SUBSURFACE EXPLORATION AND GEOTECHNICAL ANALYSIS

Proposed Brighton Park II Elementary School
2611 West 48th Street
Chicago, Illinois

Prepared for

Public Building Commission of Chicago
Richard J. Daley Center, 2nd Floor
50 W. Washington Street, Room 200
Chicago, IL 60602

April 30, 2009

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EXECUTIVE SUMMARY

This report presents the result of the subsurface exploration, laboratory testing, geotechnical analysis and evaluation, and foundation recommendations for the proposed Brighton Park II Elementary School located at 2611 West 48th Street, Chicago Illinois. The site was previously occupied by multiple structures that have been demolished as part of this project. The site is currently an empty lot, with demolition debris covering most of the surface. The proposed school will be positioned in the northeast corner of the site, and will occupy a majority of the property. The site improvements will include a parking lot and landscaping.

The subsurface investigation included advancing twenty (20) soil borings at the site. Ten (10) of the borings were performed within the proposed building footprint and the remaining ten (10) borings were performed in the proposed parking and landscape areas surrounding the building. For the borings within the building footprint, four (4) were drilled to a depth of 45 feet below the existing ground surface and six (6) were drilled to 20 feet. The borings outside of the building footprint were all performed to a depth of ten (10) feet below the existing ground surface. Soil samples were obtained at 2.5 ft. intervals to a depth of 20 feet below grade, and at 5 ft. intervals thereafter.

No topsoil was encountered in any of the borings. The surface materials consisted of fill materials extending to depths of approximately 1.5 to 10 feet below the existing grade. Beneath the fill was a layer of medium stiff to hard silty clay that extended to the termination of the shallow borings, and to a depth of approximately 38 feet in the deeper borings. Layers of sand and silt were encountered in this clay layer in some of the borings, and were typically 0.5 to 4 feet in thickness. The silty clay layer was underlain by a hard silt layer that extended to the end of the borings. Water was encountered in several of the borings between 3.5 and 13 feet below the existing ground surface. The water encountered appears to be perched, and it is assumed that the long term water table will be approximately 8 to 10 feet below the surface.

It is our understanding that the proposed exterior grades will be approximately equal to the existing grading on the site. The proposed elementary school will consist of a three-story building with a steel frame and masonry exterior. The school will not have a basement but will include an elevator pit.

Based on the results of the site investigation and the anticipated building loads, the proposed structure could be supported upon conventional shallow spread and continuous footings. The footings shall be placed upon the very stiff to hard, silty clay layer, which was encountered

beneath the fill materials. The footing should be designed for a maximum net allowable bearing capacity of 4,000 pounds per square feet (psf). The minimum depth of the conventional footings should be 3½ feet below the final exterior grade to alleviate the effects of frost. All fill materials, organic root mats, and localized loose sand should be over-excavated and backfilled to the proposed foundation elevation using granular structural fill. The structural fill should consist of granular fill such as crushed limestone meeting IDOT CA-6 gradation requirements.

The concrete slab-on-grade should be supported upon a minimum of 12 inches of compacted granular fill. Pavement sections should be supported upon a minimum of 8 inches of compacted granular fill. The fill materials containing organic and deleterious materials should be over-excavated, and replaced with approved structural fill. The exposed subgrade should be proof-rolled using a fully loaded tandem axle dump truck or similar rubber tire vehicle weighing at least 25 tons prior to placing any granular fill or base course. Areas showing excessive deflection should be investigated to determine the extent of the unstable material. This unstable material should be removed and replaced with suitable structural fill. The fill should be placed in 8 inches thickness loose lifts and should be compacted to a minimum of 95% of the materials standard maximum dry density (ASTM D-1557).

GSG also recommends that subgrade preparation and structural fill placement and compaction be inspected by GSG to verify that construction work is being completed in conformance with the recommendations outlined in this report.

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1.0 INTRODUCTION

On behalf of the Public Building Commission of Chicago, Architrave, Ltd. retained GSG Consultants, Inc (GSG) to perform a subsurface exploration and geotechnical analysis, and to provide recommendations regarding foundation system for the proposed Brighton Park II Elementary School project. The site is located at 2611 West 48th Street, Chicago, Illinois (see the **Site Location Plan – Exhibit 1**).

1.1 Project Information

Information on the proposed elementary school was obtained from Architrave (Architect of Record) as well as McDonough Associates Inc.(Structural Engineer). The site was previously occupied by multiple structures at have been demolished as part of this project. The site is currently an empty lot, with demolition debris covering most of the surface. It is our understanding that the demolished buildings did not have basements, and that the foundation elements will be completely removed during site demolition activities. The proposed school will be positioned in the northeast corner of the site, and will occupy a majority of the property. The site improvements will include a parking lot and landscaping.

It is our understanding that the proposed exterior grades will be approximately equal to the existing grading on the site. The proposed elementary school will consist of a three-story building with a steel frame and masonry exterior. The school will not have a basement but will include an elevator pit. The maximum anticipated internal column load is 528 kips and the maximum anticipated exterior column load is 286 kips.

1.2 Purpose and Scope of Services

The objective of this study was to explore and characterize the subsurface soil conditions in order to provide recommendations regarding the type and depth of foundations to be used to support the proposed structure on the site. The scope of this study includes the following:

1. Perform site reconnaissance and advance 20 soil borings to depths between 10 and 45 feet below the existing ground surface elevation.
2. Perform infiltration testing at two locations to evaluate soil permeability.
3. Perform the geotechnical laboratory testing program on selected representative soil samples obtained during the field investigation to evaluate relevant engineering parameters of the subsurface soils.
4. Perform engineering analysis and evaluation of the data collected during the field study investigation and laboratory testing.
5. Provide recommendations for foundation design parameters and associated construction activities.

2.0 FIELD INVESTIGATION

2.1 Field Investigation Methodology

The subsurface soil investigation was conducted from March 31st through the 3rd, 2009, and included the performing a total of 20 soil borings. Ten (10) of the borings were performed within the proposed building footprint and the remaining ten (10) borings were performed in the proposed parking and landscape areas surrounding the building. For the borings within the building footprint, four (4) were drilled to a depth of 45 feet below the existing ground surface and six (6) were drilled to 20 feet. The borings outside of the building footprint were all performed to a depth of ten (10) feet below the existing ground surface. The soil boring locations were performed in general accordance with the exhibit by McDonough Associates Inc. The **Soil Boring Location Plan (Exhibit 2)** shows the proposed building layout and the location of the soil borings completed at the site. The soil borings were drilled using a Diedrich D-50 truck-mounted drill rig using 3¼-inch I.D. hollow-stem augers to advance the borehole. GSG performed the field exploration activities using standard penetration test procedures in accordance with the ASTM D1586-99, "Penetration Test and Split-barrel Sampling of Soil". Water level measurements were also made in each boring when evidence of free groundwater was detected on the drill rods or in the sample. The borehole was also checked for free water immediately after auger removal and before filling the open boreholes with soil cuttings.

2.2 Sampling Procedures

Representative soil samples were obtained from each boring at 2.5 ft. intervals to a depth of 10 feet and at 5 ft. intervals thereafter using the standard penetration test and Shelby Tube sampling procedures. In the standard penetration test procedure, a 2 inch O.D. split-spoon sampler is driven 18 inches into undisturbed soil using a 30 inch drop of a 140 pound hammer. The number of hammer drops (Blow Counts) is recorded at six 6" intervals for each sample collected. The number of blows to advance the sampler 12 inches is called the standard penetration test (SPT) values. The SPT values are shown on the boring logs. GSG also collected two samples using 3-inch thin tube (Shelby Tube) for laboratory testing. In the thin-walled tube sampling, a 3" diameter thin-walled tube with a length of 2 feet, is pushed into the undisturbed soil to a using the weight and hydraulic pressure of the drill.

GSG's field representative visually classified the soils according to the Unified Soil Classification System (ASTM 2487), performed pocket penetrometer tests on all cohesive soil samples to estimate their unconfined compressive strength, and obtained relatively undisturbed bulk samples of the subsurface soil for laboratory testing. The results of the pocket penetrometer test are shown on the boring logs.

Soil samples obtained using the standard penetration test, were placed in 4 inch geotechnical glass jars to reduce moisture loss and disturbance. The samples obtained from the Shelby Tube sampling were left in the tube and capped to reduce moisture loss and disturbance. After the borings were completed, they were backfilled with the drill cuttings.

2.3 Subsurface Soil Conditions

In the 20 soil borings drilled, no topsoil was encountered in any of the borings. The surface materials consisted of existing fill materials extending to depths of approximately 1.5 to 10 feet below the existing grade. The fill materials typically consisted of a mix of silty clay, sand, gravel, organics, and brick fragments. Due to the high variability of materials located within the fill, it is likely that other debris is located in the fill that was not encountered by the borings or was not able to be sampled. Beneath the fill was a layer of medium stiff to hard silty clay that extended to the termination of the shallow borings, and to a depth of approximately 38 feet in the deeper borings. Layers of sand and silt were encountered in this clay layer in some of the borings, and were typically 0.5 to 4 feet in thickness. The silty clay layer was underlain by a hard silt layer that extended to the end of the borings.

Detailed descriptions of the subsurface soil profile are provided in the soil boring logs. The Soil Boring Logs **(Appendix A)** provide specific soil conditions encountered at each soil boring location. The soil boring logs include soil descriptions, stratifications, penetration resistance, elevations, location of the samples, and laboratory test data. The stratification shown on the boring logs represent the conditions only at the actual borings locations. The stratification represents the approximate boundary between subsurface materials; however, the actual transition may be gradual.

2.4 Infiltration Testing

GSG Consultants was on site April 2, 2009 to perform the infiltration testing at the subject site. Two locations were provided for testing (see **Exhibit 2 – Soil Boring Location Map**). The single-ring infiltrometer test method was used to determine the infiltration rate of the soil at the proposed design depth. The test consisted of driving a 12-inch open cylinder down to a depth of 12-inches (at the proposed elevation of the bottom of the infiltration facility), filling the ring with clean water, and then recording the water level drop over time. Water was added to the ring as needed to maintain a height of 12-inches within the cylinder. The test was performed with a sufficiently small time interval so that the total change in water level per time is less than 12

inches. The cumulative volume infiltrated during timed intervals is recorded. The test was performed over five hours until a steady state infiltration rate developed.

GSG was unable to perform infiltration test at location IT-2 due to the nature of fill materials encountered at that location. The fill materials consisted of clay, brick fragments, slag, gravel and sand. According to the City of Chicago - Stormwater Management Ordinance Manual, soil at the design depth found to consist of sand size particles or coarser requires no field-testing of infiltration rates and can be assumed to have a maximum infiltration rate of 1.4 in/hr. Therefore infiltration testing was performed only at location (IT-1). The infiltration test at location IT-1 resulted in an infiltration rate of 0.14 in/hr. The infiltration rate test results can be found in **Appendix B – Infiltration Test Results**.

2.5 Groundwater Conditions

GSG measured the groundwater levels during the drilling activities and immediately after completing the drilling activities. Groundwater was encountered in several of the borings between 3.5 and 13 feet below the existing ground surface. In our opinion, the shallow water encountered in some of the soil borings appears to be perched. The water level observations shown in the soil borings provide an indication of the groundwater conditions on the site at the time the borings were drilled. A long period of time is typically required for a water level to develop and stabilize in a predominately cohesive subsurface profile, such as encountered at the site. It appears that the long term water table had been at a depth of approximately 8 to 10 feet below the existing ground surface, based on a change in the color of the soils from brown and grey to grey. The brown color of the soils is due to oxidation which occurs above water table. In general, it should be noted that groundwater level may fluctuate based on seasonal precipitation, evaporation, surface run-off and other factors. Higher perched water level should be anticipated in the fill material after periods of rain.

2.6 Laboratory Testing

The purpose of the laboratory testing program was to classify and evaluate physical properties of the soils which may affect the geotechnical aspects of project design and construction. The laboratory testing included performing the following:

Moisture content – Moisture content was performed on all cohesive soil samples collected from the site. Tests were performed in accordance with ASTM Test Method D2216. This information is reported in the Boring Logs **(Appendix A)**.

Unconfined Compression – This is an automated digital instrument for determining the unconfined compression strength of cohesive soil specimens of diameter ranging from 38 mm to 100 mm. Load on the sample is applied gradually by an automated loading frame. The loads are measured on a sensitive proving ring attached to the load frame, and are recorded as the unconfined compressive strength of the soil (Qu value). These results are used to aid in determining the allowable bearing capacity of the soil strata. Tests were performed in accordance with ASTM Test Method D2166. This information is reported in the Boring Logs **(Appendix A)**.

