3.80	-6.34	3	4
2.500	8.202	-2.500	-8.202	12.89	12.87	0.37	2.84	-4.25	5	4
2.700	8.858	-2.700	-8.858	12.68	12.67	0.31	2.47	-1.65	5	4
2.900	9.514	-2.900	-9.514	18.25	18.29	0.40	2.21	7.69	5	4
3.100	10.170	-3.100	-10.170	19.66	19.74	0.47	2.36	16.14	5	4
3.300	10.827	-3.300	-10.827	17.71	17.83	0.38	2.14	25.63	5	4
3.500	11.483	-3.500	-11.483	18.67	18.86	0.39	2.06	40.88	6	4
3.700	12.139	-3.700	-12.139	18.28	18.55	0.39	2.08	55.76	6	4
3.900	12.795	-3.900	-12.795	22.53	22.78	0.38	1.67	51.78	6	5
4.100	13.451	-4.100	-13.451	15.19	15.50	0.27	1.75	67.89	6	4
4.300	14.107	-4.300	-14.107	19.48	19.94	0.33	1.65	97.63	6	4
4.500	14.764	-4.500	-14.764	22.79	23.22	0.41	1.75	91.70	6	5
4.700	15.420	-4.700	-15.420	21.62	22.28	0.52	2.32	138.92	6	4
4.900	16.076	-4.900	-16.076	25.09	25.36	0.60	2.38	58.18	6	4
5.100	16.732	-5.100	-16.732	15.94	16.38	0.27	1.64	95.23	6	4
5.300	17.388	-5.300	-17.388	11.75	12.14	0.23	1.86	83.44	5	4
5.500	18.044	-5.500	-18.044	10.84	11.26	0.12	1.02	88.35	6	4
5.700	18.701	-5.700	-18.701	12.03	12.64	0.13	1.05	131.75	6	4
5.900	19.357	-5.900	-19.357	11.75	12.56	0.14	1.08	171.79	6	4
6.100	20.013	-6.100	-20.013	18.16	18.84	0.28	1.48	145.16	6	4
6.300	20.669	-6.300	-20.669	25.71	26.10	0.37	1.40	83.40	6	4

Run No: 04-1129-1222-1952
CPT File: 806CP2F1.COR

Col-01 Depth (m)	Col-02 Depth (ft)	Col-03 Elev. (m)	Col-04 Elev. (ft)	Col-05 qc (tsf)	Col-06 qt (tsf)	Col-07 fs (tsf)	Col-08 Rf (%)	Col-09 u (ft)	Col-10 SBT (Zone)	Col-11 SBTn (Zone)
6.500	21.325	-6.500	-21.325	14.76	15.21	0.22	1.42	96.85	6	4
6.700	21.981	-6.700	-21.981	16.35	16.71	0.13	0.75	76.07	6	4
6.900	22.638	-6.900	-22.638	12.71	13.59	0.09	0.66	187.36	6	4
7.100	23.294	-7.100	-23.294	12.86	13.75	0.08	0.60	190.81	6	4
7.300	23.950	-7.300	-23.950	11.47	12.39	0.09	0.75	197.32	6	4
7.500	24.606	-7.500	-24.606	11.10	12.07	0.11	0.89	207.41	6	4
7.700	25.262	-7.700	-25.262	15.05	15.61	0.13	0.84	119.46	6	4
7.900	25.918	-7.900	-25.918	10.38	11.06	0.08	0.73	144.98	6	4
8.100	26.574	-8.100	-26.574	8.97	9.67	0.06	0.57	148.51	6	4
8.300	27.231	-8.300	-27.231	10.68	11.36	0.08	0.71	144.54	6	4
8.500	27.887	-8.500	-27.887	9.71	10.50	0.08	0.72	168.72	6	4
8.700	28.543	-8.700	-28.543	10.46	11.33	0.08	0.71	185.74	6	4
8.900	29.199	-8.900	-29.199	10.17	11.10	0.08	0.74	197.96	6	4
9.100	29.855	-9.100	-29.855	9.93	10.87	0.07	0.65	199.61	6	4
9.300	30.511	-9.300	-30.511	9.39	10.31	0.07	0.70	196.39	6	3
9.500	31.168	-9.500	-31.168	9.76	10.75	0.08	0.77	211.27	6	3
9.700	31.824	-9.700	-31.824	9.18	10.19	0.07	0.64	215.84	6	3
9.900	32.480	-9.900	-32.480	9.39	10.33	0.08	0.75	199.15	6	3
10.100	33.136	-10.100	-33.136	9.70	10.74	0.07	0.68	223.96	6	3
10.300	33.792	-10.300	-33.792	9.76	10.87	0.08	0.69	236.30	6	3
10.500	34.448	-10.500	-34.448	11.87	13.08	0.11	0.86	259.64	6	3
10.700	35.105	-10.700	-35.105	13.27	14.58	0.17	1.15	280.06	6	3
10.900	35.761	-10.900	-35.761	15.12	16.57	0.17	1.01	308.14	6	4
11.100	36.417	-11.100	-36.417	16.55	18.12	0.18	1.01	336.45	6	4
11.300	37.073	-11.300	-37.073	15.99	17.61	0.19	1.07	346.05	6	4
11.500	37.729	-11.500	-37.729	17.15	18.83	0.20	1.04	358.13	6	4
11.700	38.385	-11.700	-38.385	16.21	17.84	0.20	1.10	349.12	6	4
11.900	39.042	-11.900	-39.042	15.14	16.72	0.19	1.11	338.32	6	3
12.100	39.698	-12.100	-39.698	15.30	16.91	0.17	1.01	343.81	6	4
12.300	40.354	-12.300	-40.354	15.62	17.21	0.19	1.09	340.29	6	3
12.500	41.010	-12.500	-41.010	16.08	17.68	0.19	1.08	341.82	6	4
12.700	41.666	-12.700	-41.666	16.43	18.06	0.20	1.12	348.02	6	3
12.900	42.322	-12.900	-42.322	15.84	17.44	0.16	0.89	340.63	6	4
13.100	42.978	-13.100	-42.978	15.25	16.83	0.14	0.85	337.69	6	4
13.300	43.635	-13.300	-43.635	15.27	16.87	0.17	1.01	342.73	6	3
13.500	44.291	-13.500	-44.291	14.93	16.53	0.17	1.00	341.66	6	3
13.700	44.947	-13.700	-44.947	15.14	16.73	0.17	1.00	339.82	6	3
13.900	45.603	-13.900	-45.603	14.87	16.45	0.16	0.96	339.18	6	3
14.100	46.259	-14.100	-46.259	14.95	16.52	0.16	0.94	335.68	6	3
14.300	46.915	-14.300	-46.915	15.46	17.07	0.15	0.90	343.52	6	3
14.500	47.572	-14.500	-47.572	15.60	17.19	0.16	0.93	339.74	6	3
14.700	48.228	-14.700	-48.228	15.44	17.05	0.17	1.00	344.68	6	3
14.900	48.884	-14.900	-48.884	15.86	17.52	0.17	0.97	354.67	6	3
15.100	49.540	-15.100	-49.540	14.79	16.37	0.16	1.00	336.88	6	3
15.300	50.196	-15.300	-50.196	13.72	15.29	0.14	0.90	334.84	6	3
15.500	50.852	-15.500	-50.852	14.08	15.62	0.15	0.96	327.67	6	3
15.700	51.509	-15.700	-51.509	13.94	15.48	0.15	0.94	327.54	6	3
15.900	52.165	-15.900	-52.165	14.28	15.79	0.15	0.92	321.96	6	3
16.100	52.821	-16.100	-52.821	13.91	15.45	0.14	0.88	329.38	6	3
16.300	53.477	-16.300	-53.477	13.88	15.41	0.13	0.83	327.00	6	3
16.500	54.133	-16.500	-54.133	14.00	15.51	0.13	0.86	321.46	6	3
16.700	54.789	-16.700	-54.789	14.16	15.73	0.13	0.84	334.21	6	3
16.900	55.446	-16.900	-55.446	13.42	14.94	0.12	0.81	325.36	6	3
17.100	56.102	-17.100	-56.102	13.72	15.28	0.12	0.80	332.62	6	3
17.300	56.758	-17.300	-56.758	13.35	14.91	0.12	0.82	332.03	6	3
17.500	57.414	-17.500	-57.414	14.23	15.81	0.13	0.82	337.73	6	3
17.700	58.070	-17.700	-58.070	14.26	15.91	0.13	0.80	352.17	6	3
17.900	58.726	-17.900	-58.726	13.64	15.29	0.12	0.75	352.31	6	3
18.100	59.382	-18.100	-59.382	14.34	16.05	0.14	0.87	363.95	6	3
18.300	60.039	-18.300	-60.039	16.27	18.10	0.16	0.90	390.33	6	3

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Col-01 Depth (m)	Col-02 Depth (ft)	Col-03 Elev. (m)	Col-04 Elev. (ft)	Col-05 qc (tsf)	Col-06 qt (tsf)	Col-07 fs (tsf)	Col-08 Rf (%)	Col-09 u (ft)	Col-10 SBT (Zone)	Col-11 SBTn (Zone)
18.500	60.695	-18.500	-60.695	17.76	19.69	0.18	0.89	413.09	6	3
18.700	61.351	-18.700	-61.351	18.09	20.07	0.19	0.96	422.05	6	3
18.900	62.007	-18.900	-62.007	18.05	20.03	0.20	0.98	424.14	6	3
19.100	62.663	-19.100	-62.663	18.34	20.37	0.19	0.94	434.03	6	3
19.300	63.319	-19.300	-63.319	18.41	20.40	0.20	0.98	424.52	6	3
19.500	63.976	-19.500	-63.976	18.54	20.56	0.20	0.97	431.80	6	3
19.700	64.632	-19.700	-64.632	18.77	20.82	0.22	1.07	439.05	6	3
19.900	65.288	-19.900	-65.288	18.28	20.29	0.20	0.96	428.60	6	3
20.100	65.944	-20.100	-65.944	18.67	20.74	0.21	1.03	441.63	6	3
20.300	66.600	-20.300	-66.600	18.08	20.12	0.20	1.00	435.52	6	3
20.500	67.256	-20.500	-67.256	17.15	19.15	0.18	0.96	426.15	6	3
20.700	67.913	-20.700	-67.913	17.84	19.86	0.19	0.95	431.57	6	3
20.900	68.569	-20.900	-68.569	17.70	19.70	0.18	0.89	427.91	6	3
21.100	69.225	-21.100	-69.225	17.93	19.94	0.20	0.98	429.29	6	3
21.300	69.881	-21.300	-69.881	18.37	20.46	0.19	0.92	445.93	6	3
21.500	70.537	-21.500	-70.537	18.72	20.82	0.20	0.95	449.48	6	3
21.700	71.193	-21.700	-71.193	18.72	20.83	0.19	0.93	451.38	6	3
21.900	71.850	-21.900	-71.850	18.57	20.71	0.20	0.96	455.47	6	3
22.100	72.506	-22.100	-72.506	18.05	20.15	0.18	0.87	449.76	6	3
22.300	73.162	-22.300	-73.162	17.89	19.98	0.19	0.94	447.24	6	3
22.500	73.818	-22.500	-73.818	17.90	20.06	0.17	0.82	461.14	6	3
22.700	74.474	-22.700	-74.474	16.71	18.74	0.13	0.68	433.85	6	3
22.900	75.130	-22.900	-75.130	16.32	18.39	0.14	0.75	440.70	6	3
23.100	75.786	-23.100	-75.786	16.90	18.93	0.13	0.68	433.60	6	3
23.300	76.443	-23.300	-76.443	15.89	17.83	0.12	0.66	413.78	6	1
23.500	77.099	-23.500	-77.099	15.55	17.45	0.11	0.63	404.64	6	1
23.700	77.755	-23.700	-77.755	15.11	16.93	0.11	0.64	389.04	6	1
23.900	78.411	-23.900	-78.411	14.84	16.64	0.10	0.62	385.30	6	1
24.100	79.067	-24.100	-79.067	15.44	17.20	0.13	0.73	374.50	6	3
24.300	79.723	-24.300	-79.723	14.29	16.00	0.09	0.56	363.96	6	1
24.500	80.380	-24.500	-80.380	15.70	17.57	0.12	0.70	398.92	6	3
24.700	81.036	-24.700	-81.036	18.44	20.59	0.17	0.84	458.11	6	3
24.900	81.692	-24.900	-81.692	19.05	21.38	0.19	0.87	496.00	6	3
25.100	82.348	-25.100	-82.348	20.00	22.43	0.18	0.80	519.52	7	3
25.300	83.004	-25.300	-83.004	20.17	22.58	0.17	0.75	514.12	7	3
25.500	83.660	-25.500	-83.660	18.46	20.76	0.15	0.71	491.87	7	3
25.700	84.317	-25.700	-84.317	18.32	20.60	0.14	0.67	487.55	7	3
25.900	84.973	-25.900	-84.973	19.37	21.77	0.16	0.75	512.25	7	3
26.100	85.629	-26.100	-85.629	17.30	19.59	0.13	0.64	489.16	7	1
26.300	86.285	-26.300	-86.285	19.56	21.79	0.15	0.70	476.13	7	3
26.500	86.941	-26.500	-86.941	18.29	20.50	0.12	0.60	472.94	7	1
26.700	87.597	-26.700	-87.597	18.51	20.77	0.14	0.69	483.62	7	3
26.900	88.254	-26.900	-88.254	18.60	20.93	0.14	0.66	496.05	7	3
27.100	88.910	-27.100	-88.910	19.21	21.66	0.16	0.75	523.25	7	3
27.300	89.566	-27.300	-89.566	18.73	21.06	0.13	0.61	498.20	7	1
27.500	90.222	-27.500	-90.222	17.81	20.09	0.11	0.56	487.43	7	1
27.700	90.878	-27.700	-90.878	17.76	19.95	0.13	0.63	467.13	7	1
27.900	91.534	-27.900	-91.534	17.92	20.14	0.12	0.60	473.82	7	1
28.100	92.190	-28.100	-92.190	17.39	19.62	0.10	0.51	475.48	7	1
28.300	92.847	-28.300	-92.847	23.08	25.13	0.23	0.92	437.87	7	3
28.500	93.503	-28.500	-93.503	17.81	20.08	0.10	0.47	484.47	7	1
28.700	94.159	-28.700	-94.159	21.93	24.08	0.17	0.71	460.40	7	3
28.900	94.815	-28.900	-94.815	19.45	21.73	0.12	0.55	486.42	7	1
29.100	95.471	-29.100	-95.471	18.86	21.21	0.10	0.45	501.44	7	1
29.300	96.127	-29.300	-96.127	20.23	22.62	0.14	0.61	509.79	7	1
29.500	96.784	-29.500	-96.784	18.57	20.93	0.11	0.51	502.76	7	1
29.700	97.440	-29.700	-97.440	19.13	21.61	0.11	0.51	528.73	7	1
29.900	98.096	-29.900	-98.096	19.18	21.60	0.13	0.59	517.42	7	1
30.100	98.752	-30.100	-98.752	16.99	19.22	0.07	0.35	475.22	7	1
30.300	99.408	-30.300	-99.408	18.04	20.35	0.10	0.49	492.09	7	1

Run No: 04-1129-1222-1952
CPT File: 806CP2F1.COR

Col-01 Depth (m)	Col-02 Depth (ft)	Col-03 Elev. (m)	Col-04 Elev. (ft)	Col-05 qc (tsf)	Col-06 qt (tsf)	Col-07 fs (tsf)	Col-08 Rf (%)	Col-09 u (ft)	Col-10 SBT (Zone)	Col-11 SBTn (Zone)

ConeTec Inc. - CPT Interpretation
Interpretation Output - Release 1.22 Rev. A - Build 5 Format: NLP Imperial
Run No: 04-1129-1222-2210
Job No: 04-806
Client: Hoffman Engineeing
Project: Albany Medical Center - Albany, New York
Site: CPT-G1
Location: AMC
Cone: 20 Ton AD139
CPT Date: 04/12/11
CPT Time: 15:35
CPT File: 806CP5G.COR
Northing (m): 0.000000
Easting (m): 0.000000
Elevation (m): 0.000000

Water Table (m): 18.90 (ft): 62.0
Unit Weight of Water (default): 62.40 pcf
Averaging Increment (m): 0.20
Su Nkt used: 15.00 Su/P' (nc): 0.30
Dr Method : Jamiolkowski - All Sands
State Parameter M: 1.20
Used Unit Weights Assigned to Soil Zones
N160Ic Calculated using qc1n
N160cs Calculated using qc1ncs