Atterberg Limits – Atterberg limits tests were performed on cohesive fill soil samples to evaluate the plasticity characteristics of the material at the site. The Atterberg Limits are the moisture contents which define the various stages of soil consistency. The Liquid Limit is the moisture content at which a particular soil behaves as a viscous liquid, and the Plastic Limit is the moisture content at which a soil begins to break apart and crumble and is no longer plastic. The difference between the liquid and plastic limits is the Plasticity Index, which represents the range in water content in which the soil is in a plastic state. Atterberg Limits tests were performed in accordance with ASTM Test Method D 4318. The following table presents a summary of the Atterberg Limits:

Boring(s)	Soil Description	Depth (ft)	Lab Results Atterberg Limits	
			LL	PI
Borings SB-4 and SB-9	Silty Clay, Trace Sand and Gravel (CL) - Brown	3.5-5	40.4	20.4
Borings B-1,B-4 and B-9	Silty Clay, Trace Sand and Gravel (CL) - Gray	8.5-15	34.5	16.8
Boring SB-10	Silty Clay, Trace Sand and Gravel (CL) - Brown	3.5-5	42.7	21.8

Grain Size Analysis – A grain size analysis was performed on a sample of fill taken from the infiltration test IT-2 collected from the site. Tests were performed in accordance with ASTM Test Method D422. These results are reported in the **Appendix C – Laboratory Test Data.**

Organic Content- Organic content was performed on 15 samples of selected fill materials that were collected from the site. Two (2) samples were a composite of soil samples taken within the proposed building footprint and proposed parking lot area, respectively. In an effort to address the thickness of organic materials suspected, additional testing was performed on nine (9) samples collected at a sample depth of 1 to 2 feet and four (4) sample were collected from a depth of 3 to 4 feet from borings proportionately spaced across the proposed building footprint. Tests were performed in accordance with ASTM Test Method D2974. The results of the tests are summarized in the following chart:

Description	Boring	Depth (feet)	Organic Content (Percent)
FILL: Clay, Brick Fragments, Slag, Gravel and Sand	Composite	0-1	11.6
FILL: Clay, Brick Fragments, Slag, Gravel and Sand	Composite	0-1	1.4
FILL: Clay, Brick Fragments, Slag, Gravel and Sand	OC-1A	1-2	4.7
FILL: Clay, Brick Fragments, Slag, Gravel and Sand	OC-2A	1-2	3.9
FILL: Clay, Brick Fragments, Slag, Gravel and Sand	OC-3A	1-2	3.2
FILL: Clay, Brick Fragments, Slag, Gravel and Sand	OC-4A	1-2	3.1
FILL: Clay, Brick Fragments, Slag, Gravel and Sand	OC-5A	1-2	3.4
FILL: Clay, Brick Fragments, Slag, Gravel and Sand	OC-6A	1-2	5.3
FILL: Clay, Brick Fragments, Slag, Gravel and Sand	OC-7A	1-2	5.8
FILL: Clay, Brick Fragments, Slag, Gravel and Sand	OC-8A	1-2	8.3
FILL: Clay, Brick Fragments, Slag, Gravel and Sand	OC-9A	1-2	1.0
FILL: Clay, Brick Fragments, Slag, Gravel and Sand	OC-6B	3-4	5.9
FILL: Clay, Brick Fragments, Slag, Gravel and Sand	OC-7B	3-4	4.1
FILL: Clay, Brick Fragments, Slag, Gravel and Sand	OC-8B	3-4	8.3
FILL: Clay, Brick Fragments, Slag, Gravel and Sand	OC-9B	3-4	7.2

Standard Proctor – A Standard Proctor test was performed on the fill samples to determine the materials dry unit weight and optimum moisture content, and their suitability for use as backfill materials during construction activities at the site. Tests were performed in accordance with ASTM Test Method D698. The standard proctor value for the clay fill was 110 pcf. **Appendix C – Laboratory Test Data** presents the results of the standard proctor test.

3.0 Geotechnical Analysis and Recommendations

This section presents GSG's geotechnical engineering analysis and foundation recommendations for the proposed improvements. GSG performed the geotechnical engineering analysis based on the results of the field exploration, field observations, laboratory testing program, and design information provided by Architrave and McDonough Associates Inc. The maximum anticipated internal column load is 528 kips and the maximum anticipated exterior column load is 286 kips.

3.1 Foundation Analysis and Design

The type of foundation utilized for a structure is normally dependent upon soil type, soil consistency, magnitude of loads, and anticipated settlement based on the selected foundation system. The subsurface soil profile consisted of fill materials typically extending from the surface to depths ranging from 1.5 to 5 feet, except at B-4 where the fill materials extended to a depth of 10 feet, below existing surface. In general, the fill materials are considered to be weak and compressible under load and should be removed from under all foundations. The proposed building footing should not be supported upon uncontrolled/non-engineered fill or unsuitable native clay soils since it may experience excessive settlement.

The proposed building could be supported upon a conventional shallow spread and continuous footings, designed using an allowable bearing capacity of 4,000 psf. The footings should be placed upon the natural very stiff to hard, silty clay which was typically encountered below the fill materials at depths ranging from 2 to 7 feet below the existing ground surface, except in the vicinity of soil boring B-4 where the fill materials extended to a depth of 10 feet, and in the vicinity of soil borings B-3, B-5, and B-7 where medium stiff to stiff clay was encountered at depths ranging between 4 and 10 feet. These material should be removed from beneath the footings and replaced with structural fill. The minimum depth of the conventional footings should be 3½ feet below the final exterior grade to alleviate the effects of frost. Spread footings should have a minimum plan dimension of 4 feet and should be at least 12 inches thick. Strip footings should have a minimum width of 2 feet and be at least 10 inches thick. The actual footing thickness and reinforcement should be determined by a structural analysis of the individual footings with chosen plan dimensions. If water seepage is encountered at the spread and wall footings, all water should be removed prior to the placement of concrete.

All localized deep fill soils and soft to stiff native clay soils should be over-excavated and replaced with structural fill. Suitable structural fill consisting of approved granular materials, such as crushed aggregate meeting IDOT CA-6 gradation requirements, should be used to backfill to the proposed footing grade elevation. The lateral limit of engineered fill placed

beneath the footing should extend a minimum 1 foot beyond the outside edges of the footing, and from that point outward laterally 1 foot for every 2 feet of fill thickness below the footing. If water seepage occurs during footing excavation or where wet conditions are encountered, GSG recommends placing open grade stone similar to IDOT CA-7 gradation to stabilize the bottom of the excavation. The CA-7 stone should be placed in 12-inch lifts and densified to the extent practical using a heavy smooth drum roller or heavy vibratory plate compactor. The remaining portion of the excavation should be backfilled using approved structural fill. Suitable structural fill consisting of approved granular materials such as IDOT CA-6 should be used to backfill beneath the footing above the water table. The structural fill should be placed in 8-inch thickness lifts and compacted to 95% of the material maximum dry density (Modified Proctor ASTM D-1557). If the above recommendation is followed, the estimated total settlement of the footing will be in the magnitude of less than ¾ inch, and the differential settlement will be in the magnitude of less than ½ inch.

3.2 Lateral Load Resistance

Resistance to lateral loads can be provided by a combination of friction at the foundation base and slab-on-grade, and by passive resistance acting against the vertical faces of foundation elements. A coefficient of friction of 0.30 may be used for footings. For the floor slab, a coefficient of friction of 0.30 may be used between the floor slab and subgrade if no vapor barrier is used. This value should be reduced to 0.20 if vapor barrier is utilized. For passive resistance, an equivalent fluid pressure of 250 pounds per cubic foot (pcf) acting against the footing may be used. Passive resistance in the upper one foot of soil should be neglected unless the area is covered by concrete or pavement. The friction and passive resistance may be used concurrently provided the passive resistance is reduced by 50%.

3.3 Floor Slab Recommendation

Floor slabs-on-grade should be structurally independent of the rest of the foundation system. Slab thickness and reinforcing should be determined based on the anticipated use and loading. Prior to constructing concrete slab-on-grade, the subgrade should be prepared in accordance with the Construction Considerations section of this report. The concrete floor slab should be supported on a 12 inch, compacted, structural fill base course, consisting of 8 inches of CA-6 stone covered by 4 inches of free draining stone such as CA-7. The CA-7 stone will act as a capillary cutoff layer and may reduce the potential for soil moisture migrating upwards toward the slab, and thus will provide drainage and minimize dampness in the floor slab. The near surface fill soils within the building footprint were found to contain organic content between 1% and 11.6%. Fill soils with organic content in excess of 5% are unsuitable to remain below the concrete slabs and should be removed. Fill soils with organic content below 5% can remain

below the slab on grade some settlement can be tolerated. The building floor pad should be prepared and evaluated per the recommendations in the Constructions Considerations section of this report. The excavated area should be backfilled with CA-1, placed in 1 foot lifts and compacted until stable by using the backhoe bucket. Prior to the placement of the granular fill, the subgrade should be prepared in accordance with the procedures outlined in the Construction Consideration section of this report. Concrete slabs should be cast separately from the foundations so that minor differential movement of the foundations will not induce shear stresses and result in cracking of the floor slabs. GSG recommends placing joints and a welded wire mesh reinforcement along the floor slabs in accordance with the American Concrete Institute specifications to reduce the potential for cracking resulting from any differential settlement and shrinkage. If the recommendations provided in Construction Considerations section of this report are followed, the floor slab should be designed using a vertical subgrade reaction modulus of 100 pounds per cubic inch (pci).

3.4 Parking Lot Recommendation

GSG understand permeable pavers will be used to construct the proposed parking lot. We recommend that the permeable pavers section be supported upon a minimum of 8 inches of compacted granular fill. Based on our subsurface investigation and results of the infiltration tests in this area, the existing fill materials are permeable and may remain in place below the proposed permeable pavement areas. The subgrade should be prepared in accordance with Section 3.5, Construction Considerations.

3.5 Construction Considerations

3.5.1 Site Stripping, Grubbing and Undercuts

Site preparation should include the stripping and removal of existing vegetation, trees, top soil, root mats, unsuitable organic fill and any soft or unsuitable/deleterious materials from the proposed building and pavement areas.

Fill material with an organic content below 5% is considered suitable below the building floor slabs provided some settlement can be tolerated. Fill materials with an organic content above 10 percent is considered unsuitable below the pavement and should be removed. The organic content of the upper fill materials was found to be greater than 10 percent in the building footprint limits at one composite sample collected from 0-1 foot below existing ground surface. For the building pad, GSG recommends undercutting fill materials between building column 8.5 and 14 to a maximum depth of 4 feet or native soil based on organic testing results and subsurface soil profile. The remaining portion of the building should be undercut to a minimum

depth of 2 feet below proposed floor finished elevations. For the parking lot, GSG recommends undercutting the existing fill materials to a minimum depth of 12 inches below proposed finished ground elevations. The exposed subgrade should be prepared in accordance with Subgrade Preparation section of this report. Additional undercuts of fill materials and medium stiff to stiff clay will be required beneath some of the the footings for the proposed building. This includes soil boring B-4 where 10 feet of fill materials is present, and soil borings B-3 (depth 6-8 feet), B-5 (depth 4-5 feet), and B-7 (depth 8-10 feet) where medium stiff to stiff clay is present. These materials should be removed from beneath the proposed footings and replaced with structural fill. The soil generated from undercutting activities may be used in non-structural areas such as landscaped areas provided that the soil meets the environmental requirements of the project.

3.5.2 Existing Utilities

Based on the site survey information and GSG's field observations, abandoned utility lines and foundations may exist on site. If present within the building limits, these items must be removed and disposed of off-site as per local and state requirements. Foundation walls should be removed to a minimum depth of 2 feet below finished grade at the propose parking lot and landscape areas. Existing utility lines that are to be abandoned should be removed to the property line, and should be plugged with cement grout. All excavations resulting from removal activities should be cleaned of loose and disturbed materials including all previously-placed backfill, and backfilled with suitable fill materials in accordance with the requirements of this section.

3.5.3 Subgrade Preparation

Following site stripping and any required grubbing and/or over-excavation. GSG recommends all areas to receive engineered fill or to be used for the future support of structures, slab-on-grade and parking lot should be scarified to a minimum depth of 8 inches, moisture-conditioned to within ±2% of the optimum moisture content (as established by geotechnical laboratory testing), and compacted to 95% of the maximum dry density as determined by the modified proctor method ASTM D1557. If granular native or fill soils are encountered at the subgrade elevation, the soil should be densified/compacted using a heavy smooth drum, a vibratory plate, or jumping jack. If cohesive fill soils are encountered at the subgrade elevation, the clay should be compacted using a sheepsfoot roller.

After completing the scarification and compaction activities, the subgrade should then be proof-rolled using a loaded tandem axle dump truck or similar rubber tire vehicle weighing at least 25 tons. The purpose of the proof-rolling is to detect the presence of unsuitable or unstable soil that may exist within a few inches of the subgrade level. Areas which are observed to rut or deflect excessively under the moving load should be investigated to determine the extent of the unstable

material. The unsuitable soils should then be removed and replaced with structural fill. The structural fill should be placed in 8 inches thick loose lifts and should be compacted to a minimum of 95% of the material modified maximum dry density (ASTM D-1557).

No foundation concrete or structural fill should be placed upon wet or frozen soils. If the subgrade or structural fill for the footings, slab floor, or parking lot becomes frozen, desiccated, wet, disturbed, softened or loose prior to placement of concrete, sub-base, structural fill, or asphalt pavement; the affected materials should be scarified, dried and moisture conditioned, and compacted to the full depth of affected area or removed prior to the placement of the concrete or structural fill. Rainfall and runoff can soften soils and affect the load bearing capacity of the soils. Therefore, all water entering foundation excavation should be removed prior to placement backfill materials above the footings.

3.5.4 Wet/Unstable Subgrade Mitigation

Wet and unstable conditions could seriously delay site grading if encountered during construction activities. Typical remedial measures include discing and aerating the soils during dry weather, mixing the soils with dryer materials, removing and replacing the soils with an approved fill material, stabilization with a geotextile fabric or grid, or mixing the soils with an approved hydrating agent such as a lime or cement product. GSG should be consulted prior to implementing any remedial measure to observe the unstable subgrade condition and provide site-specific recommendations.

If construction is to proceed during the winter and spring months, one way to reduce the exposure of the pad and potential repairs is to leave the subgrade at least 1 foot above the proposed subgrade elevation, cutting it down immediately before placing the capillary break and floor slab. The cut areas should be proof-rolled in accordance with subgrade preparation section and inspected by the GSG's geotechnical engineer to identify whether undercutting of any remaining wet/unstable soils is required. Cut soils can be placed in landscape areas or disced and aerated (dried) during dry weather for placement in pavement, future pad, or other areas.

3.5.5 Floor Slab Preparation

Groundwater should not rise near surface and adversely impact the structural performance of the floor slabs. In areas where floor slabs will be covered with moisture-sensitive flooring, GSG recommends placing a capillary break consisting of at least 4 inches of free draining gravel such as IDOT CA-7 stone on the finished CA-6 stone base that, in turn, is overlain by a flexible sheet membrane that serves as a water and/or moisture vapor retarder. Care should be taken to properly place, lap and seal the membrane in accordance with manufacturer's recommendations

to provide a vapor tight barrier. Tears and punctures in the membrane should be completely repaired prior to placement of concrete. GSG recommends placing a 2-inch thick layer of relatively dry, fine-to medium-grained "clean" sand should be placed over the membrane to promote uniform curing of concrete and to protect the membrane. The moisture content of the sand should not exceed 4 percent by dry weight. If the sand becomes overly wet, it should be removed and replaced with dry sand. The capillary break should not replace in whole or in part the Subgrade Preparation recommendations discussed in Subsection 3.4.3.

3.5.6 Excavation

Building and underground utilities excavations should be performed in accordance with all applicable City of Chicago regulations. The sides of the building excavation should be sloped until a stable position is attained. Footing excavation greater than 4 feet in depth should not be sloped less than (1) vertical:(1.5) horizontal. Surcharge loads from the excavated materials, construction equipment and trucks should be included in the design of the excavation system. Excavation near existing structures, roadways, and underground utilities should be performed with extreme care to avoid undermining existing structures. Excavations should not extend below the level of adjacent existing foundations unless underpinning or other support is installed. Excavation for underground utilities should be performed in accordance with OSHA requirements and guidelines.

3.5.7 Approved Fill Material and Placement

Suitable structural fill should have the following soil properties:

1. Shall have a maximum dry density greater than 90 pounds per cubic foot (pcf) when determined in accordance with ASTM D 698, Standard Proctor.
2. Shall not contain organic material in excess of 3% when tested in accordance with ASTM D2974.
3. Suitable fine-gained soils include materials that comply with ASTM D 2487 soil classification group CL and meet the following requirements:
   a. Plasticity index greater than 20.
   b. Liquid limit less than 40.
   c. Particle size distribution with greater than 50% passing the no. 200 sieve.
4. Suitable coarse-grained soils include materials that comply with ASTM-D2487 soil classification groups GW, GP, GM, SW, SP and SC.
5. Should not contain deleterious material, have a moisture content in excess of +4% of optimum with a maximum particle size of three inches.

6. Shall consist of a locally available material. General fill is recommended in areas where fill will not support structures and for fill areas that are not exceptionally sensitive to settlement.

Materials that should be considered unsatisfactory for use as a structural fill include soils classified as silt or organic silt (ML, MH, PT, OL, and OH) in the Unified Classification System ASTM D2847. Soils with these classifications may be used for general purpose landscaping and in areas where uncontrolled settlement is acceptable. Topsoil material shall be relatively free from large roots, sticks, weeds, brush or stone larger than one (1) inch in diameter, or other waste products. It shall be a loamy mixture having at least 90% passing the no. 10 sieve.

Structural fill is recommended beneath equipment, buildings, slabs on grade and other similar structures or equipment sensitive to settlement. Suitable structural fill materials shall be of a nature that will compact and develop stability satisfactory to the geotechnical engineer. Beneath foundation, structural fill should consist of granular material, such as crushed limestone or recycled concrete, consistent with IDOT CA-6 or CA-7 gradation. All structural fill should be inorganic, free of waste and debris, and does not contain frozen material or any material which, by decay or otherwise, might cause settlement. Where wet conditions are expected, free draining crushed limestone with an IDOT CA-7 gradation is recommended.

Structural fill shall be placed in lifts not to exceed 8 inches in loose thickness, and compacted to a minimum of 95% of the Modified Proctor maximum dry density obtained according to the ASTM D1557 Method. Frozen materials should not be used, and fill materials should not be placed on frozen subgrade. Should fill be placed during cool, wet seasons, the use of granular fill may be necessary since weather conditions will make compaction of cohesive soils more difficult. If water seepage occurred during subgrade preparation activities or where wet, but suitable soil is present in the bottom of the excavation, GSG recommends placing 2 feet of open graded stone, such as IDOT CA-1 or CA-7, to stabilize the bottom of the excavation. The open drain stone should be placed in 12 inches lifts and compacted to the extent practical using a heavy smooth drum roller or heavy vibratory plate compactor. The remaining portion of the excavation should be backfilled using approved engineered fill. Fill materials shall be compacted in accordance with the following specified requirements:

- Unpaved areas: Compact top 8 inches of subgrade and each successive layer (not exceeding 12-inch thickness of loose measure) of backfill or fill material to a minimum of 75% relative density for free-draining cohesionless soils (ASTM D4253 & D4254) and

85% maximum density for cohesive soil material, as determined by the modified proctor method (ASTM D-1557).

- Pavement areas: compact top 8 inches of subgrade and each layer of backfill or fill material to a minimum of 80% relative density for free-draining cohesionless soils (ASTM D4253 & D4254) and 95% maximum dry density for cohesive soils and well graded granular soil, as determined by the modified proctor method (ASTM D-1557).
- Building Areas: Compact top 8 inches of subgrade and each layer of structural backfill or fill materials to minimum of 85% relative density for free-draining cohesionless soils (ASTM D4253 & D4254) and 95% maximum dry density for well graded granular soil, as determined by the modified proctor method (ASTM D1557).

GSG recommends that the subgrade preparation, and structural fill placement and compaction be inspected by GSG's geotechnical engineer to verify the type and strength of soil materials present at the site and their conformance with the geotechnical recommendations in this report.

3.5.6 Drainage and Groundwater Control

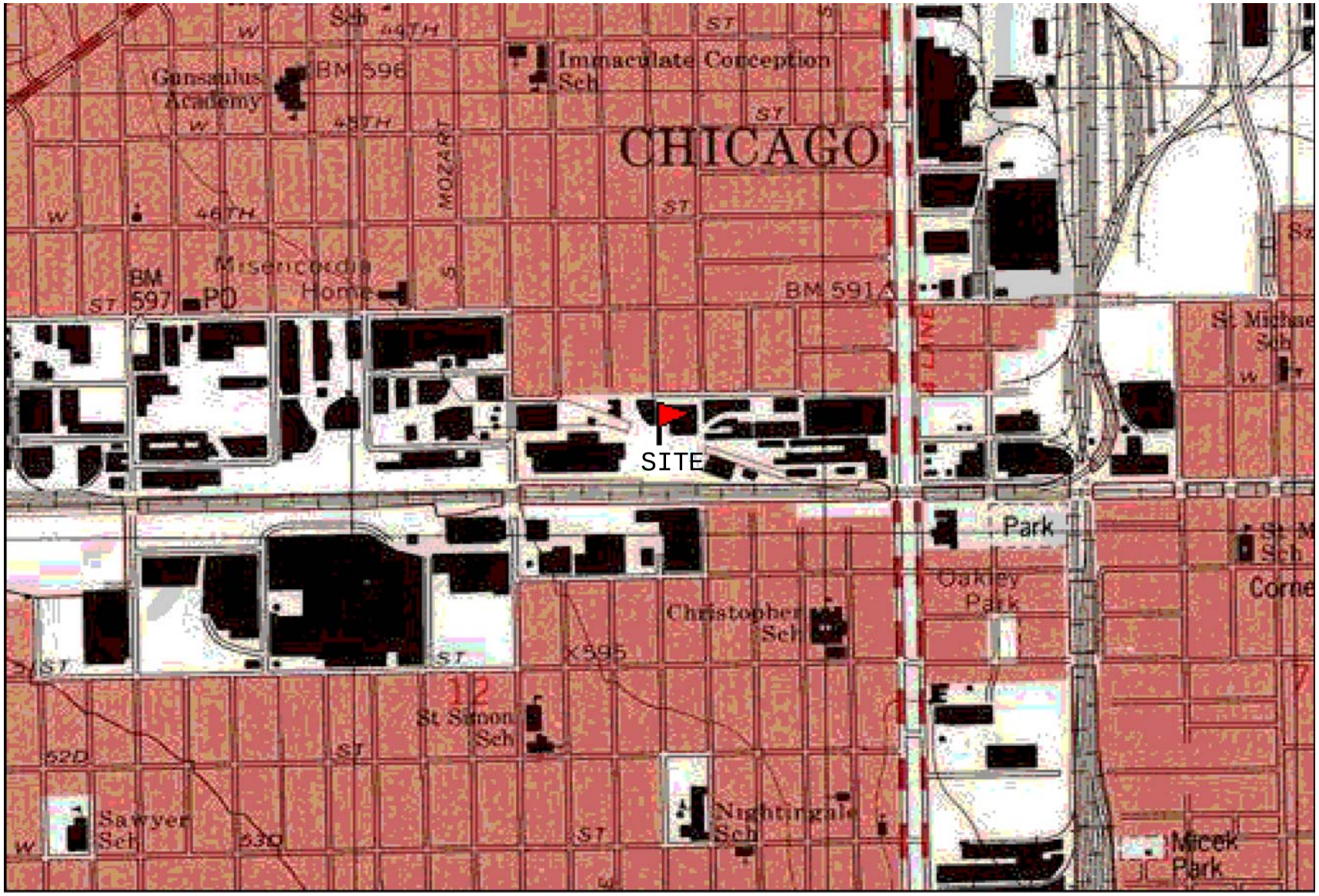
Groundwater was encountered in several of the borings between 3.5 and 13 feet below the existing ground surface. The shallow water encountered in some of the borings appears to be perched, and it is assumed that the long term water table will be approximately 8 to 10 feet below the surface. We anticipate some water seepage to occur at the bottom of the footing excavation. Additionally, based on GSG's field observations and experience with similar projects, perched water will infiltrate foundation and underground utility excavations. If rainwater run-off or perched water is accumulated at the base of excavation, the contractor should remove accumulated water using conventional sump pits and pump procedures to maintain a dry and stable excavation. The location of the sump should be determined by the contractor based on field conditions. During earthmoving activities at the site, grading should be performed to ensure that drainage is maintained throughout the construction period. Water should not be allowed to accumulate in the foundation area either during or after construction. Undercut and excavated areas should be sloped toward one corner to facilitate removal of any collected rainwater or surface run-off. Grades should be sloped away from the building excavation to minimize runoff from entering the building area excavation.