Col-01 Depth (m)	Col-02 Depth (ft)	Col-03 Elev. (m)	Col-04 Elev. (ft)	Col-05 qc (tsf)	Col-06 qt (tsf)	Col-07 fs (tsf)	Col-08 Rf (%)	Col-09 u (ft)	Col-10 SBT (Zone)	Col-11 SBTn (Zone)
0.100	0.328	-0.100	-0.328	519.93	519.96	1.73	0.33	4.51	10	-9999.0
0.300	0.984	-0.300	-0.984	211.51	211.51	0.94	0.44	0.16	9	-9999.0
0.500	1.640	-0.500	-1.640	185.61	185.62	1.42	0.76	1.95	9	-9999.0
0.700	2.297	-0.700	-2.297	99.72	99.71	1.84	1.84	-1.39	7	8
0.900	2.953	-0.900	-2.953	23.27	23.27	1.02	4.37	0.50	4	9
1.100	3.609	-1.100	-3.609	30.57	30.60	1.19	3.89	7.43	5	8
1.300	4.265	-1.300	-4.265	18.62	18.61	0.93	4.98	-1.85	3	9
1.500	4.921	-1.500	-4.921	23.38	23.50	0.93	3.95	25.42	4	4
1.700	5.577	-1.700	-5.577	17.65	17.72	0.87	4.92	14.49	3	4
1.900	6.234	-1.900	-6.234	14.05	14.05	0.62	4.39	-0.60	3	4
2.100	6.890	-2.100	-6.890	14.12	14.11	0.56	4.00	-1.81	3	4
2.300	7.546	-2.300	-7.546	11.68	11.66	0.57	4.90	-3.72	3	3
2.500	8.202	-2.500	-8.202	10.54	10.52	0.38	3.64	-4.95	3	4
2.700	8.858	-2.700	-8.858	29.27	29.28	0.78	2.66	2.28	6	5
2.900	9.514	-2.900	-9.514	25.92	25.90	1.01	3.91	-3.24	4	4
3.100	10.170	-3.100	-10.170	14.77	14.71	0.77	5.25	-11.99	3	3
3.300	10.827	-3.300	-10.827	30.34	30.28	1.26	4.16	-12.80	4	4
3.500	11.483	-3.500	-11.483	35.55	35.49	1.69	4.76	-13.48	4	4
3.700	12.139	-3.700	-12.139	27.18	27.12	1.30	4.81	-12.84	3	4
3.900	12.795	-3.900	-12.795	18.08	18.02	0.93	5.14	-12.01	3	3
4.100	13.451	-4.100	-13.451	12.86	12.81	0.66	5.19	-11.01	3	3
4.300	14.107	-4.300	-14.107	13.46	13.42	0.70	5.21	-9.92	3	3
4.500	14.764	-4.500	-14.764	18.14	18.10	0.53	2.95	-8.60	5	4
4.700	15.420	-4.700	-15.420	27.04	27.00	1.01	3.74	-9.11	5	4
4.900	16.076	-4.900	-16.076	27.32	27.26	1.13	4.15	-14.63	4	4
5.100	16.732	-5.100	-16.732	14.52	14.44	0.42	2.92	-16.45	5	3
5.300	17.388	-5.300	-17.388	13.29	13.22	0.30	2.24	-14.32	5	4
5.500	18.044	-5.500	-18.044	14.66	14.58	0.41	2.78	-16.78	5	3
5.700	18.701	-5.700	-18.701	10.83	10.76	0.36	3.31	-14.59	4	3
5.900	19.357	-5.900	-19.357	25.57	25.53	0.69	2.70	-7.06	5	4
6.100	20.013	-6.100	-20.013	22.55	22.56	0.39	1.74	1.98	6	4
6.300	20.669	-6.300	-20.669	16.62	16.65	0.38	2.30	5.01	5	4

Run No: 04-1129-1222-2210
CPT File: 806CP5G.COR

Col-01 Depth (m)	Col-02 Depth (ft)	Col-03 Elev. (m)	Col-04 Elev. (ft)	Col-05 qc (tsf)	Col-06 qt (tsf)	Col-07 fs (tsf)	Col-08 Rf (%)	Col-09 u (ft)	Col-10 SBT (Zone)	Col-11 SBTn (Zone)
6.500	21.325	-6.500	-21.325	14.63	14.59	0.36	2.46	-7.78	5	3
6.700	21.981	-6.700	-21.981	14.23	14.26	0.37	2.62	5.84	5	3
6.900	22.638	-6.900	-22.638	13.70	13.80	0.40	2.92	19.93	5	3
7.100	23.294	-7.100	-23.294	38.49	38.42	0.58	1.50	-14.51	7	5
7.300	23.950	-7.300	-23.950	12.87	12.78	0.26	2.02	-20.52	5	3
7.500	24.606	-7.500	-24.606	11.82	11.73	0.16	1.35	-19.67	5	3
7.700	25.262	-7.700	-25.262	12.57	12.48	0.20	1.59	-19.63	5	3
7.900	25.918	-7.900	-25.918	12.97	12.89	0.27	2.12	-16.03	5	3
8.100	26.574	-8.100	-26.574	17.76	17.69	0.50	2.82	-15.00	5	3
8.300	27.231	-8.300	-27.231	27.84	27.77	1.27	4.58	-14.83	4	3
8.500	27.887	-8.500	-27.887	25.78	25.70	1.47	5.70	-16.33	3	3
8.700	28.543	-8.700	-28.543	23.32	23.24	1.12	4.81	-15.88	3	3
8.900	29.199	-8.900	-29.199	21.99	21.92	1.15	5.22	-14.56	3	3
9.100	29.855	-9.100	-29.855	20.92	20.86	0.91	4.37	-13.86	4	3
9.300	30.511	-9.300	-30.511	22.31	22.25	0.85	3.83	-12.71	4	3
9.500	31.168	-9.500	-31.168	20.78	20.73	0.68	3.26	-11.55	5	3
9.700	31.824	-9.700	-31.824	18.58	18.53	0.56	3.03	-10.61	5	3
9.900	32.480	-9.900	-32.480	17.25	17.22	0.39	2.28	-5.93	5	3
10.100	33.136	-10.100	-33.136	16.40	16.39	0.27	1.64	-2.29	6	3
10.300	33.792	-10.300	-33.792	16.29	16.31	0.24	1.46	2.81	6	3
10.500	34.448	-10.500	-34.448	17.15	17.20	0.23	1.34	9.63	6	4
10.700	35.105	-10.700	-35.105	18.19	18.27	0.32	1.74	16.18	6	3
10.900	35.761	-10.900	-35.761	16.85	17.05	0.29	1.69	42.18	6	3
11.100	36.417	-11.100	-36.417	14.02	14.31	0.15	1.05	61.52	6	3
11.300	37.073	-11.300	-37.073	14.45	14.88	0.16	1.04	91.68	6	3
11.500	37.729	-11.500	-37.729	14.34	14.99	0.16	1.04	138.66	6	3
11.700	38.385	-11.700	-38.385	14.60	15.48	0.15	0.94	189.65	6	4
11.900	39.042	-11.900	-39.042	15.49	16.72	0.17	1.03	262.57	6	4
12.100	39.698	-12.100	-39.698	14.55	15.86	0.14	0.85	280.45	6	4
12.300	40.354	-12.300	-40.354	13.40	14.67	0.12	0.84	270.82	6	3
12.500	41.010	-12.500	-41.010	13.19	14.48	0.12	0.80	275.47	6	3
12.700	41.666	-12.700	-41.666	14.04	15.28	0.14	0.90	263.91	6	3
12.900	42.322	-12.900	-42.322	13.30	14.64	0.12	0.80	285.15	6	3
13.100	42.978	-13.100	-42.978	13.00	14.35	0.12	0.86	287.24	6	3
13.300	43.635	-13.300	-43.635	13.10	14.40	0.12	0.82	277.61	6	3
13.500	44.291	-13.500	-44.291	13.38	14.67	0.11	0.77	274.32	6	3
13.700	44.947	-13.700	-44.947	13.32	14.68	0.11	0.72	290.45	6	3
13.900	45.603	-13.900	-45.603	13.08	14.44	0.10	0.71	290.80	6	3
14.100	46.259	-14.100	-46.259	12.98	14.36	0.09	0.65	293.76	6	3
14.300	46.915	-14.300	-46.915	12.83	14.21	0.10	0.69	295.59	6	3
14.500	47.572	-14.500	-47.572	13.00	14.40	0.10	0.68	299.64	6	3
14.700	48.228	-14.700	-48.228	12.47	13.90	0.08	0.56	305.16	6	1
14.900	48.884	-14.900	-48.884	12.87	14.35	0.08	0.58	315.41	6	1
15.100	49.540	-15.100	-49.540	14.02	15.54	0.10	0.64	324.57	6	3
15.300	50.196	-15.300	-50.196	17.49	19.18	0.15	0.80	360.62	6	4
15.500	50.852	-15.500	-50.852	17.45	19.16	0.16	0.82	363.08	6	4
15.700	51.509	-15.700	-51.509	17.54	19.26	0.17	0.90	369.13	6	3
15.900	52.165	-15.900	-52.165	18.09	19.90	0.19	0.93	385.00	6	3
16.100	52.821	-16.100	-52.821	17.95	19.72	0.19	0.95	379.12	6	3
16.300	53.477	-16.300	-53.477	17.41	19.16	0.19	0.98	374.78	6	3
16.500	54.133	-16.500	-54.133	17.68	19.45	0.19	0.99	377.29	6	3
16.700	54.789	-16.700	-54.789	17.39	19.19	0.20	1.04	383.76	6	3
16.900	55.446	-16.900	-55.446	16.64	18.42	0.23	1.24	379.63	6	3
17.100	56.102	-17.100	-56.102	16.71	18.47	0.21	1.11	375.92	6	3
17.300	56.758	-17.300	-56.758	16.24	17.99	0.20	1.13	374.17	6	3
17.500	57.414	-17.500	-57.414	16.50	18.30	0.21	1.12	386.00	6	3
17.700	58.070	-17.700	-58.070	17.34	19.11	0.21	1.10	377.35	6	3
17.900	58.726	-17.900	-58.726	16.99	18.83	0.22	1.14	391.66	6	3
18.100	59.382	-18.100	-59.382	17.44	19.29	0.21	1.10	395.58	6	3
18.300	60.039	-18.300	-60.039	17.26	19.11	0.22	1.13	394.55	6	3

Run No: 04-1129-1222-2210
CPT File: 806CP5G.COR

Col-01 Depth (m)	Col-02 Depth (ft)	Col-03 Elev. (m)	Col-04 Elev. (ft)	Col-05 qc (tsf)	Col-06 qt (tsf)	Col-07 fs (tsf)	Col-08 Rf (%)	Col-09 u (ft)	Col-10 SBT (Zone)	Col-11 SBTn (Zone)
18.500	60.695	-18.500	-60.695	16.99	18.83	0.22	1.14	393.08	6	3
18.700	61.351	-18.700	-61.351	16.53	18.39	0.20	1.06	395.98	6	3
18.900	62.007	-18.900	-62.007	16.77	18.65	0.18	0.98	401.34	6	3
19.100	62.663	-19.100	-62.663	16.32	18.17	0.18	1.01	394.62	6	3
19.300	63.319	-19.300	-63.319	15.57	17.38	0.16	0.89	386.98	6	3
19.500	63.976	-19.500	-63.976	16.48	18.31	0.16	0.89	389.84	6	3
19.700	64.632	-19.700	-64.632	15.13	16.86	0.16	0.94	369.21	6	3
19.900	65.288	-19.900	-65.288	15.17	16.86	0.14	0.83	361.00	6	3
20.100	65.944	-20.100	-65.944	13.97	15.56	0.12	0.74	338.58	6	3
20.300	66.600	-20.300	-66.600	14.45	16.01	0.13	0.81	332.03	6	3
20.500	67.256	-20.500	-67.256	13.24	14.71	0.12	0.80	313.29	6	3
20.700	67.913	-20.700	-67.913	13.66	15.18	0.11	0.74	325.93	6	3
20.900	68.569	-20.900	-68.569	16.83	18.71	0.18	0.94	400.57	6	3
21.100	69.225	-21.100	-69.225	17.63	19.65	0.20	0.99	430.59	6	3
21.300	69.881	-21.300	-69.881	18.54	20.63	0.22	1.04	445.87	6	3
21.500	70.537	-21.500	-70.537	18.81	20.92	0.22	1.04	449.30	6	3
21.700	71.193	-21.700	-71.193	17.55	19.57	0.19	0.97	432.27	6	3
21.900	71.850	-21.900	-71.850	19.10	21.23	0.19	0.90	452.93	6	3
22.100	72.506	-22.100	-72.506	18.08	20.11	0.17	0.86	433.22	6	3
22.300	73.162	-22.300	-73.162	17.39	19.35	0.17	0.88	419.35	6	3
22.500	73.818	-22.500	-73.818	17.52	19.44	0.17	0.88	410.10	6	3
22.700	74.474	-22.700	-74.474	17.49	19.47	0.18	0.90	422.92	6	3
22.900	75.130	-22.900	-75.130	17.73	19.78	0.21	1.06	438.20	6	3
23.100	75.786	-23.100	-75.786	17.55	19.55	0.17	0.85	427.00	6	3
23.300	76.443	-23.300	-76.443	16.94	18.82	0.15	0.81	401.28	6	3
23.500	77.099	-23.500	-77.099	17.20	19.08	0.16	0.81	400.92	6	3
23.700	77.755	-23.700	-77.755	17.31	19.24	0.16	0.85	411.50	6	3
23.900	78.411	-23.900	-78.411	18.89	20.80	0.13	0.60	407.80	7	1
24.100	79.067	-24.100	-79.067	17.82	19.72	0.11	0.55	403.93	7	1
24.300	79.723	-24.300	-79.723	17.39	19.41	0.13	0.67	430.23	6	3
24.500	80.380	-24.500	-80.380	18.49	20.65	0.14	0.67	460.15	7	3
24.700	81.036	-24.700	-81.036	18.48	20.55	0.16	0.76	443.40	7	3
24.900	81.692	-24.900	-81.692	19.46	21.54	0.15	0.69	444.08	7	3
25.100	82.348	-25.100	-82.348	20.35	22.37	0.13	0.58	432.22	7	3
25.300	83.004	-25.300	-83.004	18.43	20.52	0.10	0.48	446.27	7	1
25.500	83.660	-25.500	-83.660	18.49	20.64	0.12	0.59	459.15	7	1
25.700	84.317	-25.700	-84.317	17.57	19.72	0.11	0.56	459.68	7	1
25.900	84.973	-25.900	-84.973	19.21	21.29	0.17	0.79	442.98	7	3
26.100	85.629	-26.100	-85.629	17.39	19.40	0.10	0.52	428.12	7	1
26.300	86.285	-26.300	-86.285	20.33	22.40	0.16	0.73	443.20	7	3
26.500	86.941	-26.500	-86.941	17.04	18.86	0.12	0.65	389.25	6	1
26.700	87.597	-26.700	-87.597	28.44	29.40	0.79	2.69	203.85	6	3
26.900	88.254	-26.900	-88.254	24.80	26.31	0.57	2.15	322.65	6	3
27.100	88.910	-27.100	-88.910	21.57	23.53	0.26	1.11	416.77	6	3
27.300	89.566	-27.300	-89.566	19.10	21.33	0.17	0.81	476.34	7	3
27.500	90.222	-27.500	-90.222	19.15	21.49	0.16	0.75	500.84	7	3
27.700	90.878	-27.700	-90.878	19.96	22.38	0.18	0.78	515.20	7	3
27.900	91.534	-27.900	-91.534	19.76	22.21	0.16	0.72	524.04	7	3
28.100	92.190	-28.100	-92.190	18.40	20.77	0.14	0.66	505.75	7	3
28.300	92.847	-28.300	-92.847	20.60	23.10	0.18	0.79	532.60	7	3
28.500	93.503	-28.500	-93.503	21.14	23.71	0.19	0.80	548.19	7	3
28.700	94.159	-28.700	-94.159	20.78	23.29	0.19	0.80	536.37	7	3
28.900	94.815	-28.900	-94.815	20.94	23.42	0.22	0.92	530.14	7	3
29.100	95.471	-29.100	-95.471	22.23	24.98	0.24	0.96	586.00	7	3
29.300	96.127	-29.300	-96.127	24.37	27.24	0.28	1.03	612.33	7	3
29.500	96.784	-29.500	-96.784	26.62	29.66	0.30	1.01	648.08	7	3
29.700	97.440	-29.700	-97.440	33.95	37.18	1.10	2.95	688.63	6	3
29.900	98.096	-29.900	-98.096	286.75	287.87	3.40	1.18	239.79	9	5
30.100	98.752	-30.100	-98.752	501.31	501.71	4.08	0.81	84.61	10	6

ConeTec Inc. - CPT Interpretation
Interpretation Output - Release 1.22 Rev. A - Build 5 Format: NLP Imperial
Run No: 04-1129-1222-2045
Job No: 04-806
Client: Hoffman Engineeing
Project: Albany Medical Center - Albany, New York
Site: CPT-P1
Location: AMC
Cone: 20 Ton AD139
CPT Date: 04/12/11
CPT Time: 12:51
CPT File: 806CP3P.COR
Northing (m): 0.000000
Easting (m): 0.000000
Elevation (m): 0.000000

Water Table (m): 18.90 (ft): 62.0
Unit Weight of Water (default): 62.40 pcf
Averaging Increment (m): 0.20
Su Nkt used: 15.00 Su/P' (nc): 0.30
Dr Method : Jamiolkowski - All Sands
State Parameter M: 1.20
Used Unit Weights Assigned to Soil Zones
N160Ic Calculated using qcln
N160cs Calculated using qclncs

Col-01 Depth (m)	Col-02 Depth (ft)	Col-03 Elev. (m)	Col-04 Elev. (ft)	Col-05 qc (tsf)	Col-06 qt (tsf)	Col-07 fs (tsf)	Col-08 Rf (%)	Col-09 u (ft)	Col-10 SBT (Zone)	Col-11 SBTn (Zone)
0.100	0.328	-0.100	-0.328	55.39	55.38	0.43	0.78	-0.44	8	-9999.0
0.300	0.984	-0.300	-0.984	92.96	92.97	1.41	1.51	2.01	8	-9999.0
0.500	1.640	-0.500	-1.640	116.98	117.00	1.56	1.34	3.63	8	-9999.0
0.700	2.297	-0.700	-2.297	108.43	108.43	1.15	1.06	0.22	8	6
0.900	2.953	-0.900	-2.953	84.00	84.00	0.88	1.05	0.57	8	6
1.100	3.609	-1.100	-3.609	77.90	77.91	0.69	0.89	0.23	8	6
1.300	4.265	-1.300	-4.265	63.26	63.26	0.56	0.89	-0.66	8	6
1.500	4.921	-1.500	-4.921	75.79	75.79	0.84	1.11	-1.00	8	6
1.700	5.577	-1.700	-5.577	87.69	87.69	0.64	0.73	-0.71	8	6
1.900	6.234	-1.900	-6.234	73.48	73.47	0.76	1.04	-1.45	8	6
2.100	6.890	-2.100	-6.890	57.45	57.44	0.66	1.15	-0.46	7	6
2.300	7.546	-2.300	-7.546	35.96	35.95	0.45	1.25	-2.09	7	5
2.500	8.202	-2.500	-8.202	15.64	15.63	0.34	2.20	-1.90	5	4
2.700	8.858	-2.700	-8.858	15.59	15.58	0.25	1.59	-1.64	6	5
2.900	9.514	-2.900	-9.514	20.91	20.90	0.30	1.44	-2.52	6	5
3.100	10.170	-3.100	-10.170	13.67	13.66	0.44	3.19	-2.01	4	4
3.300	10.827	-3.300	-10.827	33.50	33.48	0.30	0.89	-5.09	7	5
3.500	11.483	-3.500	-11.483	43.77	43.75	1.35	3.09	-4.17	6	5
3.700	12.139	-3.700	-12.139	13.80	13.73	0.42	3.05	-14.89	5	4
3.900	12.795	-3.900	-12.795	15.25	15.21	0.44	2.92	-8.26	5	4
4.100	13.451	-4.100	-13.451	19.29	19.31	0.44	2.30	3.09	5	4
4.300	14.107	-4.300	-14.107	17.36	17.45	0.43	2.49	17.79	5	4
4.500	14.764	-4.500	-14.764	18.62	18.80	0.40	2.11	38.03	6	4
4.700	15.420	-4.700	-15.420	20.46	20.89	0.41	1.94	91.53	6	4
4.900	16.076	-4.900	-16.076	23.84	24.68	0.42	1.71	178.34	6	4
5.100	16.732	-5.100	-16.732	34.77	34.91	0.97	2.78	31.17	6	4
5.300	17.388	-5.300	-17.388	19.95	19.87	0.30	1.49	-16.71	6	4
5.500	18.044	-5.500	-18.044	16.05	16.04	0.28	1.73	-3.29	6	4
5.700	18.701	-5.700	-18.701	16.50	16.58	0.21	1.27	16.91	6	4
5.900	19.357	-5.900	-19.357	13.56	14.32	0.13	0.89	161.51	6	4
6.100	20.013	-6.100	-20.013	27.04	27.92	0.58	2.07	188.90	6	4
6.300	20.669	-6.300	-20.669	26.53	26.65	0.59	2.21	26.63	6	4

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Col-01 Depth (m)	Col-02 Depth (ft)	Col-03 Elev. (m)	Col-04 Elev. (ft)	Col-05 qc (tsf)	Col-06 qt (tsf)	Col-07 fs (tsf)	Col-08 Rf (%)	Col-09 u (ft)	Col-10 SBT (Zone)	Col-11 SBTn (Zone)
6.500	21.325	-6.500	-21.325	34.24	34.60	0.48	1.39	75.98	7	5
6.700	21.981	-6.700	-21.981	14.77	15.39	0.37	2.39	131.06	5	3
6.900	22.638	-6.900	-22.638	14.80	15.45	0.12	0.75	137.54	6	4
7.100	23.294	-7.100	-23.294	13.08	13.95	0.10	0.72	185.84	6	4
7.300	23.950	-7.300	-23.950	11.77	12.75	0.14	1.06	209.80	6	4
7.500	24.606	-7.500	-24.606	20.80	21.56	0.45	2.10	163.73	6	4
7.700	25.262	-7.700	-25.262	10.99	11.87	0.14	1.14	188.55	6	4
7.900	25.918	-7.900	-25.918	10.63	11.56	0.11	0.95	198.75	6	4
8.100	26.574	-8.100	-26.574	10.12	11.09	0.10	0.93	205.38	6	4
8.300	27.231	-8.300	-27.231	9.74	10.67	0.09	0.87	198.64	6	4
8.500	27.887	-8.500	-27.887	10.75	11.79	0.11	0.96	223.10	6	4
8.700	28.543	-8.700	-28.543	10.67	11.75	0.10	0.85	231.50	6	4
8.900	29.199	-8.900	-29.199	12.39	13.58	0.14	1.01	254.40	6	4
9.100	29.855	-9.100	-29.855	13.14	14.41	0.19	1.30	269.48	6	3
9.300	30.511	-9.300	-30.511	15.00	16.39	0.20	1.19	297.72	6	4
9.500	31.168	-9.500	-31.168	15.73	17.24	0.21	1.19	322.40	6	4
9.700	31.824	-9.700	-31.824	15.62	17.10	0.19	1.10	315.62	6	4
9.900	32.480	-9.900	-32.480	17.20	18.73	0.19	0.99	327.11	6	4
10.100	33.136	-10.100	-33.136	16.05	17.60	0.22	1.25	330.43	6	4
10.300	33.792	-10.300	-33.792	14.85	16.34	0.21	1.29	317.71	6	4
10.500	34.448	-10.500	-34.448	14.68	16.16	0.20	1.26	317.20	6	3
10.700	35.105	-10.700	-35.105	16.02	17.54	0.21	1.17	325.04	6	4
10.900	35.761	-10.900	-35.761	16.90	18.41	0.19	1.03	324.29	6	4
11.100	36.417	-11.100	-36.417	16.43	17.87	0.24	1.35	306.01	6	3
11.300	37.073	-11.300	-37.073	15.48	16.81	0.22	1.30	285.14	6	3
11.500	37.729	-11.500	-37.729	15.03	16.51	0.19	1.14	317.15	6	3
11.700	38.385	-11.700	-38.385	15.09	16.61	0.20	1.21	325.05	6	3
11.900	39.042	-11.900	-39.042	15.14	16.65	0.18	1.10	321.18	6	3
12.100	39.698	-12.100	-39.698	15.49	16.95	0.19	1.14	312.39	6	3
12.300	40.354	-12.300	-40.354	15.62	17.13	0.18	1.07	322.34	6	3
12.500	41.010	-12.500	-41.010	14.74	16.20	0.19	1.16	309.99	6	3
12.700	41.666	-12.700	-41.666	15.33	16.84	0.18	1.06	322.02	6	3
12.900	42.322	-12.900	-42.322	15.48	17.03	0.19	1.12	330.89	6	3
13.100	42.978	-13.100	-42.978	15.70	17.29	0.19	1.07	339.33	6	3
13.300	43.635	-13.300	-43.635	15.81	17.33	0.18	1.06	324.00	6	3
13.500	44.291	-13.500	-44.291	14.40	15.84	0.19	1.19	307.07	6	3
13.700	44.947	-13.700	-44.947	13.75	15.19	0.15	1.01	306.47	6	3
13.900	45.603	-13.900	-45.603	13.84	15.27	0.15	0.98	304.87	6	3
14.100	46.259	-14.100	-46.259	13.99	15.43	0.16	1.04	307.40	6	3
14.300	46.915	-14.300	-46.915	13.78	15.20	0.18	1.19	301.81	6	3
14.500	47.572	-14.500	-47.572	13.86	15.32	0.17	1.13	310.67	6	3
14.700	48.228	-14.700	-48.228	13.49	14.92	0.16	1.08	304.69	6	3
14.900	48.884	-14.900	-48.884	13.16	14.56	0.16	1.08	299.25	6	3
15.100	49.540	-15.100	-49.540	13.72	15.17	0.16	1.07	310.85	6	3
15.300	50.196	-15.300	-50.196	12.98	14.42	0.16	1.08	306.38	6	3
15.500	50.852	-15.500	-50.852	13.35	14.80	0.14	0.97	308.88	6	3
15.700	51.509	-15.700	-51.509	13.05	14.47	0.15	1.06	304.04	6	3
15.900	52.165	-15.900	-52.165	13.57	15.05	0.17	1.10	316.21	6	3
16.100	52.821	-16.100	-52.821	13.51	15.03	0.15	0.97	324.95	6	3
16.300	53.477	-16.300	-53.477	13.46	15.00	0.14	0.94	327.19	6	3
16.500	54.133	-16.500	-54.133	13.16	14.72	0.16	1.11	332.68	6	3
16.700	54.789	-16.700	-54.789	15.65	17.34	0.18	1.06	360.74	6	3
16.900	55.446	-16.900	-55.446	16.56	18.35	0.20	1.09	381.55	6	3
17.100	56.102	-17.100	-56.102	17.01	18.83	0.20	1.04	388.23	6	3
17.300	56.758	-17.300	-56.758	17.49	19.33	0.20	1.05	392.56	6	3
17.500	57.414	-17.500	-57.414	17.46	19.31	0.21	1.08	396.28	6	3
17.700	58.070	-17.700	-58.070	17.14	18.94	0.20	1.07	385.41	6	3
17.900	58.726	-17.900	-58.726	17.21	19.09	0.21	1.09	401.18	6	3
18.100	59.382	-18.100	-59.382	17.44	19.30	0.21	1.07	396.73	6	3
18.300	60.039	-18.300	-60.039	16.87	18.70	0.19	1.03	391.87	6	3

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Col-01 Depth (m)	Col-02 Depth (ft)	Col-03 Elev. (m)	Col-04 Elev. (ft)	Col-05 qc (tsf)	Col-06 qt (tsf)	Col-07 fs (tsf)	Col-08 Rf (%)	Col-09 u (ft)	Col-10 SBT (Zone)	Col-11 SBTn (Zone)
18.500	60.695	-18.500	-60.695	17.37	19.22	0.20	1.02	394.89	6	3
18.700	61.351	-18.700	-61.351	16.95	18.80	0.19	1.00	395.77	6	3
18.900	62.007	-18.900	-62.007	16.48	18.30	0.19	1.03	388.13	6	3
19.100	62.663	-19.100	-62.663	16.58	18.43	0.18	0.97	396.18	6	3
19.300	63.319	-19.300	-63.319	16.40	18.25	0.18	1.00	393.31	6	3
19.500	63.976	-19.500	-63.976	16.48	18.31	0.20	1.11	389.81	6	3
19.700	64.632	-19.700	-64.632	17.06	18.96	0.20	1.03	405.50	6	3
19.900	65.288	-19.900	-65.288	17.38	19.29	0.19	0.99	409.31	6	3
20.100	65.944	-20.100	-65.944	16.93	18.84	0.20	1.06	407.98	6	3
20.300	66.600	-20.300	-66.600	17.01	18.91	0.19	0.98	405.84	6	3
20.500	67.256	-20.500	-67.256	16.69	18.61	0.17	0.93	410.12	6	3
20.700	67.913	-20.700	-67.913	16.72	18.64	0.18	0.97	409.32	6	3
20.900	68.569	-20.900	-68.569	16.42	18.34	0.17	0.93	410.03	6	3
21.100	69.225	-21.100	-69.225	15.05	16.87	0.13	0.79	390.03	6	3
21.300	69.881	-21.300	-69.881	16.08	17.95	0.13	0.74	398.14	6	3
21.500	70.537	-21.500	-70.537	15.28	17.12	0.14	0.83	391.06	6	3
21.700	71.193	-21.700	-71.193	14.91	16.71	0.14	0.85	383.34	6	3
21.900	71.850	-21.900	-71.850	14.36	16.08	0.13	0.81	366.97	6	3
22.100	72.506	-22.100	-72.506	12.95	14.60	0.10	0.70	352.18	6	1
22.300	73.162	-22.300	-73.162	13.91	15.59	0.12	0.76	358.75	6	3
22.500	73.818	-22.500	-73.818	13.78	15.43	0.12	0.75	350.98	6	3
22.700	74.474	-22.700	-74.474	13.40	14.98	0.11	0.70	338.13	6	1
22.900	75.130	-22.900	-75.130	14.37	16.15	0.13	0.82	378.31	6	3
23.100	75.786	-23.100	-75.786	16.16	18.13	0.16	0.87	420.21	6	3
23.300	76.443	-23.300	-76.443	17.45	19.56	0.17	0.85	448.91	6	3
23.500	77.099	-23.500	-77.099	17.78	19.89	0.17	0.86	451.90	6	3
23.700	77.755	-23.700	-77.755	18.49	20.67	0.19	0.90	464.66	6	3
23.900	78.411	-23.900	-78.411	17.42	19.49	0.15	0.75	441.95	6	3
24.100	79.067	-24.100	-79.067	16.24	18.31	0.15	0.81	440.81	6	3
24.300	79.723	-24.300	-79.723	17.76	19.88	0.15	0.77	452.76	6	3
24.500	80.380	-24.500	-80.380	16.91	18.92	0.17	0.87	429.53	6	3
24.700	81.036	-24.700	-81.036	16.34	18.32	0.15	0.82	423.30	6	3
24.900	81.692	-24.900	-81.692	16.37	18.30	0.12	0.64	412.63	6	1
25.100	82.348	-25.100	-82.348	15.88	17.74	0.11	0.61	397.87	6	1
25.300	83.004	-25.300	-83.004	15.69	17.64	0.15	0.84	418.27	6	3
25.500	83.660	-25.500	-83.660	17.50	19.57	0.17	0.87	440.83	6	3
25.700	84.317	-25.700	-84.317	16.90	18.97	0.16	0.86	442.19	6	3
25.900	84.973	-25.900	-84.973	15.17	17.19	0.12	0.67	430.47	6	1
26.100	85.629	-26.100	-85.629	15.81	17.78	0.12	0.68	420.54	6	1
26.300	86.285	-26.300	-86.285	15.91	17.84	0.11	0.62	412.94	6	1
26.500	86.941	-26.500	-86.941	16.00	18.01	0.11	0.60	427.34	6	1
26.700	87.597	-26.700	-87.597	14.76	16.74	0.08	0.49	424.39	6	1
26.900	88.254	-26.900	-88.254	18.11	20.08	0.13	0.62	419.93	7	1
27.100	88.910	-27.100	-88.910	15.40	17.40	0.07	0.37	428.54	7	1
27.300	89.566	-27.300	-89.566	20.46	22.32	0.08	0.37	396.74	7	1
27.500	90.222	-27.500	-90.222	16.67	18.71	0.08	0.44	434.33	7	1
27.700	90.878	-27.700	-90.878	14.92	17.01	0.07	0.40	446.98	6	1
27.900	91.534	-27.900	-91.534	17.26	19.34	0.09	0.45	442.85	7	1
28.100	92.190	-28.100	-92.190	16.87	19.08	0.11	0.56	471.74	7	1
28.300	92.847	-28.300	-92.847	17.66	19.90	0.10	0.52	477.17	7	1
28.500	93.503	-28.500	-93.503	17.65	19.88	0.12	0.61	476.64	7	1
28.700	94.159	-28.700	-94.159	16.75	18.97	0.10	0.52	474.19	7	1
28.900	94.815	-28.900	-94.815	17.31	19.51	0.11	0.54	468.46	7	1
29.100	95.471	-29.100	-95.471	17.10	19.34	0.11	0.56	479.03	7	1
29.300	96.127	-29.300	-96.127	16.79	19.08	0.09	0.49	488.87	7	1
29.500	96.784	-29.500	-96.784	18.10	20.45	0.12	0.56	502.37	7	1
29.700	97.440	-29.700	-97.440	18.41	20.84	0.11	0.53	518.83	7	1
29.900	98.096	-29.900	-98.096	23.81	25.78	0.21	0.81	419.28	7	3
30.100	98.752	-30.100	-98.752	25.46	27.26	0.16	0.60	385.97	7	3
30.300	99.408	-30.300	-99.408	16.98	19.13	0.12	0.62	459.55	7	1