3.6 Limitations

GSG has prepared this report in accordance with generally accepted geotechnical engineering practices to aid in the evaluation of the site subsurface soils. No other warranty expressed or implied is made. The scope of this report is limited to the specific project and location described herein, and our description of this project represents our understanding of the project. The

geotechnical engineering analysis and foundation recommendations presented herein were developed based on the information obtained during the subsurface investigation. It should be noted that the borehole data reflects the subsurface conditions only at the specific locations at the particular time designated on the borehole logs, and that soil and groundwater conditions could vary widely throughout the site. The nature and extent of any variation in the borehole may not become evident until subsurface exposure, during construction activities. If variations do appear, it may become necessary to re-evaluate the recommendations of this report. All field construction activities shall be inspected by GSG's geotechnical engineer to verify the type and strength of soil materials present at the site and their conformance with the geotechnical recommendations in this report.

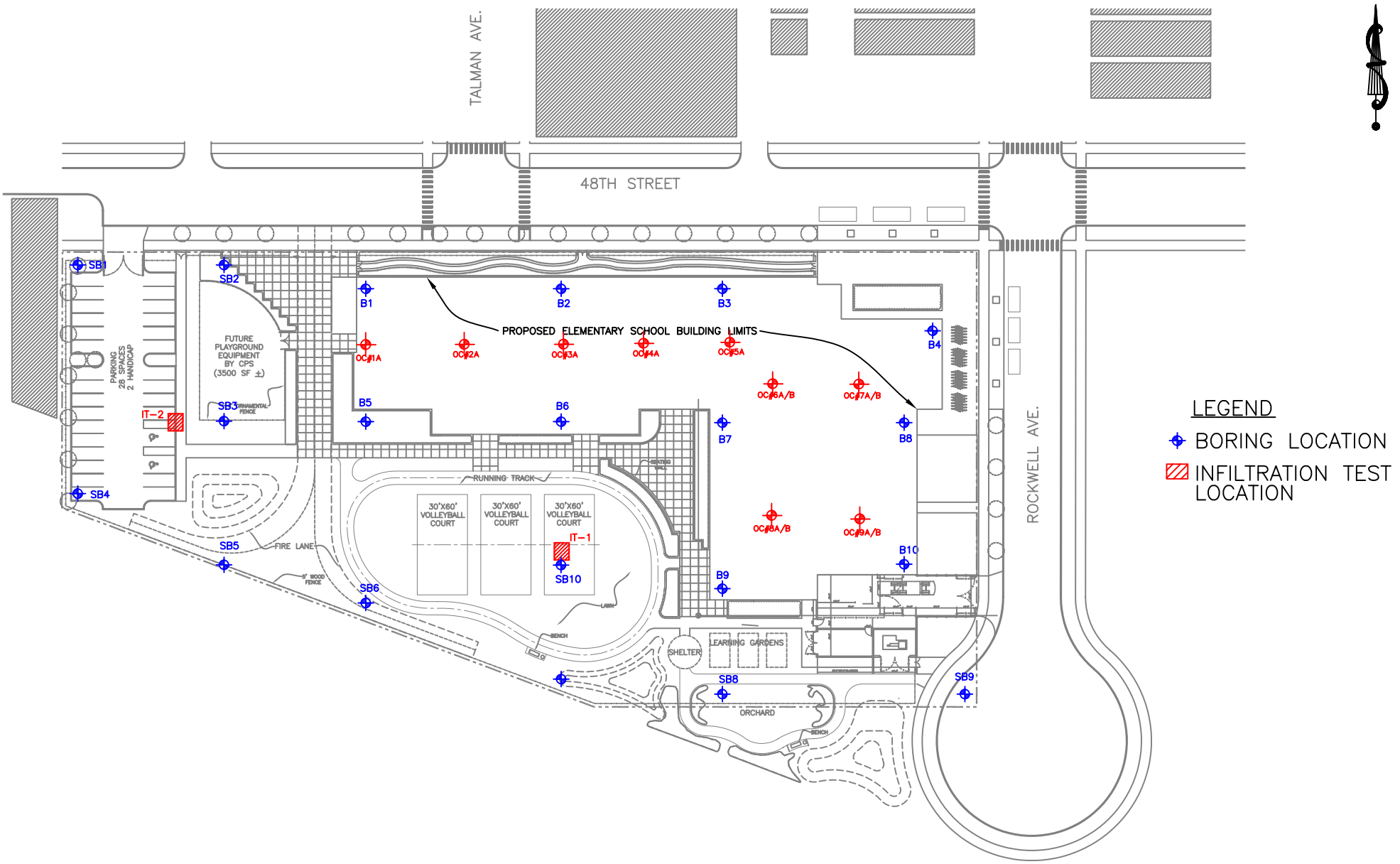
EXHIBITS



GSG CONSULTANTS, INC.
855 W. ADAMS, SUITE 200
CHICAGO, IL. 60607
PHONE: (312) 733-6262
FAX : (312) 733-5612

SCALE:	NTS
DRAWN BY:	LO
CHECKED BY:	MG
DATE:	4/16/09

EXHIBIT 1: SITE LOCATION MAP
BRIGHTON PARK II ELEMENTARY SCHOOL
2611 WEST 48TH STREET
CHICAGO, IL



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CHICAGO, IL 60607
PHONE: (312) 733-6262
FAX : (312) 733-5612

EXHIBIT 2 - SOIL BORING LOCATION MAP
BRIGHTON PARK II ELEMENTARY SCHOOL
CHICAGO, IL

SCALE:	N.T.S.	DRAWN BY :	MAG
DATE :	04-16-09	CHECKED BY:	AS

APPENDIX A

SOIL BORING LOGS

GSG CONSULTANTS, INC.
855 West Adams, Suite 200
Chicago, Illinois 60607
tel: 312.733.6262 • fax: 312.733.5612

CLIENT: Public Building Commission

SHEET 1 OF 1

PROJECT: Brighton Park II

LOCATION: W. 48th Street & S. Rockwell Street
Chicago, Illinois

LOGGED BY: IM **Date:** 4/3/2009 **BORING NUMBER:** B-1 **DEPTH:** 20' **GROUND ELEVATION:** NA

DEPTH (FT)	STRATA	SOIL/ROCK DESCRIPTION	SAMPLE TYPE & NO. DEPTH (FT) RECOVERY (INCHES/LENGTH)	SAMPLE RECOVERY	BLOW COUNTS	Bulk Unit Weight (PCF)	NOTES
0.0		FILL- Clay, Brick fragments, Slag, Gravel and Sand	AU-1 0 -1.0'				
1.0			SS-2 1.0-2.5 12/18"R		3 4 7		
2.0							
3.0							
4.0			SS-3 3.5-5.0 18/18"R		2 3 5		
5.0		Silty Clay, Little Sand, Trace Gravel (CL) - Brown to Grey - Very Stiff					
6.0							
7.0		Silty Clay, Trace Sand and Gravel (CL) - Brown - Hard	SS-4 6.0-7.5 14/18"R		4 5 7		qu = 3.39 TSF
8.0							
9.0		Silty Clay, Trace Sand and Gravel (CL) - Grey - Very Stiff to Hard	SS-5 8.5-10.0 18/18"R		3 5 7		
10.0							
11.0							
12.0			SS-6 11.0 -12.5 18/18"R		4 6 9		
13.0							
14.0			SS-7 13.5-15.0 18/18"R		3 5 9		
15.0							
16.0							
17.0							
18.0							
19.0			SS-8 18.5-20.0 18/18"R		3 7 10		
20.0							

Water Content
Blow Count
10 20 30 40 50
1 2 3 4 5
Pocket Penetrometer (TSF)
Unconfined Comp. Strength (TSF)

End of Boring at 20-feet bgs.

Drilling Contractor: GSG Drilling
Drilling Method: 3 1/4" I.D. Hollow Stem Augers
Equipment: Diedrich D-50
Started: 3-Apr-09 Ended: 3-Apr-09

REMARKS
Borehole backfilled with cuttings upon completion.

WATER LEVEL (FT)
▽ No Water Encountered

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CLIENT: Public Building Commission

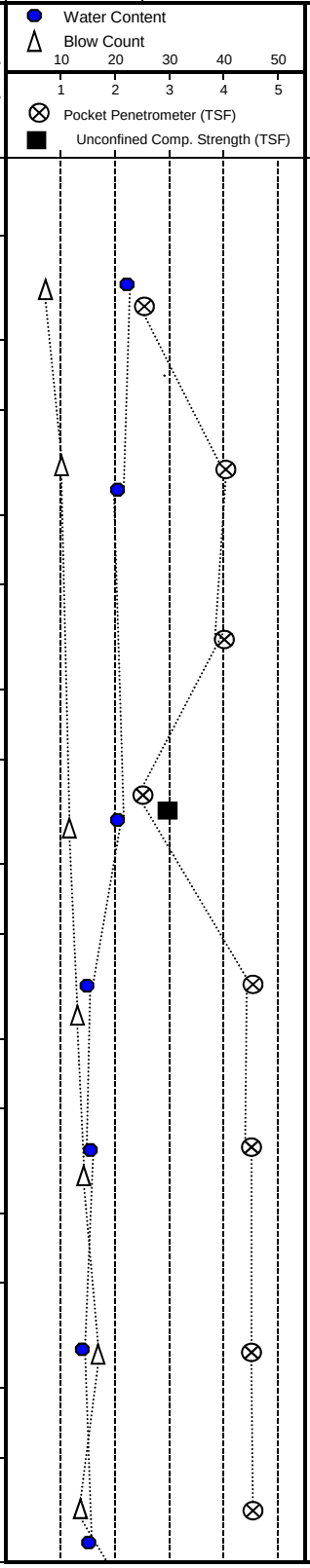
SHEET 1 OF 3

PROJECT: Brighton Park II

LOCATION: W. 48th Street & S. Rockwell Street
Chicago, Illinois

LOGGED BY: IM **Date:** 4/2/2009 **BORING NUMBER:** B-2 **DEPTH:** 45' **GROUND ELEVATION:** NA

DEPTH (FT)	STRATA	SOIL/ROCK DESCRIPTION	SAMPLE TYPE & NO. DEPTH (FT) RECOVERY (INCHES/LENGTH)	SAMPLE RECOVERY	BLOW COUNTS	Bulk Unit Weight (PCF)	NOTES
0.0		FILL- Clay, Brick Fragments, Slag, Gravel and Sand	AU-1 0 -1.0'				
1.0			SS-2 1.0-2.5 10/18"R		2 3 5		
2.0		Silty Clay, Trace Sand and Gravel (CL) - Brown to Grey - Very Stiff					
3.0							
4.0			SS-3 3.5-5.0 14/18"R		3 4 6		
5.0							
6.0		Shelby Tube Collected 6-8'	ST-4 6.0-8.0 6/24"				
7.0							
8.0		Silty Clay, Trace Sand and Gravel (CL) - Grey - Very Stiff to Hard					
9.0			SS-5 8.5-10.0 18/18"R		1 4 7		qu = 3.01 TSF
10.0							
11.0			SS-6 11.0-12.5 14/18"R		2 5 8		
12.0							
13.0							
14.0			SS-7 13.5-15.0 16/18"R		2 4 8		
15.0							
16.0			SS-8 16.0-17.5 18/18"R		4 7 11		
17.0							
18.0							
19.0			SS-9 18.5-20.0 18/18"R		4 5 9		
20.0							



End of Boring at 45-feet bgs.

Drilling Contractor: GSG Drilling
Drilling Method: 3 1/4" I.D. Hollow Stem Augers
Equipment: Diedrich D-50
Started: 2-Apr-09 Ended: 2-Apr-09

REMARKS
Borehole backfilled with cuttings upon completion

WATER LEVEL (FT)
▽ No water encountered

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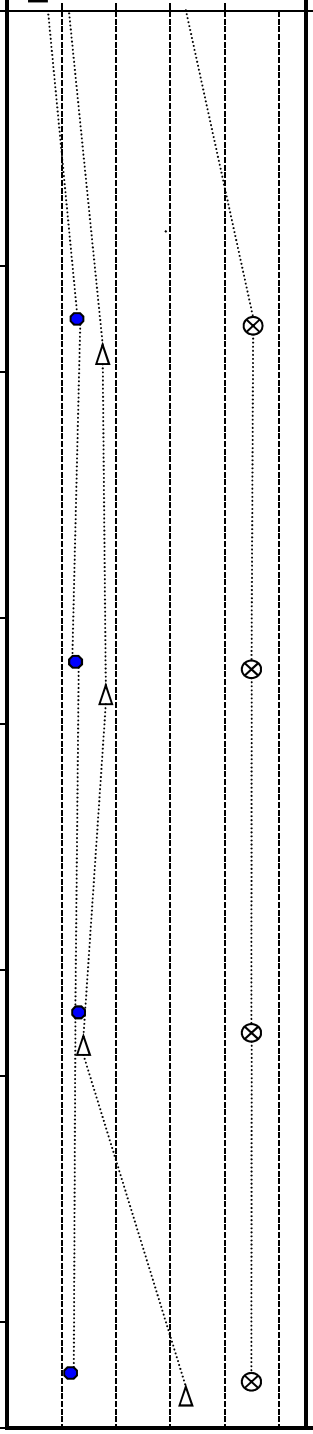
CLIENT: Public Building Commission

PROJECT: Brighton Park II

LOCATION: W. 48th Street & S. Rockwell Street
Chicago, Illinois

LOGGED BY: IM **Date:** 4/2/2009 **BORING NUMBER:** B-2 **DEPTH:** 45' **GROUND ELEVATION:** NA

DEPTH (FT)	STRATA	SOIL/ROCK DESCRIPTION	SAMPLE TYPE & NO. DEPTH (FT) RECOVERY (INCHES/LENGTH)	SAMPLE RECOVERY	BLOW COUNTS	Bulk Unit Weight (PCF)
20.0		Silty Clay, Trace Sand and Gravel (CL) - Grey - Hard				
21.0						
22.0						
23.0						
24.0			SS-10 23.5-25.0 18/18"R		5 7 10	
25.0						
26.0						
27.0						
28.0						
29.0			SS-11 28.5-30.0 18/18"R		6 8 10	
30.0						
31.0						
32.0						
33.0						
34.0			SS-12 33.5-35.0 18/18"R		4 5 9	
35.0						
36.0						
37.0						
38.0		Clayey Silt, Trace Gravel (ML) - Grey - Hard				
39.0			SS-13 38.5-40.0 18/18"R		10 13 20	
40.0						



NOTES

End of Boring at 45-feet bgs.