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Col-01 Depth (m)	Col-02 Depth (ft)	Col-03 Elev. (m)	Col-04 Elev. (ft)	Col-05 qc (tsf)	Col-06 qt (tsf)	Col-07 fs (tsf)	Col-08 Rf (%)	Col-09 u (ft)	Col-10 SBT (Zone)	Col-11 SBTn (Zone)
30.500	100.064	-30.500	-100.064	18.05	20.45	0.12	0.58	512.56	7	1
30.700	100.721	-30.700	-100.721	18.72	21.23	0.11	0.51	536.48	7	1
30.900	101.377	-30.900	-101.377	17.44	19.91	0.09	0.47	527.69	7	1
31.100	102.033	-31.100	-102.033	17.04	19.37	0.06	0.31	497.57	7	1
31.300	102.689	-31.300	-102.689	17.23	19.53	0.07	0.36	491.30	7	1
31.500	103.345	-31.500	-103.345	16.37	18.67	0.07	0.39	491.00	7	1
31.700	104.001	-31.700	-104.001	16.72	18.83	0.10	0.52	451.33	7	1
31.900	104.658	-31.900	-104.658	16.74	18.85	0.10	0.52	451.81	7	1
32.100	105.314	-32.100	-105.314	17.68	19.86	0.11	0.56	465.52	7	1
32.300	105.970	-32.300	-105.970	26.78	28.33	0.63	2.21	329.85	6	3
32.500	106.626	-32.500	-106.626	20.73	22.43	0.35	1.56	363.17	6	3
32.700	107.282	-32.700	-107.282	21.02	23.41	0.27	1.17	511.13	6	3
32.900	107.938	-32.900	-107.938	21.08	23.81	0.21	0.89	582.53	7	3
33.100	108.594	-33.100	-108.594	20.68	23.47	0.17	0.72	594.14	7	3
33.300	109.251	-33.300	-109.251	21.42	24.22	0.17	0.68	599.51	7	3
33.500	109.907	-33.500	-109.907	21.48	24.28	0.17	0.70	598.37	7	3
33.700	110.563	-33.700	-110.563	20.27	22.98	0.14	0.59	579.84	7	1
33.900	111.219	-33.900	-111.219	19.83	22.55	0.14	0.61	580.41	7	1
34.100	111.875	-34.100	-111.875	22.42	25.34	0.18	0.71	621.98	7	3
34.300	112.531	-34.300	-112.531	23.23	26.20	0.18	0.67	634.26	7	3
34.500	113.188	-34.500	-113.188	21.86	24.77	0.17	0.69	620.30	7	3
34.700	113.844	-34.700	-113.844	23.09	25.81	0.21	0.83	579.44	7	3
34.900	114.500	-34.900	-114.500	24.37	27.38	0.21	0.75	643.48	7	3
35.100	115.156	-35.100	-115.156	23.32	26.36	0.23	0.86	650.78	7	3
35.300	115.812	-35.300	-115.812	25.35	28.55	0.21	0.72	682.96	7	3
35.500	116.468	-35.500	-116.468	24.69	27.79	0.21	0.77	662.66	7	3
35.700	117.125	-35.700	-117.125	24.98	28.00	0.21	0.76	644.96	7	3
35.900	117.781	-35.900	-117.781	24.59	27.50	0.18	0.66	619.80	7	3
36.100	118.437	-36.100	-118.437	23.81	26.91	0.18	0.68	660.55	7	3
36.300	119.093	-36.300	-119.093	24.20	27.31	0.19	0.70	663.85	7	3
36.500	119.749	-36.500	-119.749	24.58	27.76	0.22	0.79	678.55	7	3
36.700	120.405	-36.700	-120.405	22.79	25.82	0.31	1.19	646.36	6	3
36.900	121.062	-36.900	-121.062	25.27	28.06	0.28	1.00	597.48	7	3
37.100	121.718	-37.100	-121.718	23.80	26.90	0.20	0.75	663.21	7	3
37.300	122.374	-37.300	-122.374	25.04	28.35	0.20	0.70	705.84	7	3
37.500	123.030	-37.500	-123.030	26.62	30.00	0.20	0.67	720.33	7	3
37.700	123.686	-37.700	-123.686	23.86	27.12	0.20	0.74	696.54	7	3
37.900	124.342	-37.900	-124.342	24.34	27.35	0.19	0.68	642.08	7	3
38.100	124.998	-38.100	-124.998	22.61	25.80	0.18	0.70	681.07	7	3
38.300	125.655	-38.300	-125.655	23.59	26.62	0.19	0.70	646.85	7	3
38.500	126.311	-38.500	-126.311	110.05	112.45	1.11	0.98	512.34	8	5

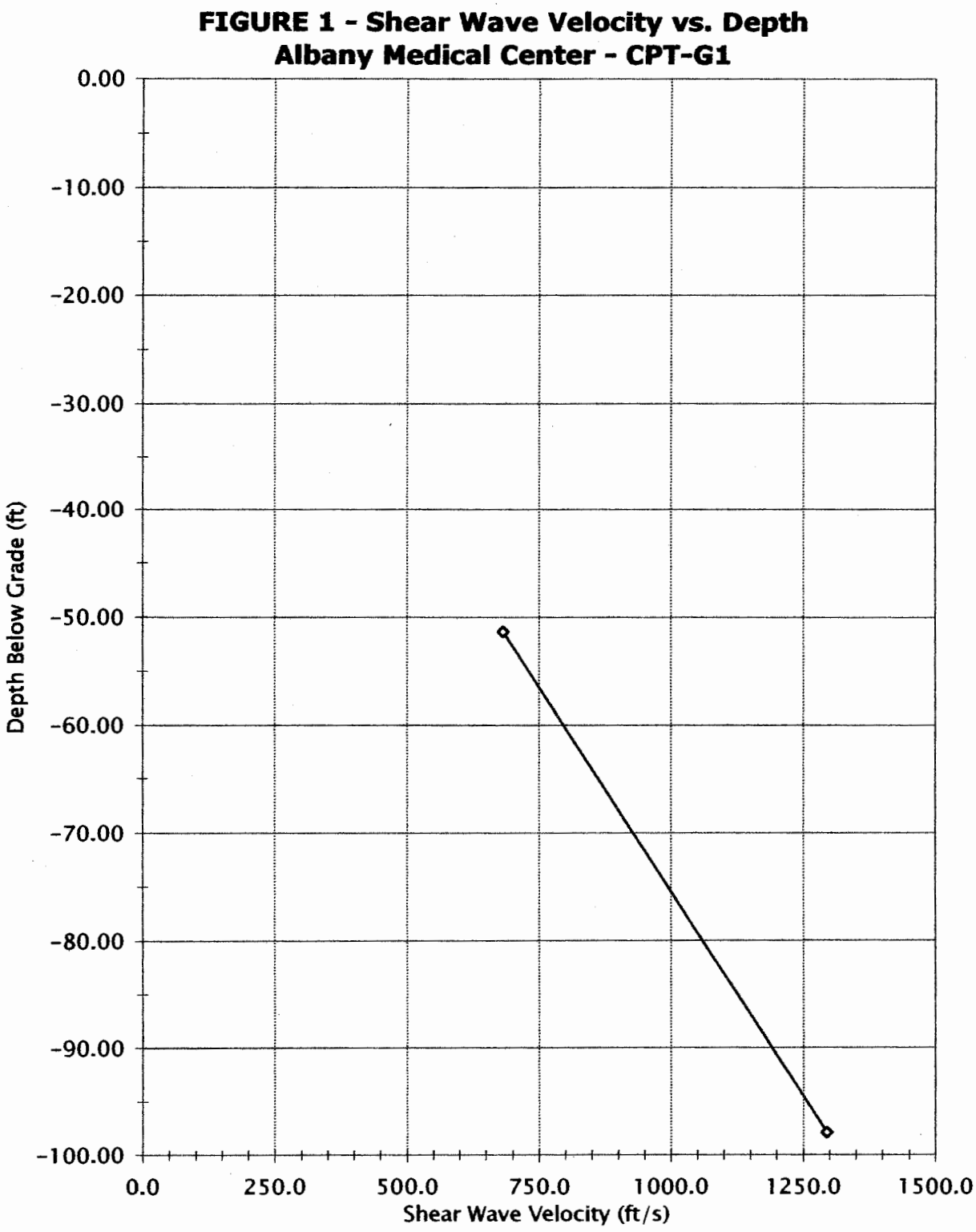
FIGURE 1 - Shear Wave Velocity vs. Depth
Albany Medical Center - CPT-G1
0.00
-10.00
-20.00
-30.00
-40.00
-50.00
-60.00
-70.00
-80.00
-90.00
-100.00
Depth Below Grade (ft)
0.0
250.0
500.0
750.0
1000.0
1250.0
1500.0
Shear Wave Velocity (ft/s)

CONETEC

TABLE 1 - Shear Wave Velocity Data Reduction Sheet

Hole:	CPT-G1
Location:	Albany Medical Center
Cone:	AD139
Date:	12-Nov-04
Source:	Hammer & Beam
Source Depth	0.00 m
Source Offset	0.60 m

Geophone Depth(m)	Travel Path (m)	Interval time (ms)	Velocity (m/s)	Velocity (ft/s)	Interval Depth (m)	Interval Depth (ft)
1.60	1.71					
29.70	29.71	134.46	208.2	683.1	15.65	51.34
30.00	30.01	0.76	394.7	1294.8	29.85	97.93

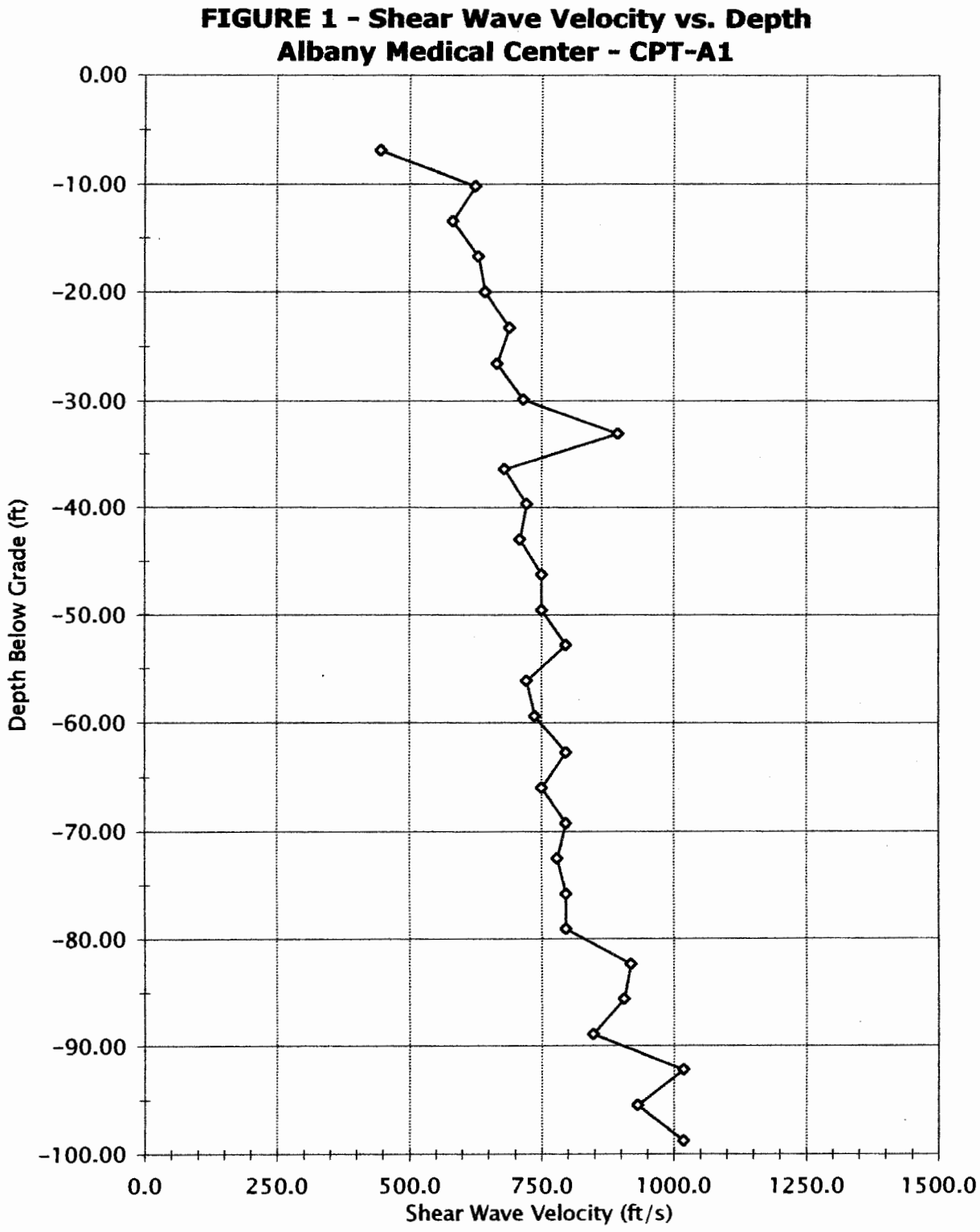
FIGURE 1 - Shear Wave Velocity vs. Depth
Albany Medical Center - CPT-A1
0.00
-10.00
-20.00
-30.00
-40.00
-50.00
-60.00
-70.00
-80.00
-90.00
-100.00
Depth Below Grade (ft)
0.0
250.0
500.0
750.0
1000.0
1250.0
1500.0
Shear Wave Velocity (ft/s)

CONETEC

TABLE 1 - Shear Wave Velocity Data Reduction Sheet

Hole: CPT-A1
Location: Albany Medical Center
Cone: AD139
Date: 12-Nov-04
Source: Hammer & Beam

Source Depth	0.00 m
Source Offset	0.60 m

Geophone Depth(m)	Travel Path (m)	Interval time (ms)	Velocity (m/s)	Velocity (ft/s)	Interval Depth (m)	Interval Depth (ft)
1.60	1.71					
2.60	2.67	7.07	135.7	445.3	2.10	6.89
3.60	3.65	5.15	190.5	625.2	3.10	10.17
4.60	4.64	5.57	177.6	582.7	4.10	13.45
5.60	5.63	5.16	192.5	631.4	5.10	16.73
6.60	6.63	5.07	196.3	644.0	6.10	20.01
7.60	7.62	4.74	210.2	689.7	7.10	23.29
8.60	8.62	4.91	203.1	666.4	8.10	26.57
9.60	9.62	4.57	218.3	716.3	9.10	29.86
10.60	10.62	3.66	272.7	894.8	10.10	33.14
11.60	11.62	4.82	207.2	679.7	11.10	36.42
12.60	12.61	4.54	220.0	721.8	12.10	39.70
13.60	13.61	4.62	216.2	709.4	13.10	42.98
14.60	14.61	4.37	228.6	750.1	14.10	46.26
15.60	15.61	4.37	228.7	750.2	15.10	49.54
16.60	16.61	4.12	242.5	795.8	16.10	52.82
17.60	17.61	4.54	220.1	722.2	17.10	56.10
18.60	18.61	4.45	224.6	736.9	18.10	59.38
19.60	19.61	4.12	242.6	795.9	19.10	62.66
20.60	20.61	4.37	228.7	750.4	20.10	65.94
21.60	21.61	4.12	242.6	796.0	21.10	69.22
22.60	22.61	4.21	237.4	779.0	22.10	72.51
23.60	23.61	4.12	242.6	796.0	23.10	75.79
24.60	24.61	4.12	242.6	796.1	24.10	79.07
25.60	25.61	3.57	280.0	918.7	25.10	82.35
26.60	26.61	3.62	276.2	906.1	26.10	85.63
27.60	27.61	3.87	258.3	847.5	27.10	88.91
28.60	28.61	3.22	310.5	1018.6	28.10	92.19
29.60	29.61	3.52	284.0	931.8	29.10	95.47
30.60	30.61	3.22	310.5	1018.7	30.10	98.75

Soil & Material Testing, Inc.
57 South Main Street • Castleton, New York 12033
Fax: (518) 732-4516
www.smtesting.com

ALBANY, NY (518) 732-7205
KINGSTON, NY (845) 336-4471
ONEONTA, NY (607) 722-1582
PITTSFIELD, MA (413) 499-5338

November 21, 2008

Mr. Vernon Hoffman
30 Tulip Street
Rotterdam, NY 12306
Fax: (518) 382-1035

Re: #6173 Albany Med. Patient Tower

Soil & Material Testing Inc. is pleased to submit test results for the above referenced project. The sample(s) will be stored for 30 days. Please contact us for longer storage periods.