Drilling Contractor: GSG Drilling
Drilling Method: 3 1/4" I.D. Hollow Stem Augers
Equipment: Diedrich D-50
Started: 2-Apr-09 Ended: 2-Apr-09

REMARKS
Borehole backfilled with cuttings upon completion

WATER LEVEL (FT)
▽ No water encountered

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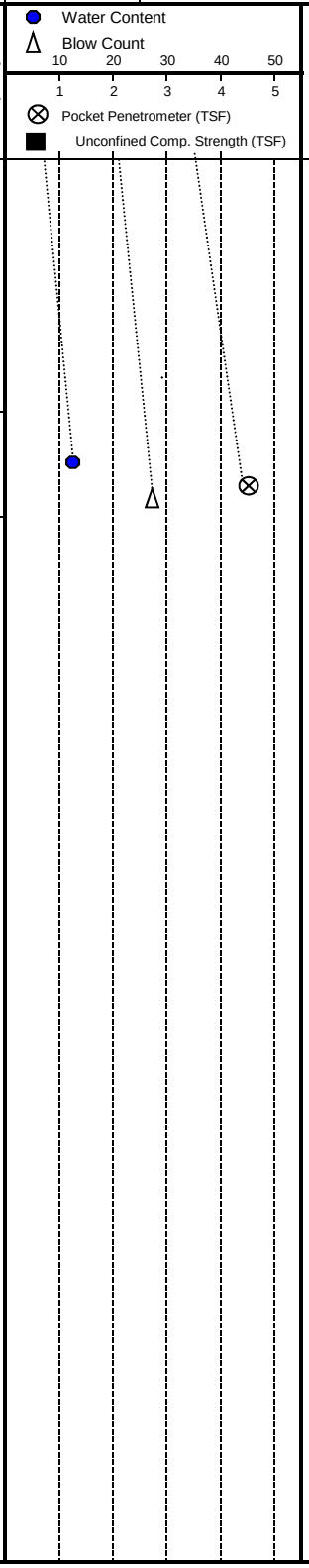
CLIENT: Public Building Commission — SHEET 3 OF 3

PROJECT: Brighton Park II

LOCATION: W. 48th Street & S. Rockwell Street, Chicago, Illinois

LOGGED BY: IM **Date:** 4/2/2009 **BORING NUMBER:** B-2 **DEPTH:** 45' **GROUND ELEVATION:** NA

DEPTH (FT)	STRATA	SOIL/ROCK DESCRIPTION	SAMPLE TYPE & NO. DEPTH (FT) RECOVERY (INCHES/LENGTH)	SAMPLE RECOVERY	BLOW COUNTS	Bulk Unit Weight (PCF)	NOTES
40.0		Clayey Silt, Trace Gravel (ML) - Grey - Hard					
41.0							
42.0							
43.0							
44.0			SS-14 43.5-45.0 18/18"R		7 11 16		
45.0		**End of Boring at 45-feet bgs.**					
46.0							
47.0							
48.0							
49.0							
50.0							
51.0							
52.0							
53.0							
54.0							
55.0							
56.0							
57.0							
58.0							
59.0							
60.0							



Drilling Contractor: GSG Drilling
Drilling Method: 3 1/4" I.D. Hollow Stem Augers
Equipment: Diedrich D-50
Started: 2-Apr-09 Ended: 2-Apr-09

REMARKS
Borehole backfilled with cuttings upon completion

WATER LEVEL (FT)
▽ No water encountered

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CLIENT: Public Building Commission

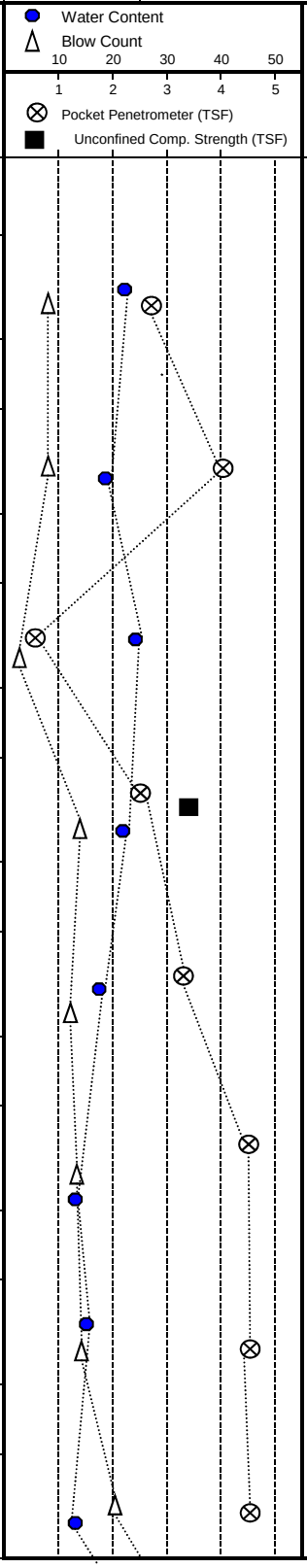
SHEET 1 OF 3

PROJECT: Brighton Park II

LOCATION: W. 48th Street & S. Rockwell Street
Chicago, Illinois

LOGGED BY: IM **Date:** 4/2/2009 **BORING NUMBER:** B-3 **DEPTH:** 45' **GROUND ELEVATION:** NA

DEPTH (FT)	STRATA	SOIL/ROCK DESCRIPTION	SAMPLE TYPE & NO. DEPTH (FT) RECOVERY (INCHES/LENGTH)	SAMPLE RECOVERY	BLOW COUNTS	Bulk Unit Weight (PCF)	NOTES
0.0		FILL- Clay, Brick Fragments, Slag, Gravel and Sand	AU-1 0 -1.0'				
1.0			SS-2 1.0-2.5 12/18"R		3 4 4		
2.0		Silty Clay, Trace Sand and Gravel (CL) - Dark Grey to Grey - Very Stiff					
3.0							
4.0		Silty Clay, Trace Sand and Gravel (CL) - Brown - Soft to Very Stiff	SS-3 3.5-5.0 16/18"R		4 4 4		
5.0							
6.0			SS-4 6.0-7.5 16/18"R		0 1 2		
7.0							
8.0							
9.0			SS-5 8.5-10.0 18/18"R		3 6 8		qu = 3.41 TSF
10.0							
11.0							
12.0		Silty Clay, Trace Sand and Gravel (CL) - Grey - Very Stiff to Hard	SS-6 11.0-12.5 18/18"R		2 4 8		
13.0							
14.0			SS-7 13.5-15.0 18/18"R		2 4 7		
15.0							
16.0			SS-8 16.0-17.5 18/18"R		3 5 9		
17.0							
18.0		Clayey Silt, Trace Gravel (ML) - Grey - Hard					
19.0			SS-9 18.5-20.0 12/18"R		10 9 11		
20.0							



End of Boring at 45-feet bgs.

Drilling Contractor: GSG Drilling
Drilling Method: 3 1/4" I.D. Hollow Stem Augers
Equipment: Diedrich D-50
Started: 2-Apr-09 Ended: 2-Apr-09

REMARKS
Borehole backfilled with cuttings upon completion

WATER LEVEL (FT)
▽ No water encountered

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PROJECT: Brighton Park II

LOCATION: W. 48th Street & S. Rockwell Street
Chicago, Illinois

LOGGED BY: IM **Date:** 4/2/2009 **BORING NUMBER:** B-3 **DEPTH:** 45' **GROUND ELEVATION:** NA

DEPTH (FT)	STRATA	SOIL/ROCK DESCRIPTION	SAMPLE TYPE & NO. DEPTH (FT) RECOVERY (INCHES/LENGTH)	SAMPLE RECOVERY	BLOW COUNTS	Bulk Unit Weight (PCF)	NOTES
20.0		Silty Clay, Trace Sand and Gravel (CL) - Grey - Hard to Very Stiff					
21.0							
22.0							
23.0							
24.0			SS-10 23.5-25.0 16/18"R		4 8 10		
25.0							
26.0							
27.0							
28.0							
29.0			SS-11 28.5-30.0 18/18"R		4 6 7		
30.0							
31.0							
32.0							
33.0							
34.0			SS-12 33.5-35.0 18/18"R		4 6 8		
35.0							
36.0							
37.0							
38.0							
39.0			SS-13 38.5-40.0 18/18"R		6 9 11		
40.0		Clayey Silt, Trace Gravel (ML) - Grey - Hard					

Water Content
Blow Count
10 20 30 40 50
1 2 3 4 5
Pocket Penetrometer (TSF)
Unconfined Comp. Strength (TSF)

End of Boring at 45-feet bgs.

Drilling Contractor: GSG Drilling
Drilling Method: 3 1/4" I.D. Hollow Stem Augers
Equipment: Diedrich D-50
Started: 2-Apr-09 Ended: 2-Apr-09

REMARKS
Borehole backfilled with cuttings upon completion

WATER LEVEL (FT)
▽ No water encountered

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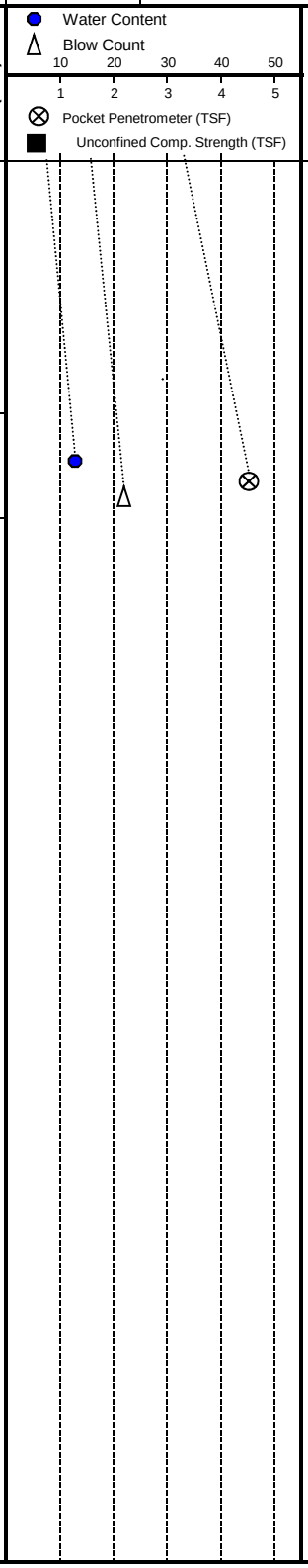
CLIENT: Public Building Commission

PROJECT: Brighton Park II

LOCATION: W. 48th Street & S. Rockwell Street
Chicago, Illinois

LOGGED BY: IM **Date:** 4/2/2009 **BORING NUMBER:** B-3 **DEPTH:** 45' **GROUND ELEVATION:** NA

DEPTH (FT)	STRATA	SOIL/ROCK DESCRIPTION	SAMPLE TYPE & NO. DEPTH (FT) RECOVERY (INCHES/LENGTH)	SAMPLE RECOVERY	BLOW COUNTS	Bulk Unit Weight (PCF)	NOTES
40.0		Clayey Silt, Trace Gravel (ML) - Grey - Hard					
41.0							
42.0							
43.0							
44.0			SS-14 43.5-45.0 18/18"R		5 10 12		
45.0		**End of Boring at 45-feet bgs.**					
46.0							
47.0							
48.0							
49.0							
50.0							
51.0							
52.0							
53.0							
54.0							
55.0							
56.0							
57.0							
58.0							
59.0							
60.0							



Drilling Contractor: GSG Drilling
Drilling Method: 3 1/4" I.D. Hollow Stem Augers
Equipment: Diedrich D-50
Started: 2-Apr-09 Ended: 2-Apr-09

REMARKS
Borehole backfilled with cuttings upon completion

WATER LEVEL (FT)
▽ No water encountered

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CLIENT: Public Building Commission

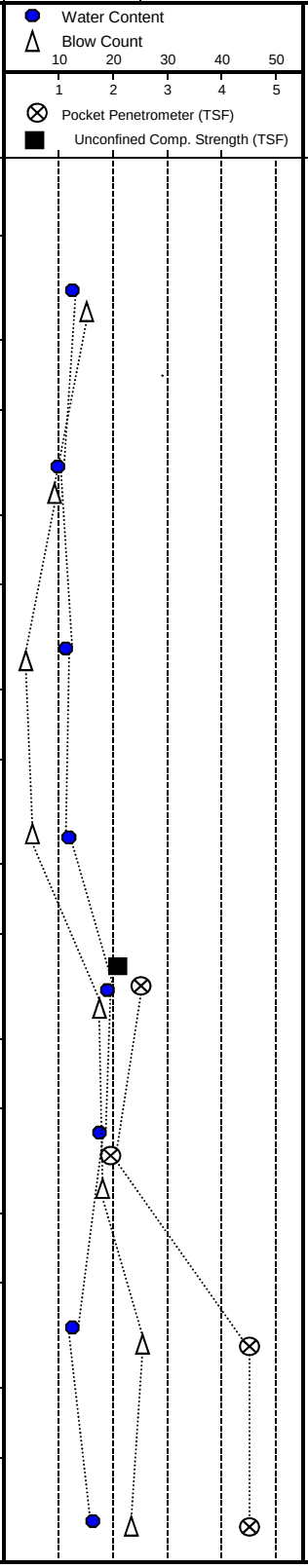
SHEET 1 OF 1

PROJECT: Brighton Park II

LOCATION: W. 48th Street & S. Rockwell Street
Chicago, Illinois

LOGGED BY: IM **Date:** 3/31/2009 **BORING NUMBER:** B-4 **DEPTH:** 20' **GROUND ELEVATION:** NA

DEPTH (FT)	STRATA	SOIL/ROCK DESCRIPTION	SAMPLE TYPE & NO. DEPTH (FT) RECOVERY (INCHES/LENGTH)	SAMPLE RECOVERY	BLOW COUNTS	Bulk Unit Weight (PCF)	NOTES
0.0		FILL- Clay, Brick fragments, Slag, Gravel and Sand	AU-1 0 -1.0'				
1.0			SS-2 1.0-2.5 10/18"R		6 7 8		
2.0							
3.0			SS-3 3.5-5.0 8/18"R		5 6 3		
4.0							
5.0			SS-4 6.0-7.5 2/18"R		2 2 2		
6.0							
7.0			SS-5 8.5-10.0 2/18"R		2 2 3		
8.0							
9.0			SS-6 11.0 -12.5 12/18"R		3 8 9		qu = 2.20 TSF
10.0		Silty Clay, Trace Sand and Gravel (CL) - Grey - Very Stiff to Hard					
11.0							
12.0			SS-7 13.5-15.0 14/18"R		4 7 11		
13.0							
14.0			SS-8 16.0-17.5 12/18"R		9 11 14		
15.0							
16.0			SS-9 18.5-20.0 12/18"R		5 9 14		
17.0							
18.0							
19.0							
20.0							



End of Boring at 20-feet bgs.

Drilling Contractor: GSG Drilling
Drilling Method: 3 1/4" I.D. Hollow Stem Augers
Equipment: Diedrich D-50
Started: 31-Mar-09 Ended: 31-Mar-09

REMARKS
Borehole backfilled with cuttings upon completion. Cave in at 4'.

WATER LEVEL (FT)
▽ No water encountered
▽ Water encountered at 6'
▼

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CLIENT: Public Building Commission

PROJECT: Brighton Park II

LOCATION: W. 48th Street & S. Rockwell Street
Chicago, Illinois

LOGGED BY: IM **Date:** 4/3/2009 **BORING NUMBER:** B-5 **DEPTH:** 20' **GROUND ELEVATION:** NA

DEPTH (FT)	STRATA	SOIL/ROCK DESCRIPTION	SAMPLE TYPE & NO. DEPTH (FT) RECOVERY (INCHES/LENGTH)	SAMPLE RECOVERY	BLOW COUNTS	Bulk Unit Weight (PCF)	NOTES
0.0		FILL- Clay, Brick fragments, Slag, Gravel and Sand	AU-1 0 -1.0'				
1.0			SS-2 1.0-2.5 10/18"R		2 4 6		
2.0		Silty Clay, Trace Sand and Gravel (CL) - Grey - Very Stiff					
3.0		Silty Clay, Trace Sand and Gravel (CL) - Brown - Stiff to Hard					
4.0			SS-3 3.5-5.0 14/18"R		2 2 2		
5.0							
6.0			SS-4 6.0-7.5 18/18"R		3 4 5		qu = 4.74 TSF
7.0							
8.0		Silty Clay, Trace Sand and Gravel (CL) - Grey - Very Stiff to Hard					
9.0			SS-5 8.5-10.0 18/18"R		3 5 6		
10.0							
11.0			SS-6 11.0 -12.5 18/18"R		4 6 11		
12.0							
13.0			SS-7 13.5-15.0 18/18"R		10 21 33		
14.0		Silt, Trace Gravel (ML) - Grey - Hard					
15.0							
16.0							
17.0							
18.0		Silty Clay, Trace Sand and Gravel (CL) - Grey -Hard					
19.0			SS-8 18.5-20.0 16/18"R		6 9 11		
20.0							

Water Content
Blow Count
10 20 30 40 50
1 2 3 4 5
Pocket Penetrometer (TSF)
Unconfined Comp. Strength (TSF)

End of Boring at 20-feet bgs.

Drilling Contractor: GSG Drilling
Drilling Method: 3 1/4" I.D. Hollow Stem Augers
Equipment: Diedrich D-50
Started: 3-Apr-09 Ended: 3-Apr-09

REMARKS
Borehole backfilled with cuttings upon completion. Cave in at 5'.

WATER LEVEL (FT)
Water Encountered at 13'

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CLIENT: Public Building Commission

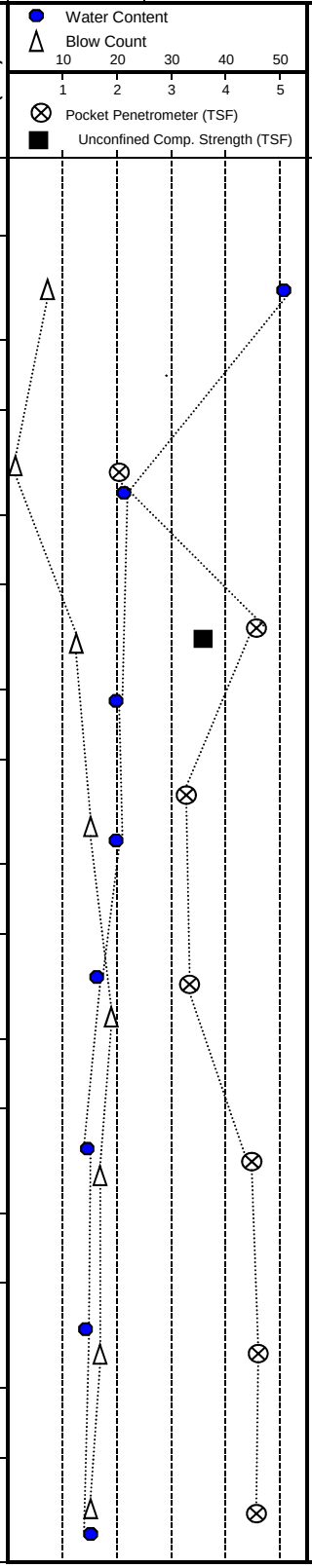
SHEET 1 OF 3

PROJECT: Brighton Park II

LOCATION: W. 48th Street & S. Rockwell Street
Chicago, Illinois

LOGGED BY: IM **Date:** 4/1/2009 **BORING NUMBER:** B-6 **DEPTH:** 45' **GROUND ELEVATION:** NA

DEPTH (FT)	STRATA	SOIL/ROCK DESCRIPTION	SAMPLE TYPE & NO. DEPTH (FT) RECOVERY (INCHES/LENGTH)	SAMPLE RECOVERY	BLOW COUNTS	Bulk Unit Weight (PCF)	NOTES
0.0		FILL- Clay, Brick Fragments, Slag, Gravel and Sand	AU-1 0 -1.0'				
1.0			SS-2 1.0-2.5 12/18"R		1 3 4		
2.0							
3.0							
4.0		Sand, Trace Gravel (SM) - Grey - Very Loose	SS-3 3.5-5.0 18/18"R		1 0 1		
5.0		Silty Clay, Trace Sand and Gravel (CL) - Brown - Very Stiff to Hard					
6.0			SS-4 6.0-7.5 14/18"R		2 5 8		qu = 3.62 TSF
7.0							
8.0							
9.0			SS-5 8.5-10.0 18/18"R		2 6 9		
10.0							
11.0							
12.0		Silty Clay, Trace Sand and Gravel (CL) - Grey - Very Stiff	SS-6 11.0-12.5 18/18"R		3 6 13		
13.0		Clayey Silt, Trace Gravel (ML) - Grey - Hard					
14.0			SS-7 13.5-15.0 16/18"R		2 7 9		
15.0		Silty Clay, Trace Sand and Gravel (CL) - Grey - Hard					
16.0			SS-8 16.0-17.5 18/18"R		3 6 10		
17.0							
18.0							
19.0			SS-9 18.5-20.0 18/18"R		4 7 8		
20.0							



End of Boring at 45-feet bgs.

Drilling Contractor: GSG Drilling
Drilling Method: 3 1/4" I.D. Hollow Stem Augers
Equipment: Diedrich D-50
Started: 1-Apr-09 Ended: 1-Apr-09

REMARKS
Borehole backfilled with cuttings upon completion

WATER LEVEL (FT)
▽ No water encountered

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CLIENT: Public Building Commission

PROJECT: Brighton Park II

LOCATION: W. 48th Street & S. Rockwell Street
Chicago, Illinois

LOGGED BY: IM **Date:** 4/1/2009 **BORING NUMBER:** B-6 **DEPTH:** 45' **GROUND ELEVATION:** NA

DEPTH (FT)	STRATA	SOIL/ROCK DESCRIPTION	SAMPLE TYPE & NO. DEPTH (FT) RECOVERY (INCHES/LENGTH)	SAMPLE RECOVERY	BLOW COUNTS	Bulk Unit Weight (PCF)
20.0		Silty Clay, Trace Sand and Gravel (CL) - Grey - Hard				
21.0						
22.0						
23.0						
24.0			SS-10 23.5-25.0 18/18"R		4 7 10	
25.0						
26.0						
27.0						
28.0						
29.0			SS-11 28.5-30.0 18/18"R		5 7 15	
30.0						
31.0						
32.0						
33.0						
34.0			SS-12 33.5-35.0 18/18"R		3 5 8	
35.0						
36.0						
37.0						
38.0		Clayey Silt, Trace Gravel (ML) - Grey -				
39.0			SS-13 38.5-40.0 18/18"R		7 14 18	
40.0						

Water Content
Blow Count
10 20 30 40 50
1 2 3 4 5
Pocket Penetrometer (TSF)
Unconfined Comp. Strength (TSF)

NOTES

End of Boring at 45-feet bgs.