Test Procedure: ASTM D 4959; Moisture Content of Soils

Sample ID	Moisture Content (%)	Sample ID	Moisture Content (%)
B1 S6	22.8	B2 S9	39.4
B1 S7	20.7	B2 S10	42.6
B1 S8	26.9	B2 S11	42.3
B1 S9	43.2	B3 S1	16.3
B1 S10	48.5	B3 S2	11.8
B1 S11	38.5	B3 S3	10.7
B1 S12	43.7	B3 S4	30.2
B1 S13	41.1	B3 S5	34.7
B2 S1	23.5	B3 S6	36.9
B2 S2	32.1	B3 S7	28.7
B2 S3	38.8	B3 S8	38.0
B2 S4	43.6	B3 S9	44.7
B2 S5	30.6	B3 S10	45.2
B2 S6	34.2	B3 S11	44.2
B2 S7	41.5	B3 S12	34.8
B2 S8	41.9	B3 S13	40.5

SOIL & MATERIAL TESTING, INC.

Theresa M. Hill
Vice President Technical Services

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PITTSFIELD, MA (413) 499-5338

NOVEMBER 25, 2008

Hoffman Engineering
Mr. Vern Hoffman
30 Tulip Street
Rotterdam, NY 12306
Fax: (518) 382-1035

Re: SMT# 6173

Soil & Material Testing Inc. is pleased to submit test results for the above referenced project. The sample(s) will be stored for 30 days. Please contact us for longer storage periods.

Test Procedure: ASTM D4318; Test Method for Liquid Limit, Plastic Limit, Plasticity Index

Sample ID	Liquid Limit	Plastic Limit	Plasticity Index
B2 S6	46.7	38.9	7.7
B3 S7	44.8	59.7	-14.5 (N/P)

If you have any questions, please do not hesitate to contact us.

Yours truly,

SOIL & MATERIAL TESTING, INC.

Theresa M. Hill
Vice President Technical Services

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KINGSTON, NY (845) 336-4471
ONEONTA, NY (607) 722-1562
PITTSFIELD, MA (413) 499-5338

February 10, 2009

Hoffman Engineering
Mr. Vern Hoffman
30 Tulip Street
Rotterdam, NY 12306
Fax: (518) 382-1035

Re: AMC # 6185

Soil & Material Testing Inc. is pleased to submit test results for the above referenced project. The sample(s) will be stored for 30 days. Please contact us for longer storage periods.

Test Procedure: ASTM D4318; Test Method for Liquid Limit, Plastic Limit, Plasticity Index

Sample ID	Liquid Limit	Plastic Limit	Plasticity Index
B3 S2	66.4	65.2	1.2
B3 S1(small bag)	43.9	33.3	10.6
B3 S1.A (split large bag)	37.1	25.6	11.5
B3 S1.B (split large bag)	40.9	35.0	5.9

If you have any questions, please do not hesitate to contact us.

Yours truly,

SOIL & MATERIAL TESTING, INC.

Theresa M. Hill
Vice President Technical Services

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PITTSFIELD, MA (413) 499-5338

February 10, 2009

Hoffman Engineering
Mr. Vern Hoffman
30 Tulip Street
Rotterdam, NY 12306
Fax: (518) 382-1035

Re: AMC # 6185

Soil & Material Testing Inc. is pleased to submit test results for the above referenced project. The sample(s) will be stored for 30 days. Please contact us for longer storage periods.

Test Procedure: ASTM D4318; Test Method for Liquid Limit, Plastic Limit, Plasticity Index

Sample ID	Liquid Limit	Plastic Limit	Plasticity Index
B2 S2	54.12	37.74	16.38
B2 S3	69.25	43.33	25.91

If you have any questions, please do not hesitate to contact us.

Yours truly,

SOIL & MATERIAL TESTING, INC.

Theresa M. Hill
Vice President Technical Services

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PITTSFIELD, MA (413) 499-5338

February 10, 2009

Mr. Vernon Hoffman
30 Tulip Street
Rotterdam, NY 12306
Fax: (518) 382-1035

Re: AMC # 6185

Soil & Material Testing Inc. is pleased to submit test results for the above referenced project. The sample(s) will be stored for 30 days. Please contact us for longer storage periods.

Test Procedure: ASTM D 4959; Moisture Content of Soils

Sample ID	Moisture Content (%)		Sample ID	Moisture Content (%)
B3 S1	30.5		B3 S7	28.8
B3 S2	49.9		B3 S8	28.5
B3 S3	44.3		B3 S9	28.2
B3 S4	46.8		B3 S10	15.1
B3 S5	45.9		B3 S11	9.7
B3 S6	31.5			

If you have any questions, please do not hesitate to contact us.

SOIL & MATERIAL TESTING, INC.

Theresa M. Hill
Vice President Technical Services

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PITTSFIELD, MA (413) 499-5338

February 11, 2009

Mr. Vernon Hoffman
30 Tulip Street
Rotterdam, NY 12306
Fax: (518) 382-1035

Re: AMC # 6185

Soil & Material Testing Inc. is pleased to submit test results for the above referenced project. The sample(s) will be stored for 30 days. Please contact us for longer storage periods.

Test Procedure: ASTM D 4959: Moisture Content of Soils

Sample ID	Moisture Content (%)		Sample ID	Moisture Content (%)
B2 S5	32.2		B2 S9	35.9
B2 S6	30.0		B2 S10	26.4
B2 S7	41.4		B2 S11	10.8
B2 S8	25.1			

If you have any questions, please do not hesitate to contact us.

SOIL & MATERIAL TESTING, INC.

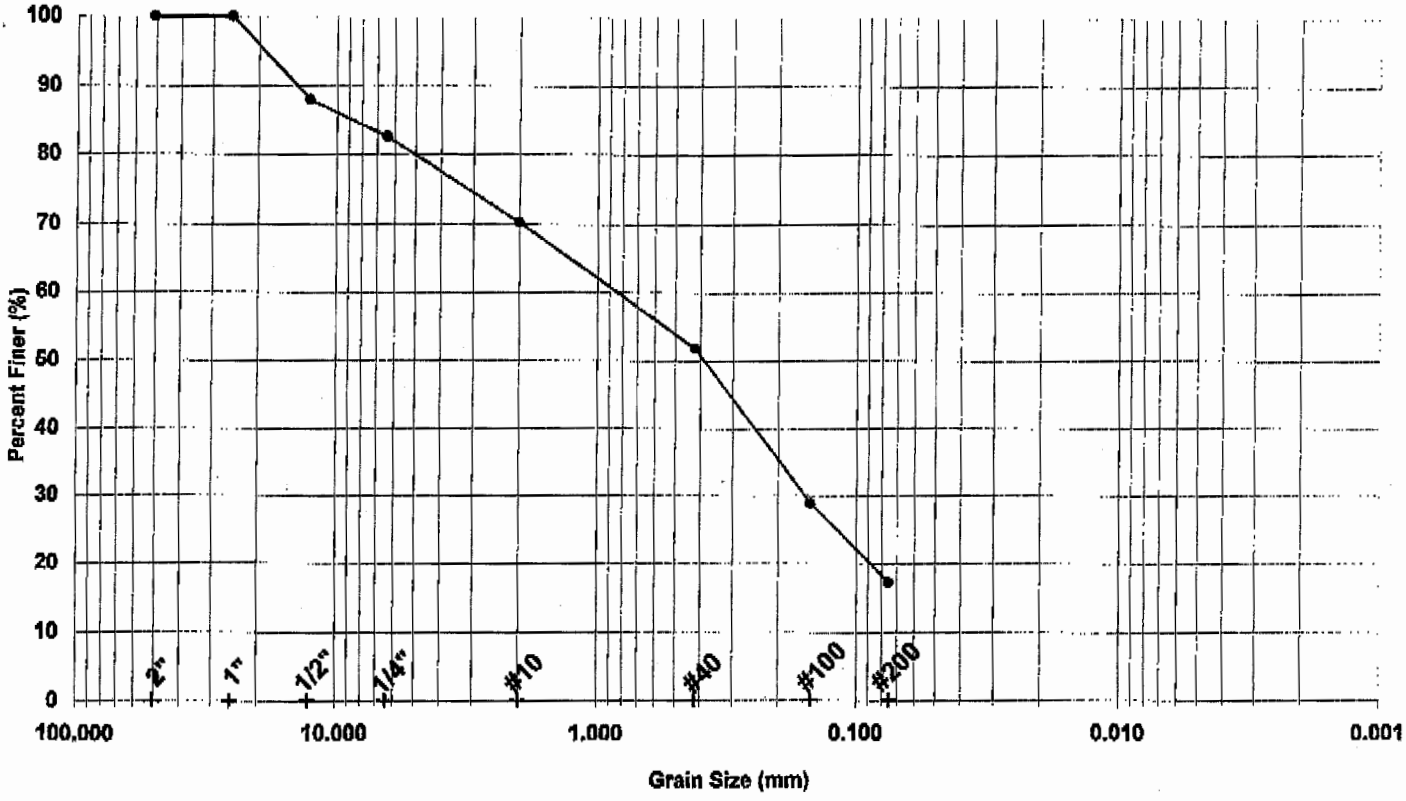
TMH

Theresa M. Hill
Vice President Technical Services

Soil & Material Testing, Inc.

57 South Main Street - Castleton, New York 12033

ASTM D 422 Grain Size Analysis (Washed)



SAMPLE ID: B2 S11

Sieve Size	% Passing
2"	100.0
1"	100.0
1/2"	88.0
1/4"	82.6
#10	70.2
#40	51.8
#100	28.8
#200	17.1

Project: AMC
Client: (VERN)
SMT Project No: 6185
Date Sampled: -
Date Tested: 2-11-9
Test Performed By: TMH
Test Reported By: TMH

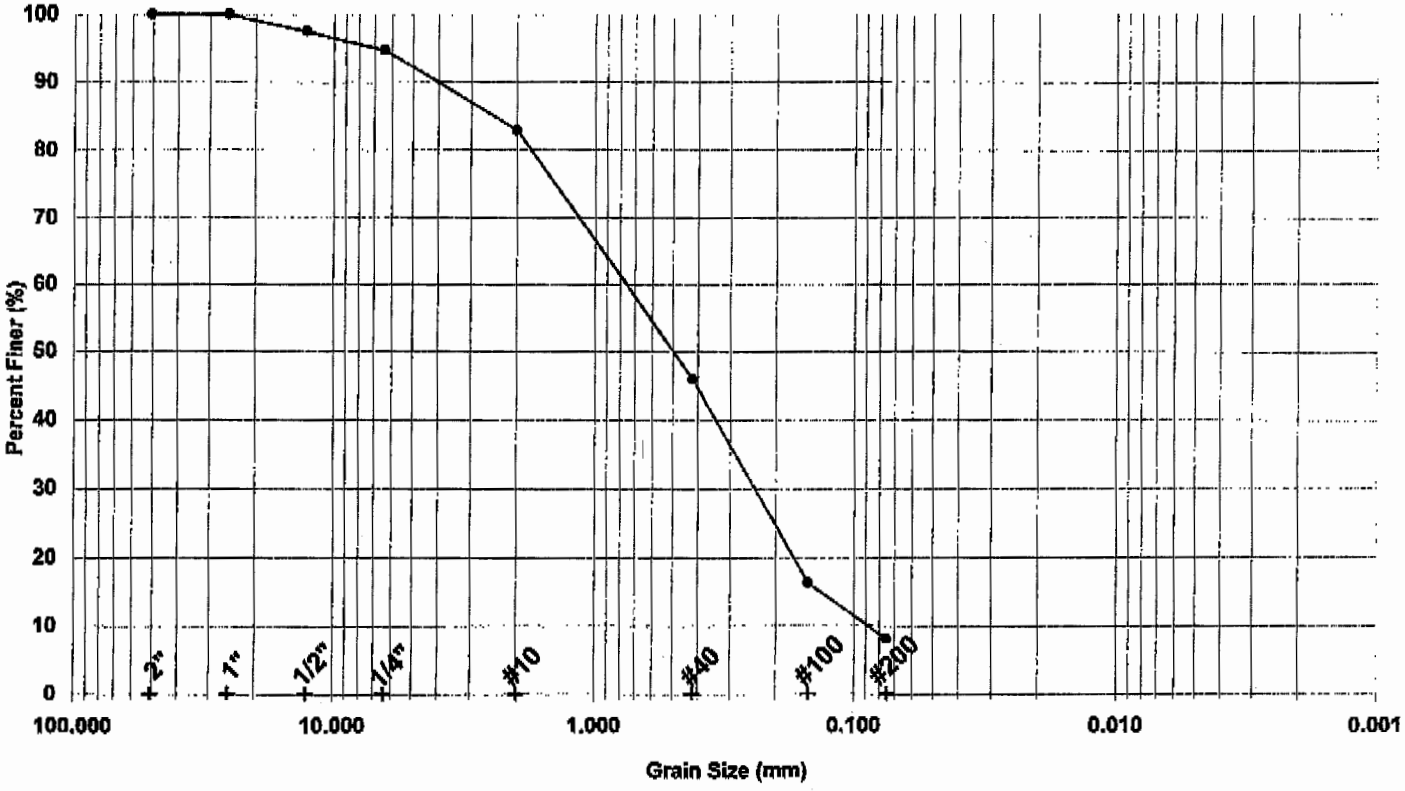
Test Reviewed By: TMH

Theresa M Hill
Vice President Technical Services

Soil & Material Testing, Inc.

57 South Main Street - Castleton, New York 12033

ASTM D 422 Grain Size Analysis (Washed)



SAMPLE ID: B3 S10

Sieve Size	% Passing
2"	100.0
1"	100.0
1/2"	97.5 (1-piece)
1/4"	94.8
#10	82.9
#40	45.9
#100	16.3
#200	8.0

Project: AMC
Client: (VERN)
SMT Project No: 6185
Date Sampled: -
Date Tested: 2-10-9
Test Performed By: TMH
Test Reported By: TMH

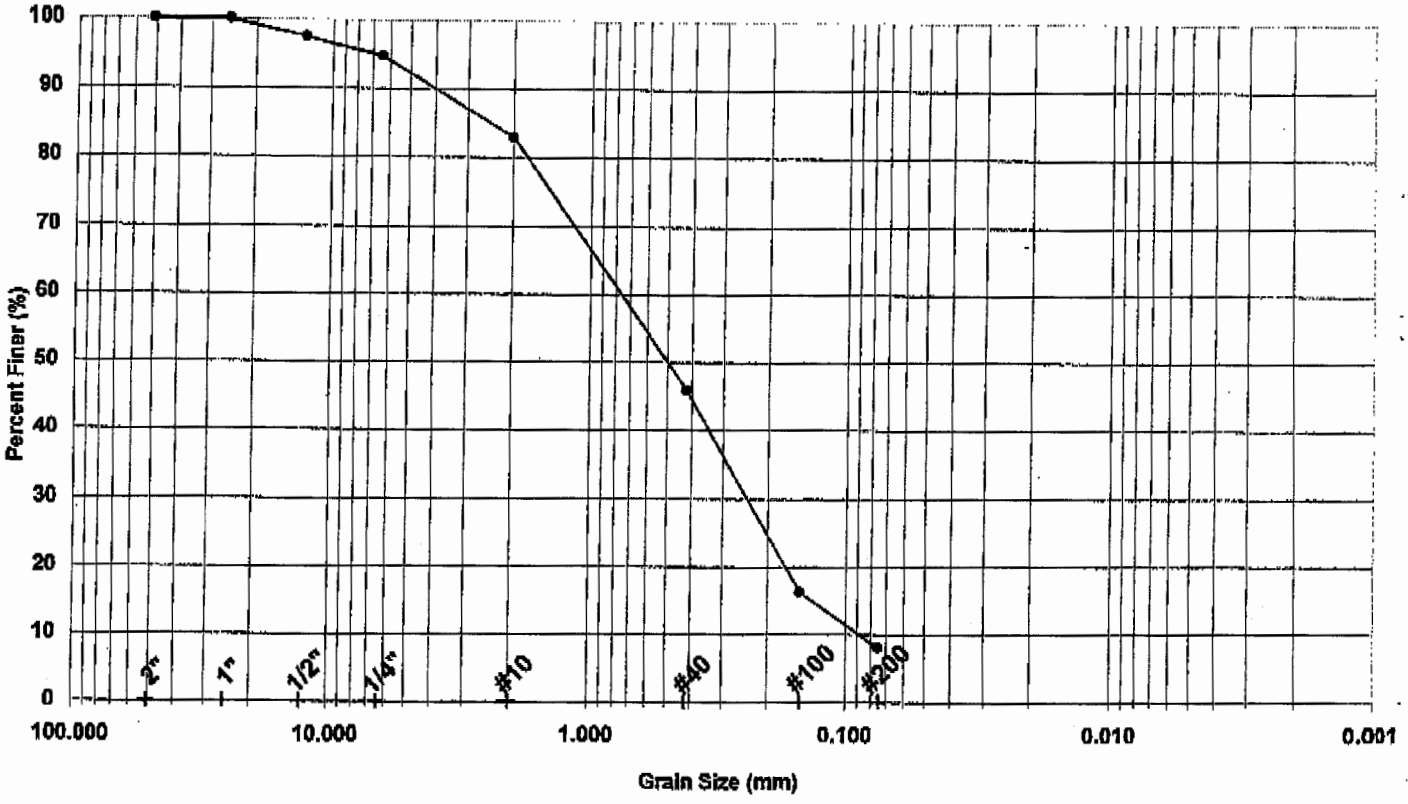
Test Reviewed By:

Theresa M Hill
Vice President Technical Services

Soil & Material Testing, Inc.

57 South Main Street - Castleton, New York 12033

ASTM D 422 Grain Size Analysis (Washed)



SAMPLE ID: B3 S10

Sieve Size	% Passing
2"	100.0
1"	100.0
1/2"	97.5 (1-piece)
1/4"	94.8
#10	82.9
#40	45.9
#100	16.3
#200	8.0

Project: AMC
Client: (VERN)
SMT Project No: 6185
Date Sampled: -
Date Tested: 2-10-9
Test Performed By: TMH
Test Reported By: TMH

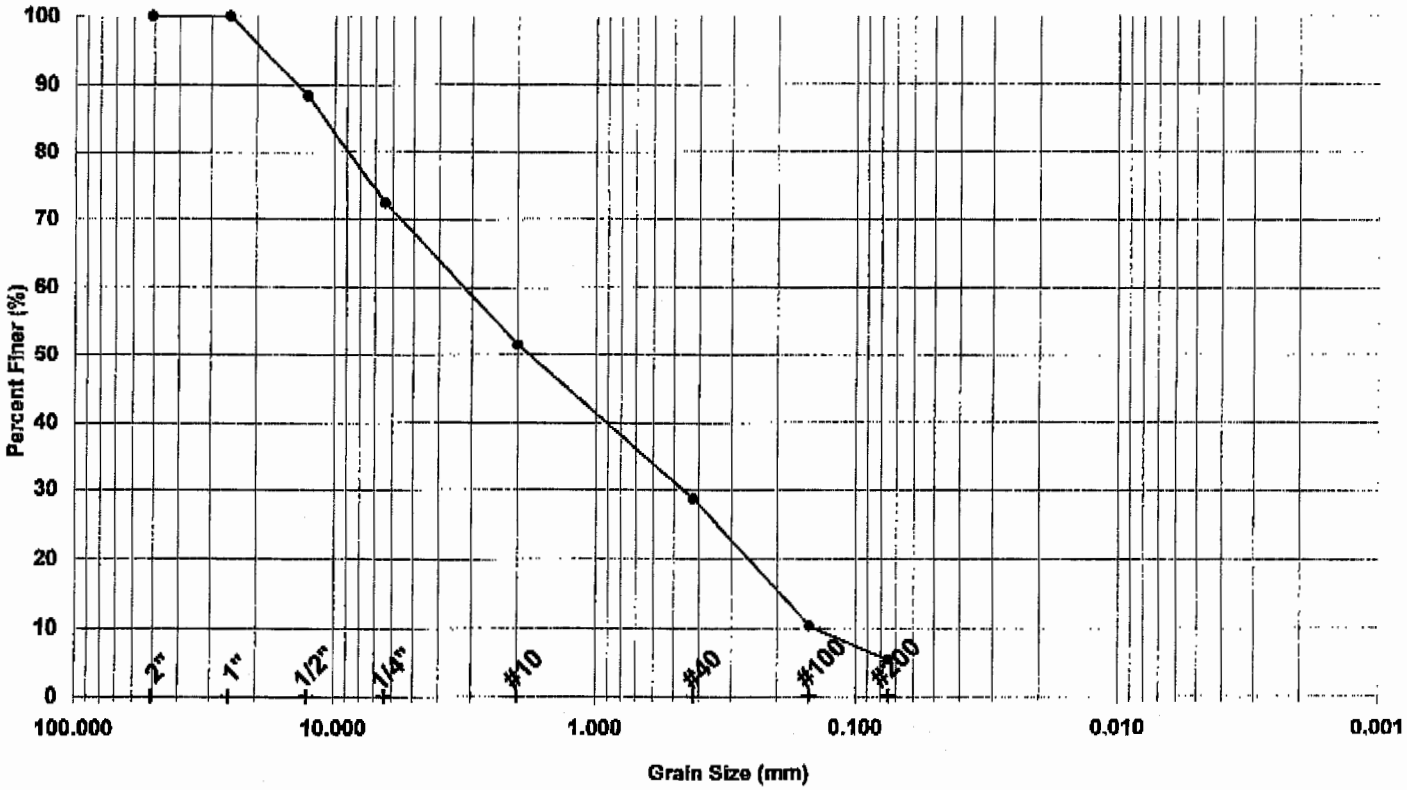
Test Reviewed By:

Theresa M Hill
Vice President Technical Services

Soil & Material Testing, Inc.

57 South Main Street - Castleton, New York 12033

ASTM D 422 Grain Size Analysis (Washed)



SAMPLE ID: B3 S11

Sieve Size	% Passing
2"	100.0
1"	100.0
1/2"	88.3
1/4"	72.3
#10	51.5
#40	28.6
#100	10.2
#200	5.3

Project: AMC
Client: (VERN)
SMT Project No: 6185
Date Sampled: -
Date Tested: 2-10-9
Test Performed By: TMH
Test Reported By: TMH

Test Reviewed By: TMH

Theresa M Hill
Vice President Technical Services

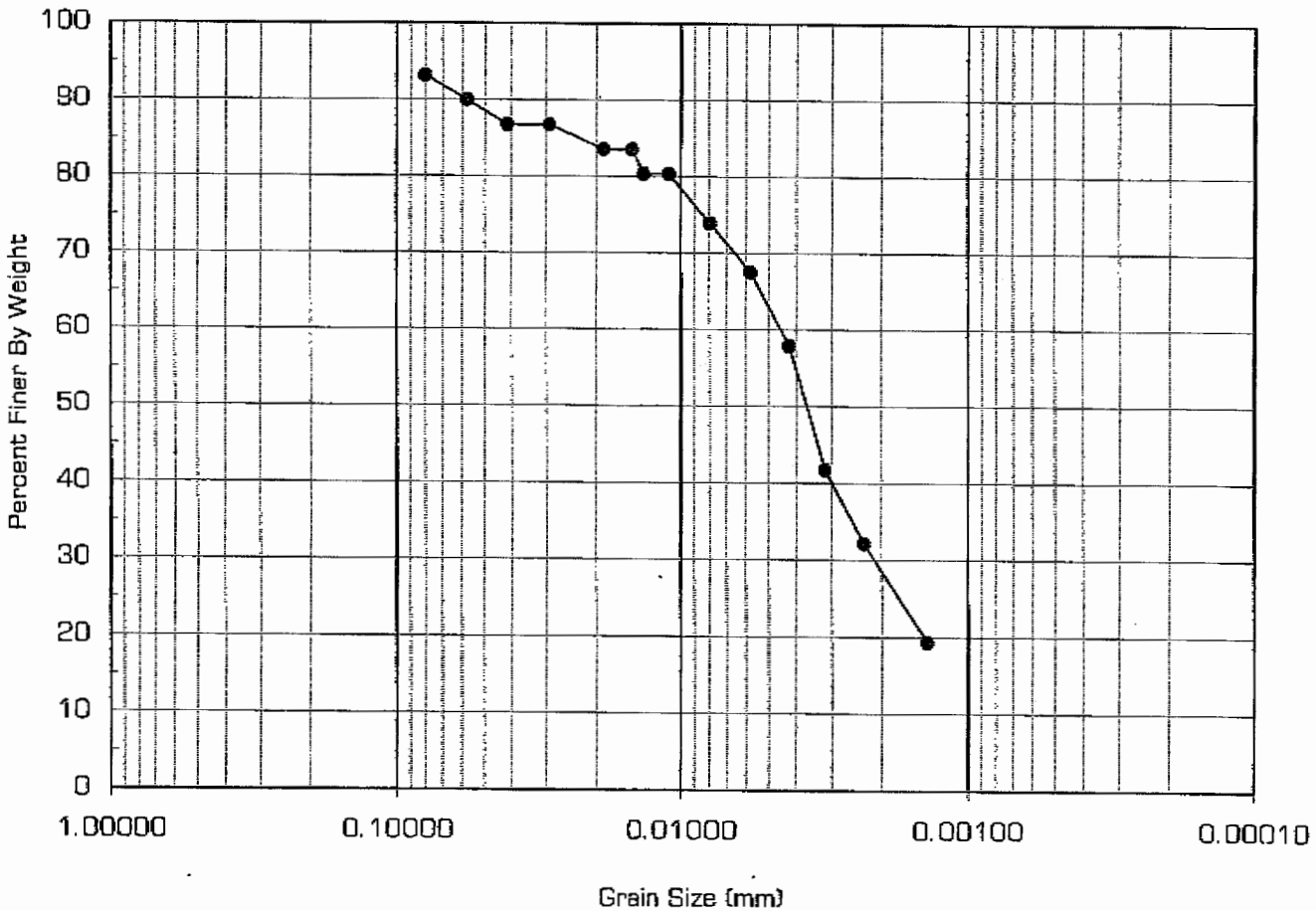
Soil & Material Testing, Inc.

57 South Main Street - Castleton, New York 12033

Client: AMC	Project: East Tower	Sample I.D.: B2S2	SMT Job No.: 6185

ASTM D 422 Sieve Analysis with Hydrometer

Soil "D"	% "P"
0.08006	0.9315
0.05759	0.8993
0.04140	0.8672
0.02928	0.8672
0.01872	0.8351
0.01480	0.8351
0.01344	0.8030
0.01098	0.8030
0.00796	0.7387
0.00576	0.6745
0.00423	0.5781
0.00316	0.4175
0.00231	0.3212
0.00138	0.1927



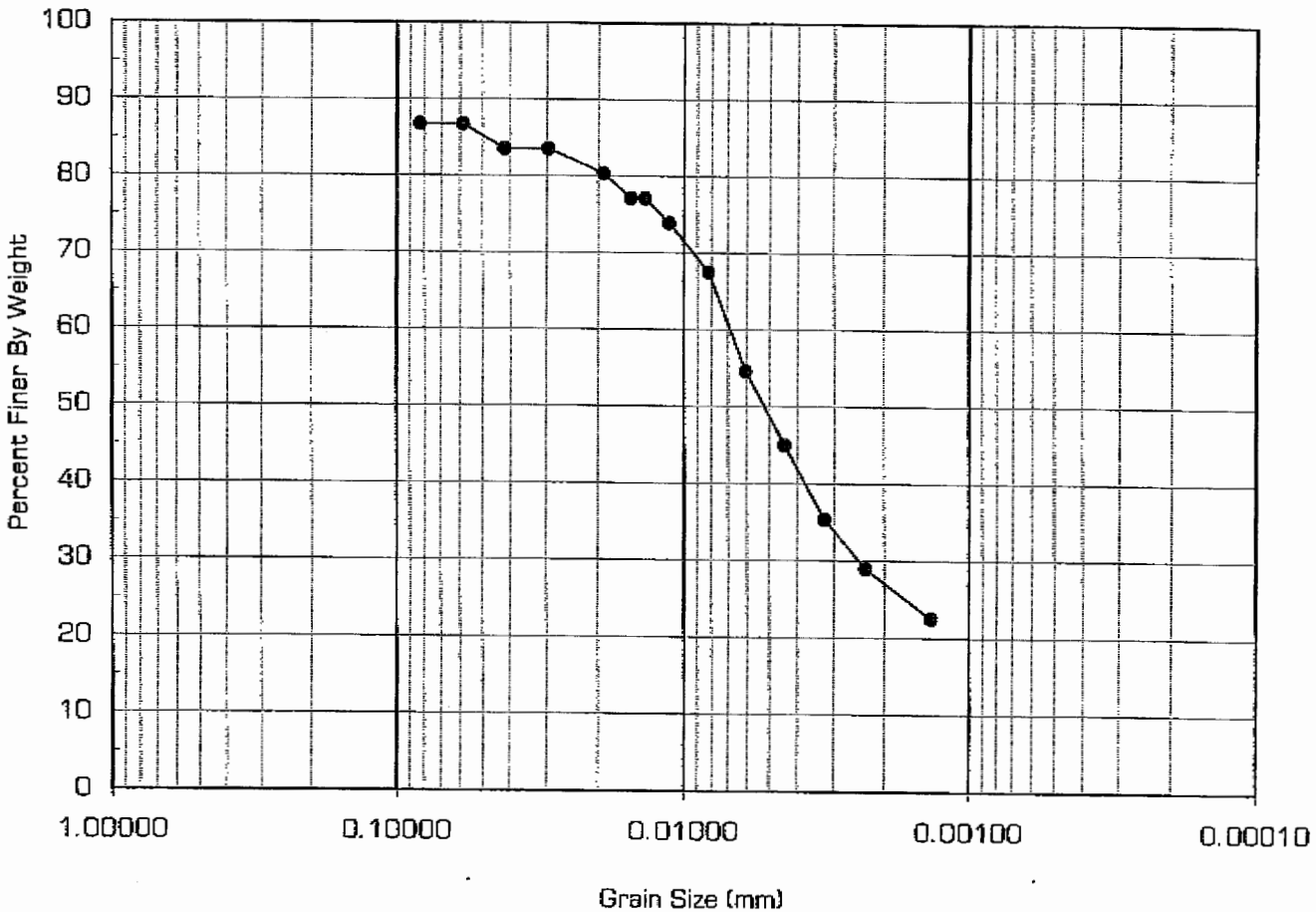
Soil & Material Testing, Inc.