Drilling Contractor: GSG Drilling
Drilling Method: 3 1/4" I.D. Hollow Stem Augers
Equipment: Diedrich D-50
Started: 1-Apr-09 Ended: 1-Apr-09

REMARKS
Borehole backfilled with cuttings upon completion

WATER LEVEL (FT)
▽ No water encountered

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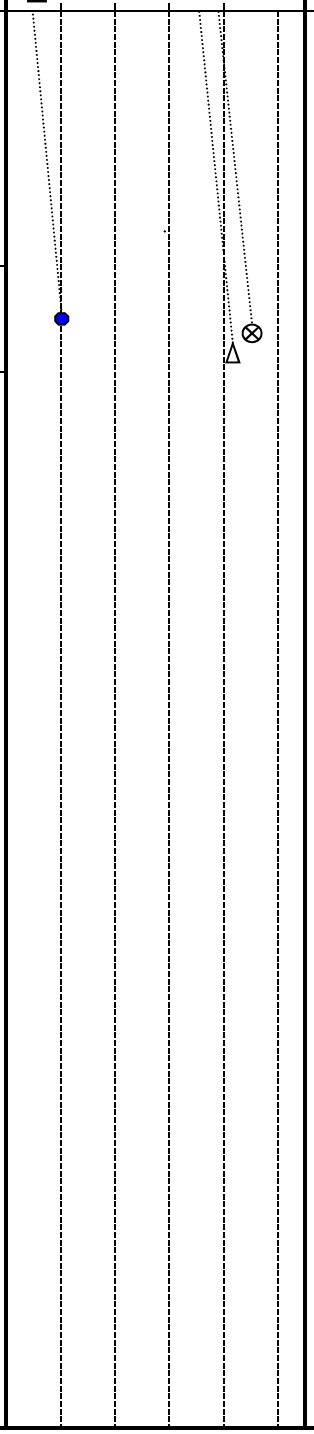
CLIENT: Public Building Commission

PROJECT: Brighton Park II

LOCATION: W. 48th Street & S. Rockwell Street
Chicago, Illinois

LOGGED BY: IM **Date:** 4/1/2009 **BORING NUMBER:** B-6 **DEPTH:** 45' **GROUND ELEVATION:** NA

DEPTH (FT)	STRATA	SOIL/ROCK DESCRIPTION	SAMPLE TYPE & NO. DEPTH (FT) RECOVERY (INCHES/LENGTH)	SAMPLE RECOVERY	BLOW COUNTS	Bulk Unit Weight (PCF)	NOTES
40.0		Clayey Silt, Trace Gravel (ML) - Grey - Hard					
41.0							
42.0							
43.0							
44.0			SS-14 43.5-45.0 18/18"R		12 16 25		
45.0		**End of Boring at 45-feet bgs.**					
46.0							
47.0							
48.0							
49.0							
50.0							
51.0							
52.0							
53.0							
54.0							
55.0							
56.0							
57.0							
58.0							
59.0							
60.0							



Drilling Contractor: GSG Drilling
Drilling Method: 3 1/4" I.D. Hollow Stem Augers
Equipment: Diedrich D-50
Started: 1-Apr-09 Ended: 1-Apr-09

REMARKS
Borehole backfilled with cuttings upon completion

WATER LEVEL (FT)
▽ No water encountered

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SHEET 1 OF 3

PROJECT: Brighton Park II

LOCATION: W. 48th Street & S. Rockwell Street
Chicago, Illinois

LOGGED BY: IM **Date:** 4/2/2009 **BORING NUMBER:** B-7 **DEPTH:** 45' **GROUND ELEVATION:** NA

DEPTH (FT)	STRATA	SOIL/ROCK DESCRIPTION	SAMPLE TYPE & NO. DEPTH (FT) RECOVERY (INCHES/LENGTH)	SAMPLE RECOVERY	BLOW COUNTS	Bulk Unit Weight (PCF)	NOTES
0.0		FILL- Clay, Brick Fragments, Slag, Gravel and Sand	AU-1 0 -1.0'				
1.0			SS-2 1.0-2.5 12/18"R		2 4 7		
2.0		Silty Clay, Trace Sand and Gravel (CL) - Grey - Very Stiff to Hard					
3.0							
4.0			SS-3 3.5-5.0 16/18"R		4 5 7		
5.0							
6.0			SS-4 6.0-7.5 18/18"		2 2 3		
7.0							
8.0							
9.0		Shelby Tube 8.5-10.5'	ST-5 8.5-10.5 24/24"		P U S H		Unconfined qu = 0.63 TSF
10.0							
11.0							
12.0			SS-6 11.0-12.5 18/18"R		3 5 9		
13.0							
14.0			SS-7 13.5-15.0 18/18"R		3 5 11		
15.0							
16.0			SS-8 16.0-17.5 16/18"R		3 6 8		
17.0							
18.0							
19.0			SS-9 18.5-20.0 18/18"R		4 7 11		
20.0							

Water Content
Blow Count
10 20 30 40 50
1 2 3 4 5
Pocket Penetrometer (TSF)
Unconfined Comp. Strength (TSF)

End of Boring at 45-feet bgs.

Drilling Contractor: GSG Drilling
Drilling Method: 3 1/4" I.D. Hollow Stem Augers
Equipment: Diedrich D-50
Started: 2-Apr-09 Ended: 2-Apr-09

REMARKS
Borehole backfilled with cuttings upon completion. Boring offset 15' west.

WATER LEVEL (FT)
▽ No water encountered

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PROJECT: Brighton Park II

LOCATION: W. 48th Street & S. Rockwell Street
Chicago, Illinois

LOGGED BY: IM **Date:** 4/2/2009 **BORING NUMBER:** B-7 **DEPTH:** 45' **GROUND ELEVATION:** NA

DEPTH (FT)	STRATA	SOIL/ROCK DESCRIPTION	SAMPLE TYPE & NO. DEPTH (FT) RECOVERY (INCHES/LENGTH)	SAMPLE RECOVERY	BLOW COUNTS	Bulk Unit Weight (PCF)	NOTES
20.0		Silty Clay, Trace Sand and Gravel (CL) - Grey - Hard					
21.0							
22.0							
23.0							
24.0			SS-10 23.5-25.0 18/18"R		5 8 13		
25.0							
26.0							
27.0							
28.0							
29.0			SS-11 28.5-30.0 18/18"R		6 7 13		
30.0							
31.0							
32.0							
33.0							
34.0			SS-12 33.5-35.0 18/18"R		4 5 8		
35.0							
36.0							
37.0							
38.0		Clayey Silt, Trace Gravel (ML) - Grey - Hard					
39.0			SS-13 38.5-40.0 18/18"R		6 10 17		
40.0							

Water Content
Blow Count
10 20 30 40 50
1 2 3 4 5
Pocket Penetrometer (TSF)
Unconfined Comp. Strength (TSF)

End of Boring at 45-feet bgs.

Drilling Contractor: GSG Drilling
Drilling Method: 3 1/4" I.D. Hollow Stem Augers
Equipment: Diedrich D-50
Started: 2-Apr-09 Ended: 2-Apr-09

REMARKS
Borehole backfilled with cuttings upon completion.
Boring offset 15' west.

WATER LEVEL (FT)
▽ No water encountered

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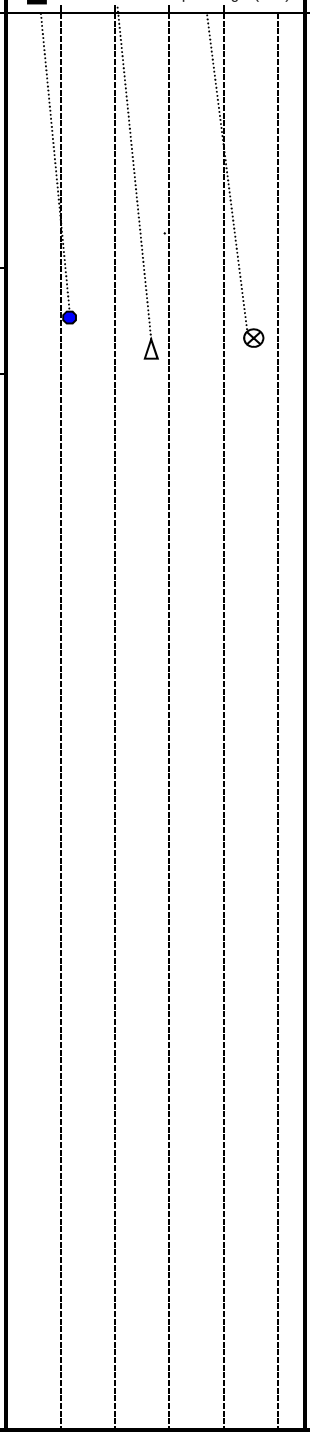
PROJECT: Brighton Park II

LOCATION: W. 48th Street & S. Rockwell Street
Chicago, Illinois

LOGGED BY: IM **Date:** 4/2/2009 **BORING NUMBER:** B-7 **DEPTH:** 45' **GROUND ELEVATION:** NA

DEPTH (FT)	STRATA	SOIL/ROCK DESCRIPTION	SAMPLE TYPE & NO. DEPTH (FT) RECOVERY (INCHES/LENGTH)	SAMPLE RECOVERY	BLOW COUNTS	Bulk Unit Weight (PCF)	NOTES
40.0		Clayey Silt, Trace Gravel (ML) - Grey - Hard					
41.0							
42.0							
43.0							
44.0			SS-14 43.5-45.0 18/18"R		8 12 14		
45.0		**End of Boring at 45-feet bgs.**					
46.0							
47.0							
48.0							
49.0							
50.0							
51.0							
52.0							
53.0							
54.0							
55.0							
56.0							
57.0							
58.0							
59.0							
60.0							



Drilling Contractor: GSG Drilling
Drilling Method: 3 1/4" I.D. Hollow Stem Augers
Equipment: Diedrich D-50
Started: 2-Apr-09 Ended: 2-Apr-09

REMARKS
Borehole backfilled with cuttings upon completion.
Boring offset 15' west.

WATER LEVEL (FT)
▽ No water encountered

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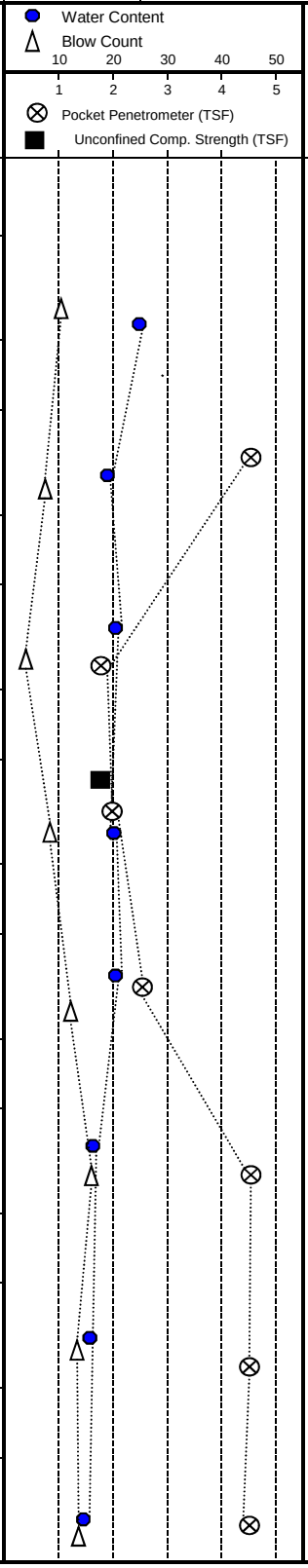
SHEET 1 OF 1

PROJECT: Brighton Park II

LOCATION: W. 48th Street & S. Rockwell Street
Chicago, Illinois

LOGGED BY: IM **Date:** 4/1/2009 **BORING NUMBER:** B-8 **DEPTH:** 20' **GROUND ELEVATION:** NA

DEPTH (FT)	STRATA	SOIL/ROCK DESCRIPTION	SAMPLE TYPE & NO. DEPTH (FT) RECOVERY (INCHES/LENGTH)	SAMPLE RECOVERY	BLOW COUNTS	Bulk Unit Weight (PCF)	NOTES
0.0		FILL- Clay, Brick fragments, Slag, Gravel and Sand	AU-1 0 -1.0'				
1.0			SS-2 1.0-2.5 10/18"R		3 4 6		
2.0							
3.0							
4.0			SS-3 3.5-5.0 10/18"R		3 3 5		
5.0		Silty Clay, Trace Sand and Gravel (CL) - Brown - Hard to Stiff					
6.0			SS-4 6.0-7.5 6/18"R		1 1 3		
7.0							
8.0							
9.0		Silty Clay, Trace Sand and Gravel (CL) - Grey - Very Stiff to Hard	SS-5 8.5-10.0 12/18"R		3 4 5		qu = 1.83 TSF
10.0							
11.0			SS-6 11.0 -12.5 18/18"R		3 5 7		
12.0							
13.0			SS-7 13.5-15.0 18/18"R		4 7 9		
14.0							
15.0							
16.0			SS-8 16.0-17.5 14/18"R		4 6 7		
17.0							
18.0							
19.0			SS-9 18.5-20.0 16/18"R		4 6 7		
20.0							



End of Boring at 20-feet bgs.

Drilling Contractor: GSG Drilling
Drilling Method: 3 1/4" I.D. Hollow Stem Augers
Equipment: Diedrich D-50
Started: 1-Apr-09 Ended: 1-Apr-09

REMARKS
Borehole backfilled with cuttings upon completion. Cave in at 5'. Boring offset 5' northeast.