57 South Main Street - Castleton, New York 12033

Client: AMC	Project: East Tower	Sample I.D.: B3S1A	SMT Job No.: 6185

ASTM D 422 Sieve Analysis with Hydrometer

Soil "D"	% "P"
0.08280	0.8672
0.05855	0.8672
0.04185	0.8351
0.02959	0.8351
0.01901	0.8030
0.01526	0.7709
0.01365	0.7709
0.01126	0.7387
0.00815	0.6745
0.00605	0.5460
0.00442	0.4497
0.00323	0.3533
0.00232	0.2890
0.00137	0.2248



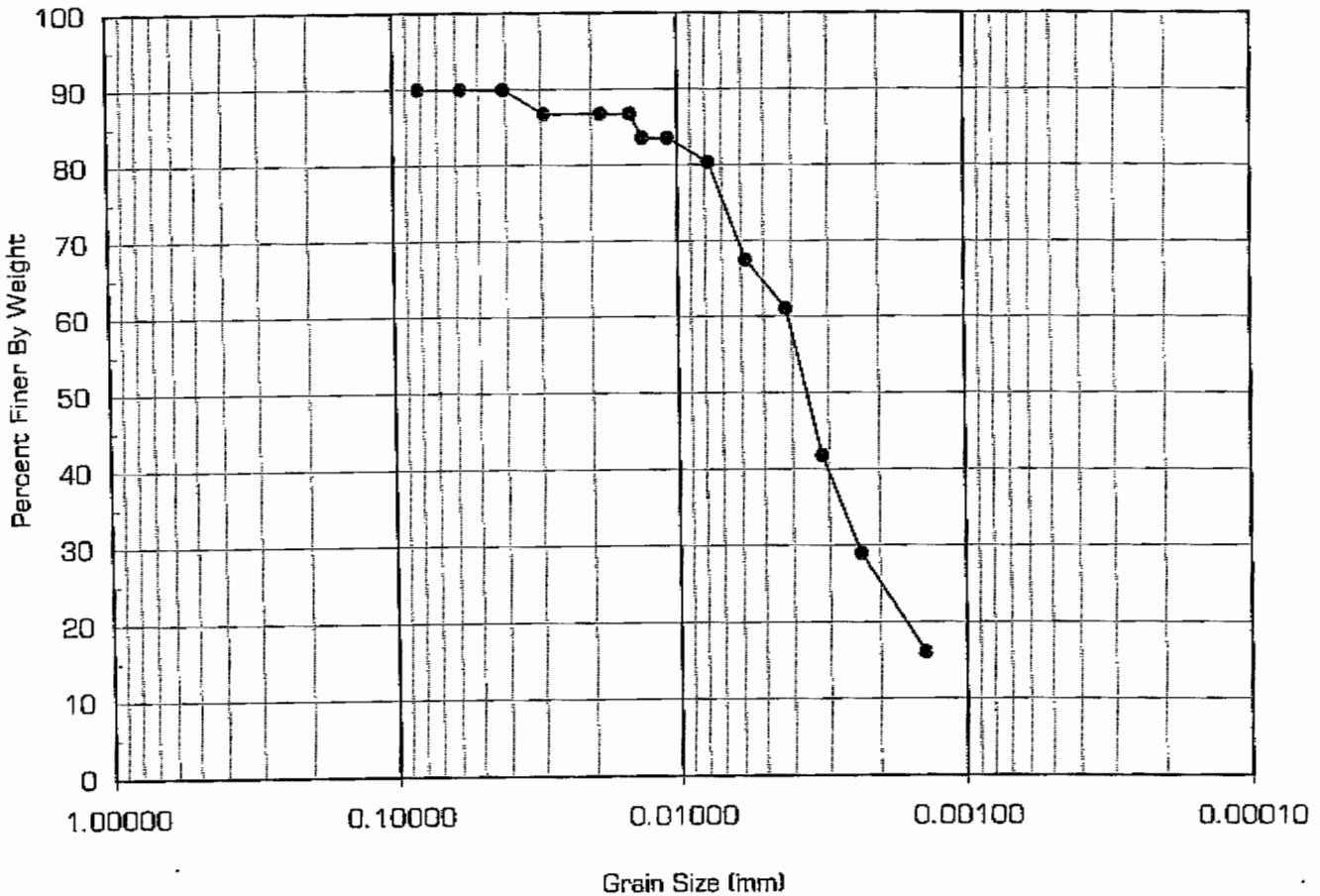
Soil & Material Testing, Inc.

57 South Main Street - Castleton, New York 12033

Client: AMC	Project: East Tower	Sample I.D.: B3S1B	SMT Job No.: 6185

ASTM D 422 Sieve Analysis with Hydrometer

Soil "D"	% "P"
0.08144	0.8993
0.05759	0.8993
0.04072	0.8993
0.02928	0.8672
0.01852	0.8672
0.01464	0.8672
0.01323	0.8351
0.01081	0.8351
0.00776	0.8030
0.00576	0.6745
0.00419	0.6103
0.00316	0.4175
0.00232	0.2890
0.00139	0.1606



PROJECT NAME: Albany Medical
STS JOB NUMBER: 34486
OPERATOR: Seiler
DATE: 12/16/04

PRESSUREMETER TEST RESULTS

BORING NUMBER	DEPTH (ft)	P_o (tsf)	P_f (tsf)	P_l (tsf)	E_d (tsf)	E^+ (tsf)	E_d/E^+	E_d/P_l	P_l/P_f
1	15.0-17.5	1.5	4.0	7.9	70	93	0.75	8.9	2.0
"A"	25.0-27.5	1.5	4.0	8.1	63	118	0.53	7.8	2.0
Addition	30.0-32.5	2.0	5.0	9.0	68	167	0.41	7.6	1.8
	40.0-42.5	2.5	6.5	10.4	159	474	0.34	15.3	1.6
	50.0-52.5	3.0	7.5	13.3	376	657	0.57	28.3	1.8
	65.0-67.5	3.5	8.5	14.2	472	559	0.84	33.2	1.7
3	4.5-7.5	0.5	3.0	5.8	47	126	0.37	8.1	1.9
"F"	9.5-12.0	0.5	4.5	8.8	130	234	0.56	14.8	2.0
Building	14.5-17.0	1.5	4.5	9.1	80	235	0.34	8.8	2.0
	25.0-27.5	1.5	4.0	7.1	68	140	0.49	9.6	1.8
					AVERAGE		0.52	14.2	1.9

CONETEC

Hoffman Engineering

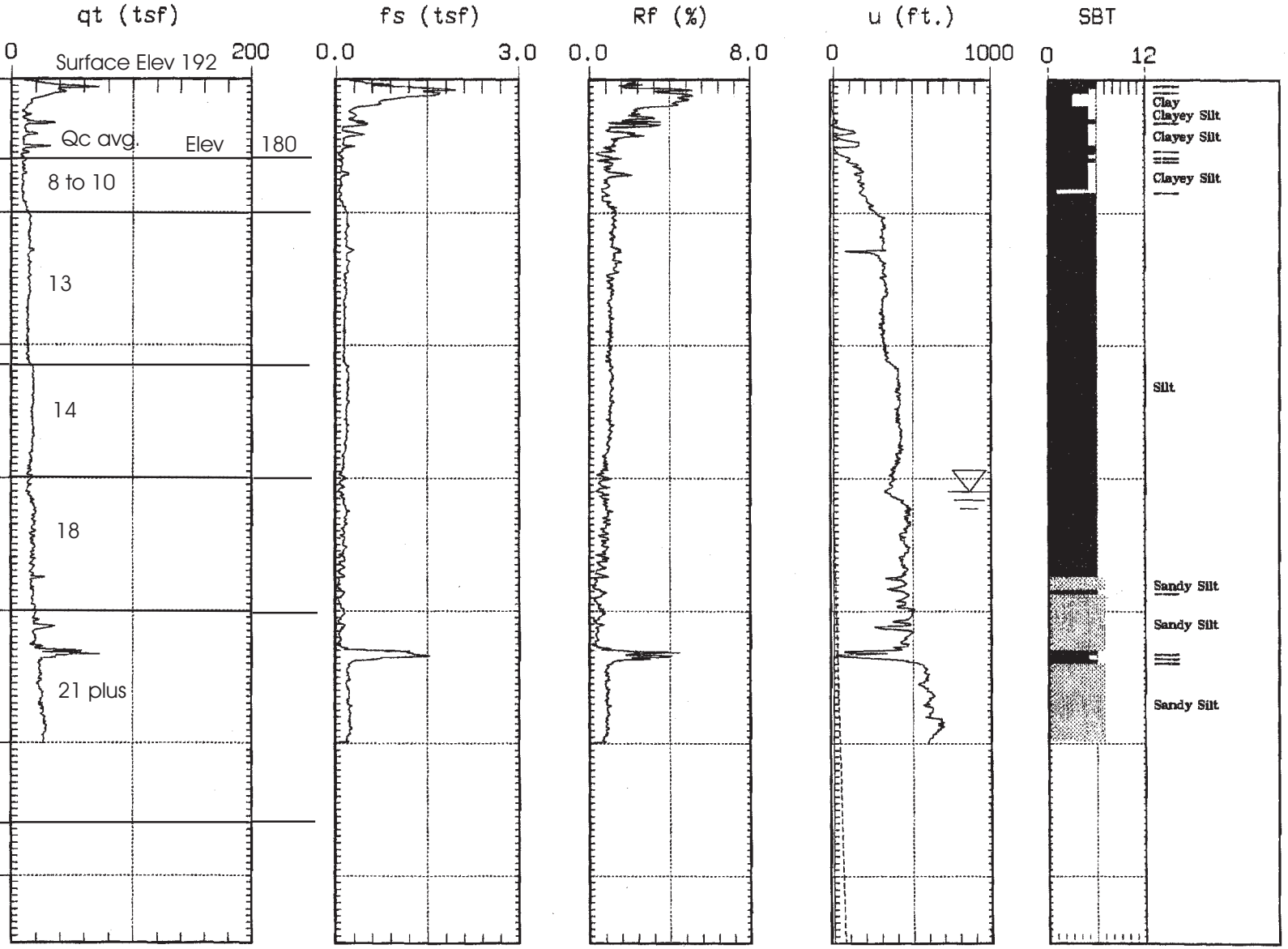
Site:CPT-D4
Location:AMC

Cone:20 Ton AD139
Date:11:12:04 14:38

Pressuremeter Values (tsf)

Pl	Pl/Ed	Ed	Pf *
6	8	48	3
8	8	64	4
10.3	15	155	5.8
16	30	480	8.9
18	26	468	10

* Creep pressure, Pf



Max. Depth: 100.06 (ft)
Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson 1990)
Estimated Phreatic Surface

Appendix 9. ADDITIONAL DISCUSSION ON ESTIMATED SETTLEMENTS:

This section provides some background discussion of the approach used to predict the settlements shown in the main body of the report.

The excavation for the basement will result in a negative net loading for the western portions of the mat foundation (west of approximately contour line 203) and a net added loading of up to about 600 psf along the proposed eastern edge of the mat. I have assumed a 115 pcf total unit weight and a 53 pcf bouyant weight for this estimate.

Even though the building load will be entirely or mostly compensated for there will be settlements of the mat. This is because the subgrade will rebound or heave as a result of the removal of the overburden and then it will deflect downward as the building load is added.

The post construction settlements which will be experienced will be a result of the following: the effects of recovery of the rebound due to excavation not recovered during construction; settlement due to shallow disturbance of the subgrade by excavation and traffic; shearing due to rebound or heave itself (this can extend to a significant depth); and any shearing which may occur due to shear movements related to the behavior of the braced or tied back sheeting such as any bottom heave at the dredge line. The estimation of these settlements is a matter of applying engineering judgment and the actual resulting settlements will be a function of all the factors listed above modified by the small settlements due to the small increase in net load locally as described above. I have estimated the settlements using the applied mat load. A similar result would be obtained if you were to estimate the rebound given the excavation load relief and then assume it would be recovered as the building load was applied.

I have used elastic theory with pressuremeter moduli correlated using the soil data from the 2004 investigation. Primarily, I have compared cone data at D-4(2004) (near B-3&3A(ET2008) with cone data from A-1(2004). I have included a figure in this appendix showing the cone probe log D-4 with assumed pressuremeter moduli (Ed) shown on it along with average values of the limit pressure (Pl), creep pressure (Pf), the ratio Ed/Pl and the cone tip resistance “Qc.” The limit pressures can be reasonably correlated with the cone tip resistance values. The ratio of the limit pressure to the pressuremeter modulus or the cone tip resistance requires some experience with pressuremeter

testing in the local soils. The limit pressures at D-4 were, in fact, estimated by comparison with those at cone probe A-1 and then the pressuremeter moduli estimated from them.

Since the proposed building will be constructed in two phases beginning with a 6 story structure with 4 added stories at some future time, two estimates of settlements have been given in the report. The first after constructing 6 stories and the second after the building is completed. The net added load along the eastern edge of the mat with 6 stories in place is quite small. The estimated settlements for the eastern and western edges of the mat are the same.

In order to account for the net added load over the eastern portion of the mat with the final four stories in place I have used pressuremeter methods to predict the settlement of an elongated area of about 75 feet by the full building length. (the strip along the eastern half of the building that will have a net loading). The center settlement of this area with an average of 300 psf on it is estimated at about 3/8 inch. At the very eastern edge of this strip the settlement is estimated at 1/4 inch. This has been added to ½ the mat center settlement to predict a settlement along the eastern edge of the mat for the final or total load with ten stories in place.

I have estimated that the settlements of the corners of the mat will be approximately 1/3 to 1/4 of the center of the mat. These proportions along with the one used for the relationship between center and edge settlements will depend on the stiffness of the structure as well as the soils and variations in the loading.

I used information from two other projects done locally in evaluating the results of my settlement analysis. One was a report prepared in 1946 by Gregory Tschebotarioff for a NYS project near State, Swan, and Hawk Streets. A pdf of that report is available from the owners. A second project which I worked on just south of New Scotland Avenue and across from the Albany Medical Center was the NYS Heath Lab project or Axelrod Center.

The relevant information from the nearby NYS Health Lab project is as follows:

Approximately 5/8 inch of center rebound was measured with Sondex settlement gauges in the center of a basement excavation which was about 13 to 14 feet deep at a site across New Scotland Avenue from Albany Medical Center. This site had similar soils. The size of the building pad was about 146 ft. X 91 ft. or about ½ the size of the current design footprint. The construction of the six story (partial 7th) building resulted in only the recovery of this rebound with the exception that in the partial

seventh story area there was somewhat less than 0.01 feet of settlement beyond rebound recovery. Elastic theory would predict twice the rebound that was actually measured on this site.

In his 1946 report for building construction at State Street and Swan Street in Albany on similar soils Gregory Tschebotarioff recommended two coefficients of volume change (mv)based on observed settlements at the Telephone Building and at the State Office Building. The mv coefficient of a soil can be viewed as the reciprocal of the constrained modulus which is the modulus that can be calculated from a laboratory consolidation test. The first of these calculated mv using the total building load without reducing the load for excavation and the second calculated mv using the net loading. These values he recommended and used for his project at the State St., Hawk St., and Swan St. Complex were mv = 0.00273/tsf (full structural load with no load compensation considered) and mv = 0.0074/tsf (using net load). He noted that the higher value of these corresponded closely to first run laboratory test values on somewhat disturbed and “unflooded” samples and on settlements at the State Office Building where there was more disturbance due to some shearing from high loads and larger settlements. The lower mv value he indicates might be representative of local subgrades relatively undisturbed or less disturbed by excavation (field values)and the second run of consolidation tests (reload tests).

I have shown the estimated settlement values for the current site center settlement using Tchebotarioff mv values for the case where no load relief was applied below:

Settlements (inches)

Column load (kips)	Mat Pressure (Tsf)	mv* (/tsf)	Settlement(in.)
Phase I(6 stories)			
615 (DL+50%LL)	0.6225	0.00273	2.45
Phase II (Add 4 stories)			
395 (DL_50%LL)	0.255	0.00273	1.00

Phase II (10 stories)

1010 (50%LL)	0.8775	0.00273	3.45

*Gregory Tchebotarioff coefficient of volume compressibility ignoring load relief due to excavation (August 22, 1946). His study was done on nearby Albany buildings with similar soils. He based his mv values on the actual measured settlements along with the boring data showing the depth of compressible clays.

These are center of foundation settlements with edge settlements estimated at about 1.75 inches.

The estimated total settlement using the Tchebotarioff mv value is very close to the total rebound/settlement which I have estimated using pressuremeter moduli. Settlements in these clays are also affected by subgrade disturbance and the time between excavation and building construction. It is my opinion that using good procedures such as pre-drainage and careful excavation with modern equipment and faster construction the measured settlements could be less than those predicted above using the Tschebotarioff mv value and less than the values that I have predicted in the report text.

Since the eventual building settlements are so closely tied with time and disturbance issues, I have recommended that at least three deep settlement gauges be installed to determine the amount of subgrade heave which is actually occurring during excavation and foundation construction. If the rebound values are less than expected, the settlement values will be less than predicted. Some use could be made of improved settlement values in progress.

Appendix 10

Vane Shear Testing:

Fourteen (14) vane shear tests were conducted in borings B-2(ET2008) and B-3(ET2008). These test results provide an estimate of the undrained shear strength values of the cohesive soils in-situ. The vane used (SMT vane) has a diameter of 3 1/8 inch; a height of 7 1/4 inch and a blade thickness of 1/8 inch. This last is slightly thicker than typical standard vane shear blades. The shearing was done with a torque wrench so that the rate of shearing was not strictly controlled. The vane shear values are given on the logs in psf units. The remolded test values were measured after 5 minutes or more from the time of measuring the peak shear values.

Four (4) vane shear tests were conducted in borings B-2A(ET2008) and B-3A(ET2008) using an Acker Drill Vane. The Acker vane itself is of similar dimensions and a thinner blade thickness of 1/16 inch. This vane is 9 inches long; 3 5/8 inches in diameter with tapered top and bottom (rather than being a rectangular vane). In addition to the different vane shape the apparatus which turns the vane allows a slow and steady application of the torque to the vane. The rate of strain used was 0.1 degrees per second.

The force gauge was read at 5 degree intervals and the maximum corresponding torque recorded as well as the remolded torque after a 5 minute rest. The maximum and remolded torque values are shown on the logs.

The four Acker Drill vane tests were focused on a stratum of soft or loose silty clay and silt layers encountered at the B-2, B2A, B-3, and B-3A locations near the proposed dredge line. This was done to determine the effect of a slower strain rate on the results compared to those recorded with a torque wrench. A comparison of the results indicates that sharply lower vane shear values were obtained with the slow strain and loading rate.

The installation of steel casing to 1.5 feet above the test depth may have resulted in some disturbance at the test level compared to those done with a hollow-stem auger system. The test at 22.5 ft. deep at B-3A was done by pushing the vane down an additional foot without advancing the boring. The resulting vane strength was twice that one foot above. However, the soils are layered and this could be a soil difference as well. The very much slower loading rate could also allow more disturbance over

testing time for upward seepage toward the bottom of the boring in spite of the use of a bentonite slurry.

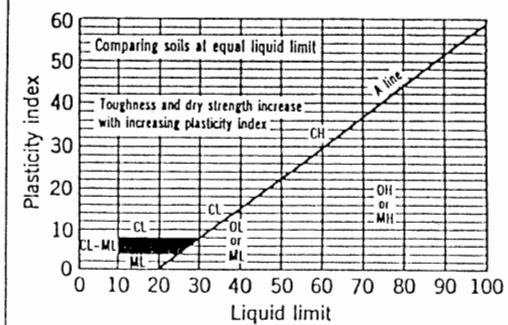
One SMT vane test was also done in boring B-2A(ET2008). The result was similar to those done in the adjacent boring B-2(ET2008).

The results of vane shear testing done in 2004 are shown on the logs of those borings. These tests were done with the SMT vane usng a torque wrench.

In summary the vane shear testing results from the current site generally agree with undrained field and laboratory test results done elsewhere in similar soils. It is clear, though, that the loose silt deposit (MH soils) found on the current site near the dredge line is unusually sensitive to loading rate and to disturbance. It does not have reliable cohesive strength.

Table 3.5 Unified Soil Classification

Field Identification Procedures (Excluding particles larger than 3 in. and basing fractions on estimated weights)				Group Symbols [a]	Typical Names	Information Required for Describing Soils	Laboratory Classification Criteria	
Coarse-grained soils More than half of material is *larger* than No. 200 sieve size[b] (The No. 200 sieve size is about the smallest particle visible to naked eye)								
Gravels More than half of coarse fraction is larger than No. 4 sieve size (For visual classification, the ¼ in. size may be used as equivalent to the No. 4 sieve size)	Clean gravels (little or no fines)	Wide range in grain size and substantial amounts of all intermediate particle sizes		*GW*	Well graded gravels, gravel-sand mixtures, little or no fines	Give typical name; indicate approximate percentages of sand and gravel; maximum size; angularity, surface condition, and hardness of the coarse grains; local or geologic name and other pertinent descriptive information; and symbols in parentheses For undisturbed soils add information on stratification, degree of compactness, cementation, moisture conditions and drainage characteristics Example: *Silty sand*, gravelly; about 20% hard, angular gravel particles ½-in. maximum size; rounded and subangular sand grains coarse to fine, about 15% nonplastic fines with low dry strength; well compacted and moist in place; alluvial sand; (*SM*)	Determine percentages of gravel and sand from grain size curve 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	$C_U = \frac{D_{60}}{D_{10}}$ Greater than 4 $C_C = \frac{(D_{30})^2}{D_{10} \times D_{60}}$ Between 1 and 3
		Predominantly one size or a range of sizes with some intermediate sizes missing		*GP*	Poorly graded gravels, gravel-sand mixtures, little or no fines			Not meeting all gradation requirements for *GW*
	Gravels with fines (appreciable amount of fines)	Nonplastic fines (for identification procedures see *ML* below)		*GM*	Silty gravels, poorly graded gravel-sand-silt mixtures		Atterberg limits below "A" line, or *PI* less than 4	Above "A" line with *PI* between 4 and 7 are *borderline* cases requiring use of dual symbols
		Plastic fines (for identification procedures, see *CL* below)		*GC*	Clayey gravels, poorly graded gravel-sand-clay mixtures		Atterberg limits above "A" line, with *PI* greater than 7	
Sands More than half of coarse fraction is smaller than No. 4 sieve size	Clean sands (little or no fines)	Wide range in grain sizes and substantial amounts of all intermediate particle sizes		*SW*	Well graded sands, gravelly sands, little or no fines		$C_U = \frac{D_{60}}{D_{10}}$ Greater than 6 $C_C = \frac{(D_{30})^2}{D_{10} \times D_{60}}$ Between 1 and 3	
		Predominantly one size or a range of sizes with some intermediate sizes missing		*SP*	Poorly graded sands, gravelly sands, little or no fines			Not meeting all gradation requirements for *SW*
	Sands with fines (appreciable amount of fines)	Nonplastic fines (for identification procedures, see *ML* below)		*SM*	Silty sands, poorly graded sand-silt mixtures		Atterberg limits below "A" line or *PI* less than 5	Above "A" line with *PI* between 4 and 7 are *borderline* cases requiring use of dual symbols
		Plastic fines (for identification procedures, see *CL* below)		*SC*	Clayey sands, poorly graded sand-clay mixtures		Atterberg limits below "A" line with *PI* greater than 7	
Fine-grained soils More than half of material is *smaller* than No. 200 sieve size (The No. 200 sieve size is about the smallest particle visible to naked eye)								
Identification Procedures on Fraction Smaller than No. 40 Sieve Size								
		Dry Strength (crushing characteristics)	Dilatancy (reaction to shaking)	Toughness (consistency near plastic limit)				
Silts and clays liquid limit less than 50		None to slight	Quick to slow	None	*ML*	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands with slight plasticity	Give typical name; indicate degree and character of plasticity, amount and maximum size of coarse grains; colour in wet condition, odour if any, local or geologic name, and other pertinent descriptive information, and symbol in parentheses For undisturbed soils add information on structure, stratification, consistency in undisturbed and remoulded states, moisture and drainage conditions Example: *Clayey silt*, brown; slightly plastic; small percentage of fine sand; numerous vertical root holes; firm and dry in place; loess; (*ML*)	Use grain size curve in identifying the fractions as given under field identification
		Medium to high	None to very slow	Medium	*CL*	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays		
		Slight to medium	Slow	Slight	*OL*	Organic silts and organic silt-clays of low plasticity		
Silts and clays liquid limit greater than 50		Slight to medium	Slow to none	Slight to medium	*MH*	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts		
		High to very high	None	High	*CH*	Inorganic clays of high plasticity, fat clays		
		Medium to high	None to very slow	Slight to medium	*OH*	Organic clays of medium to high plasticity		
Highly Organic Soils		Readily identified by colour, odour, spongy feel and frequently by fibrous texture			*Pt*	Peat and other highly organic soils		



Plasticity chart for laboratory classification of fine grained soils

From Wagner, 1957.

[a] *Boundary classifications*. Soils possessing characteristics of two groups are designated by combinations of group symbols. For example *GW–GC*, well graded gravel-sand mixture with clay binder.

[b] All sieve sizes on this chart are U.S. standard.

Field Identification Procedure for Fine Grained Soils or Fractions

These procedures are to be performed on the minus No. 40 sieve size particles, approximately 1/64 in. For field classification purposes, screening is not intended, simply remove by hand the coarse particles that interfere with the tests.

Dilatancy (Reaction to shaking):

After removing particles larger than No. 40 sieve size, prepare a pat of moist soil with a volume of about one-half cubic inch. Add enough water if necessary to make the soil soft but not sticky.

Place the pat in the open palm of one hand and shake horizontally, striking vigorously against the other hand several times. A positive reaction consists of the appearance of water on the surface of the pat which changes to a livery consistency and becomes glossy. When the sample is squeezed between the fingers, the water and gloss disappear from the surface, the pat stiffens and finally it cracks or crumbles. The rapidity of appearance of water during shaking and of its disappearance during squeezing assist in identifying the character of the fines in a soil.

Very fine clean sands give the quickest and most distinct reaction whereas a plastic clay has no reaction. Inorganic silts, such as a typical rock flour, show a moderately quick reaction.

Dry Strength (Crushing characteristics):

After removing particles larger than No. 40 sieve size, mould a pat of soil to the consistency of putty, adding water if necessary. Allow the pat to dry completely by oven, sun or air drying, and then test its strength by breaking and crumbling between the fingers. This strength is a measure of the character and quantity of the colloidal fraction contained in the soil. The dry strength increases with increasing plasticity.

High dry strength is characteristic for clays of the CH group. A typical inorganic silt possesses only very slight dry strength. Silty fine sands and silts have about the same slight dry strength, but can be distinguished by the feel when powdering the dried specimen. Fine sand feels gritty whereas a typical silt has the smooth feel of flour.

Toughness (Consistency near plastic limit):

After removing particles larger than the No. 40 sieve size, a specimen of soil about one-half inch cube in size, is moulded to the consistency of putty. If too dry, water must be added and if sticky, the specimen should be spread out in a thin layer and allowed to lose some moisture by evaporation. Then the specimen is rolled out by hand on a smooth surface or between the palms into a thread about one-eight inch in diameter. The thread is then folded and re-rolled repeatedly. During this manipulation the moisture content is gradually reduced and the specimen stiffens, finally loses its plasticity, and crumbles when the plastic limit is reached.

After the thread crumbles, the pieces should be lumped together and a slight kneading action continued until the lump crumbles.

The tougher the thread near the plastic limit and the stiffer the lump when it finally crumbles, the more potent is the colloidal clay fraction in the soil. Weakness of the thread at the plastic limit and quick loss of coherence of the lump below the plastic limit indicate either inorganic clay of low plasticity, or materials such as kaolin-type clays and organic clays which occur below the A-line.

Highly organic clays have a very weak and spongy feel at the plastic limit.

Soil Characteristics Pertinent to Roads and Airfields

Major Divisions		Letter (1)	Name	Value as Subgrade When Not Subject to Frost Action	Value as Subbase When Not Subject to Frost Action	Value as Base When Not Subject to Frost Action	Potential Frost Action	Compressibility and Expansion	Drainage Characteristics	Compaction Equipment	Unit Dry Weight lb. per cu. ft.	Typical Design Values	
												CBR (2)	Subgrade Modulus k lb. per cu. in.
Coarse-Grained Soils	Gravel and Gravelly Soils	GW	Well-graded gravels or gravel-sand mixtures, little or no fines	Excellent	Excellent	Good	None to very slight	Almost none	Excellent	Crawler-type tractor, rubber-tired roller, steel-wheeled roller	125-140	40-80	300-500
		GP	Poorly graded gravels or gravel-sand mixtures, little or no fines	Good to excellent	Good	Fair to good	None to very slight	Almost none	Excellent	Crawler-type tractor, rubber-tired roller, steel-wheeled roller	110-140	30-60	300-500
		GM d	Silty gravels, gravel-sand-silt mixtures	Good to excellent	Good	Fair to good	Slight to medium	Very slight	Fair to poor	Rubber-tired roller, sheepsfoot roller; close control of moisture	125-145	40-60	300-500
		GM u		Good	Fair	Poor to not suitable	Slight to medium	Slight	Poor to practically impervious	Rubber-tired roller, sheepsfoot roller	115-135	20-30	200-500
		GC	Clayey gravels, gravel-sand-clay mixtures	Good	Fair	Poor to not suitable	Slight to medium	Slight	Poor to practically impervious	Rubber-tired roller, sheepsfoot roller	130-145	20-40	200-500
	Sand and Sandy Soils	SW	Well-graded sands or gravelly sands, little or no fines	Good	Fair to good	Poor	None to very slight	Almost none	Excellent	Crawler-type tractor, rubber-tired roller	110-130	20-40	200-400
		SP	Poorly graded sands or gravelly sands, little or no fines	Fair to good	Fair	Poor to not suitable	None to very slight	Almost none	Excellent	Crawler-type tractor, rubber-tired roller	105-135	10-40	150-400
		SM d	Silty sands, sand-silt mixtures	Fair to good	Fair to good	Poor	Slight to high	Very slight	Fair to poor	Rubber-tired roller, sheepsfoot roller; close control of moisture	120-135	15-40	150-400
		SM u		Fair	Poor to fair	Not suitable	Slight to high	Slight to medium	Poor to practically impervious	Rubber-tired roller, sheepsfoot roller	100-130	10-20	100-300
		SC	Clayey sands, sand-clay mixtures	Poor to fair	Poor	Not suitable	Slight to high	Slight to medium	Poor to practically impervious	Rubber-tired roller, sheepsfoot roller	100-135	5-20	100-300
Fine-Grained Soils	Silts and Clays LL is less than 50	ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity	Poor to fair	Not suitable	Not suitable	Medium to very high	Slight to medium	Fair to poor	Rubber-tired roller, sheepsfoot roller; close control of moisture	90-130	15 or less	100-200
		CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays	Poor to fair	Not suitable	Not suitable	Medium to high	Medium	Practically impervious	Rubber-tired roller, sheepsfoot roller	90-130	15 or less	50-150
		OL	Organic silts and organic silt-clays of low plasticity	Poor	Not suitable	Not suitable	Medium to high	Medium to high	Poor	Rubber-tired roller, sheepsfoot roller	90-105	5 or less	50-100
	Silts and Clays LL is Greater than 50	MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts	Poor	Not suitable	Not suitable	Medium to very high	High	Fair to poor	Sheepsfoot roller, rubber-tired roller	80-105	10 or less	50-100
		CH	Inorganic clays of medium to high plasticity, organic silts	Poor to fair	Not suitable	Not suitable	Medium	High	Practically impervious	Sheepsfoot roller, rubber-tired roller	90-115	15 or less	50-150
		OH	Organic clays of high plasticity, fat clays	Poor to very poor	Not suitable	Not suitable	Medium	High	Practically impervious	Sheepsfoot roller, rubber-tired roller	80-110	5 or less	25-100
Highly Organic Soils		Pt	Peat and other highly organic soils	Not suitable	Not suitable	Not suitable	Slight	Very high	Fair to poor	Compaction not practical	—	—	—

Note:

(1) Unit Dry Weights are for compacted soil at optimum moisture content for modified AASHO compaction effort. Division of GM and SM groups into subdivision of d and u are for roads and airfields only. Subdivision is basis of Atterberg limits; suffix d (e.g., GMd) will be used when the liquid limit (LL) is 25 or less and the plasticity index is 6 or less; the suffix u will be used otherwise.

(2) The maximum value that can be used in design of airfields is, in some cases, limited by gradation and plasticity requirements.

GENERAL QUALIFICATIONS

This report has been prepared in order to aid in the evaluation of this property and to assist the architect and/or engineer in the design of this project. The scope of the project and the location described herein, and our description of the project represents our understanding of the significant aspects relevant to soil and foundation characteristics. In the event that any changes in the design or location of the proposed facilities, as outlined in this report, are planned, we should be informed so the changes can be reviewed and the conclusions of this report modified or approved in writing by ourselves.

It is recommended that all construction operations dealing with earthwork and foundations be inspected by an experienced soil engineer to assure that design requirements are fulfilled in the actual construction. If you wish, we would welcome the opportunity to review the plans and specifications when they have been prepared so that we may have the opportunity of commenting on the effect of soil conditions on the design and specifications.

The analysis and recommendations submitted in this report are based upon the data obtained from the soil borings and/or test pits performed at the locations indicated on the location diagram and from any other information discussed in this report. This report does not reflect any variations which may occur between these borings and/or test pits. In the performance of subsurface investigations, specific information is obtained at specific locations at specific times. However, it is a well-known fact that variations in soil and rock conditions exist on most sites between boring locations and also such situations as groundwater conditions vary from time to time. The nature and extent of variations may not become evident until the course of construction. If variations then appear evident, it will be necessary for a reevaluation of the recommendations of this report after performing on-site observations during the construction period and noting the characteristics of any variations.