WATER LEVEL (FT)
▽ No Water Encountered

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SHEET 1 OF 1

PROJECT: Brighton Park II

LOCATION: W. 48th Street & S. Rockwell Street
Chicago, Illinois

LOGGED BY: IM **Date:** 4/3/2009 **BORING NUMBER:** B-9 **DEPTH:** 20' **GROUND ELEVATION:** NA

DEPTH (FT)	STRATA	SOIL/ROCK DESCRIPTION	SAMPLE TYPE & NO. DEPTH (FT) RECOVERY (INCHES/LENGTH)	SAMPLE RECOVERY	BLOW COUNTS	Bulk Unit Weight (PCF)
0.0		FILL- Clay, Brick fragments, Slag, Gravel and Sand	AU-1 0 -1.0'			
1.0			SS-2 1.0-2.5 8/18"R		3 3 5	
2.0						
3.0						
4.0			SS-3 3.5-5.0 12/18"R		3 4 5	
5.0		Silty Clay, Trace Sand and Gravel (CL) - Grey -Very Stiff				
6.0						
7.0			SS-4 6.0-7.5 14/18"R		3 5 8	
8.0						
9.0		Silty Clay, Trace Sand and Gravel (CL) - Brown - Hard	SS-5 8.5-10.0 10/18"R		4 7 7	
10.0						
11.0		Silty Clay, Trace Sand and Gravel (CL) - Grey - Very Stiff to Hard				
12.0			SS-6 11.0 -12.5 18/18"R		4 6 7	
13.0						
14.0			SS-7 13.5-15.0 18/18"R		3 7 9	
15.0						
16.0						
17.0						
18.0						
19.0			SS-8 18.5-20.0 18/18"R		4 8 10	
20.0						

Water Content
Blow Count
10 20 30 40 50
1 2 3 4 5
Pocket Penetrometer (TSF)
Unconfined Comp. Strength (TSF)

NOTES

qu = 2.48 TSF

End of Boring at 20-feet bgs.

Drilling Contractor: GSG Drilling
Drilling Method: 3 1/4" I.D. Hollow Stem Augers
Equipment: Diedrich D-50
Started: 3-Apr-09 Ended: 3-Apr-09

REMARKS
Borehole backfilled with cuttings upon completion.

WATER LEVEL (FT)
Water Encountered at 3.5'

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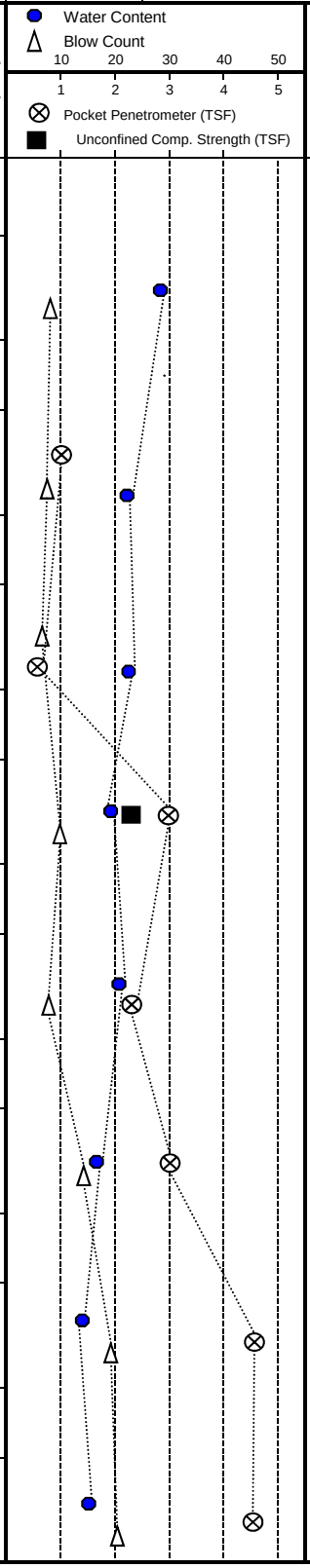
SHEET 1 OF 1

PROJECT: Brighton Park II

LOCATION: W. 48th Street & S. Rockwell Street
Chicago, Illinois

LOGGED BY: IM **Date:** 4/1/2009 **BORING NUMBER:** B-10 **DEPTH:** 20' **GROUND ELEVATION:** NA

DEPTH (FT)	STRATA	SOIL/ROCK DESCRIPTION	SAMPLE TYPE & NO. DEPTH (FT) RECOVERY (INCHES/LENGTH)	SAMPLE RECOVERY	BLOW COUNTS	Bulk Unit Weight (PCF)
0.0		FILL- Clay, Brick fragments, Slag, Gravel and Sand	AU-1 0 -1.0'			
1.0			SS-2 1.0-2.5 6/18"R		0 3 5	
2.0						
3.0						
4.0			SS-3 3.5-5.0 10/18"R		2 3 4	
5.0		Silty Clay, Trace Sand and Gravel (CL) - Brown to Grey -Stiff				
6.0						
7.0		Silty Clay, Trace Sand and Gravel (CL) - Grey - Soft to Hard	SS-4 6.0-7.5 10/18"R		2 2 2	
8.0						
9.0			SS-5 8.5-10.0 16/18"R		2 4 6	
10.0						
11.0			SS-6 11.0 -12.5 18/18"R		2 3 5	
12.0						
13.0						
14.0			SS-7 13.5-15.0 18/18"R		2 4 10	
15.0						
16.0			SS-8 16.0-17.5 18/18"R		4 7 12	
17.0						
18.0						
19.0			SS-9 18.5-20.0 18/18"R		4 8 12	
20.0						



NOTES

qu = 2.25 TSF

End of Boring at 20-feet bgs.

Drilling Contractor: GSG Drilling
Drilling Method: 3 1/4" I.D. Hollow Stem Augers
Equipment: Diedrich D-50
Started: 1-Apr-09 Ended: 1-Apr-09

REMARKS
Borehole backfilled with cuttings upon completion.

WATER LEVEL (FT)
▽ No Water Encountered

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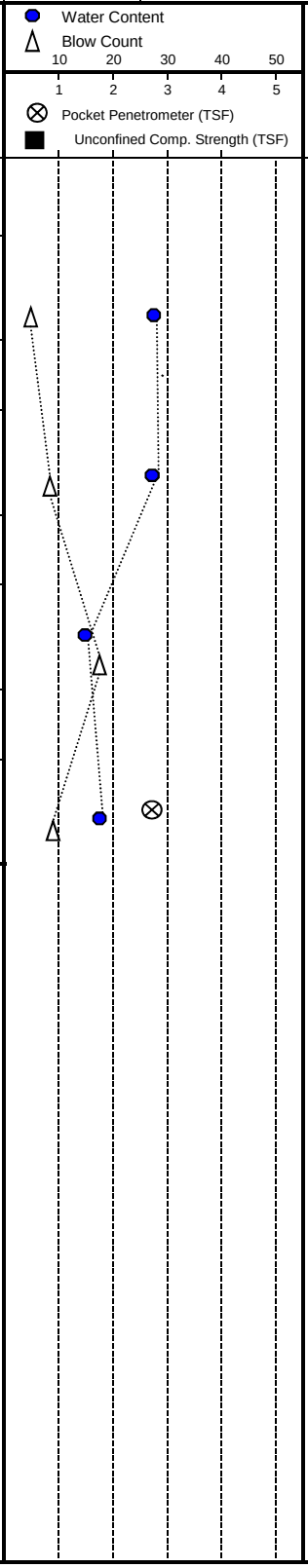
SHEET 1 OF 1

PROJECT: Brighton Park II

LOCATION: W. 48th Street & S. Rockwell Street
Chicago, Illinois

LOGGED BY: IM **Date:** 4/3/2009 **BORING NUMBER:** SB-1 **DEPTH:** 10' **GROUND ELEVATION:** NA

DEPTH (FT)	STRATA	SOIL/ROCK DESCRIPTION	SAMPLE TYPE & NO. DEPTH (FT) RECOVERY (INCHES/LENGTH)	SAMPLE RECOVERY	BLOW COUNTS	Bulk Unit Weight (PCF)
0.0		FILL- Clay, Brick fragments, Slag, Wood, Gravel and Sand	AU-1 0-1.0			
1.0			SS-2 1.0-2.5 8/18"R		2 2 3	
2.0						
3.0						
4.0			SS-3 3.5-5.0 12/18"R		1 3 5	
5.0						
6.0						
7.0			SS-4 6.0-7.5 2/18"R		10 10 8	
8.0						
9.0		Silty Clay, Trace Sand and Gravel (CL) - Grey - Very Stiff	SS-5 8.5-10.0 12/18"R		3 4 5	
10.0		**Boring terminated at 10.0' bgs**				
11.0						
12.0						
13.0						
14.0						
15.0						
16.0						
17.0						
18.0						
19.0						
20.0						



NOTES

Drilling Contractor: GSG Drilling
Drilling Method: 3 1/4" I.D. Hollow Stem Augers
Equipment: Diedrich D-50
Started: 3-Apr-09 Ended: 3-Apr-09

REMARKS
Borehole backfilled with cuttings upon completion. Cave in at 5'.

WATER LEVEL (FT)
▽ No water encountered

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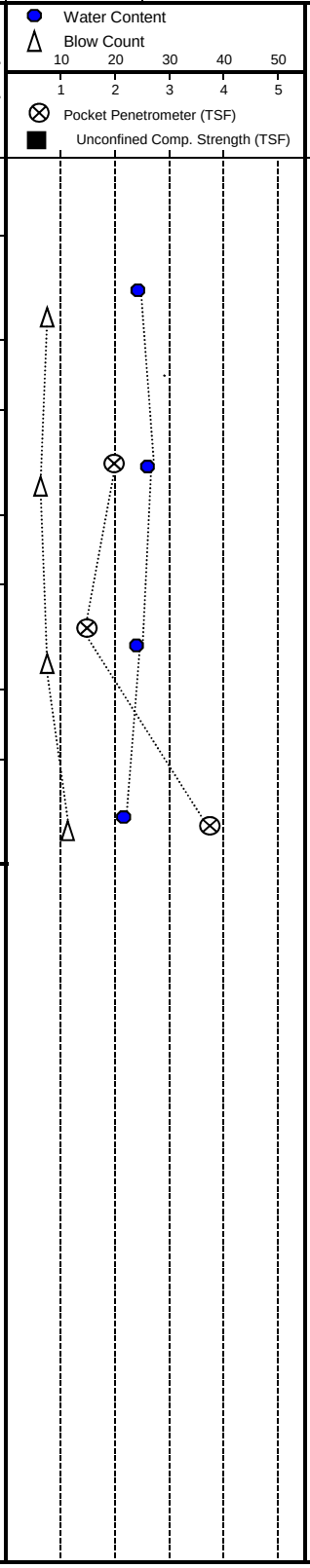
SHEET 1 OF 1

PROJECT: Brighton Park II

LOCATION: W. 48th Street & S. Rockwell Street
Chicago, Illinois

LOGGED BY: IM **Date:** 4/3/2009 **BORING NUMBER:** SB-2 **DEPTH:** 10' **GROUND ELEVATION:** NA

DEPTH (FT)	STRATA	SOIL/ROCK DESCRIPTION	SAMPLE TYPE & NO. DEPTH (FT) RECOVERY (INCHES/LENGTH)	SAMPLE RECOVERY	BLOW COUNTS	Bulk Unit Weight (PCF)
0.0		FILL- Clay, Brick fragments, Slag, Wood, Gravel and Sand	AU-1 0-1.0			
1.0			SS-2 1.0-2.5 16/18"R		3 3 5	
2.0						
3.0						
4.0		Silty Clay, Trace Sand and Gravel (CL) - Brown to Grey - Stiff to Very Stiff	SS-3 3.5-5.0 14/18"R		2 2 4	
5.0						
6.0			SS-4 6.0-7.5 12/18"R		2 2 5	
7.0						
8.0						
9.0			SS-5 8.5-10.0 14/18"R		2 4 7	
10.0		**Boring terminated at 10.0' bgs**				
11.0						
12.0						
13.0						
14.0						
15.0						
16.0						
17.0						
18.0						
19.0						
20.0						



NOTES

Drilling Contractor: GSG Drilling
Drilling Method: 3 1/4" I.D. Hollow Stem Augers
Equipment: Diedrich D-50
Started: 3-Apr-09 Ended: 3-Apr-09

REMARKS
Borehole backfilled with cuttings upon completion.

WATER LEVEL (FT)
▽ No water encountered

GSG CONSULTANTS, INC.
855 West Adams, Suite 200
Chicago, Illinois 60607
tel: 312.733.6262 • fax: 312.733.5612

CLIENT: Public Building Commission

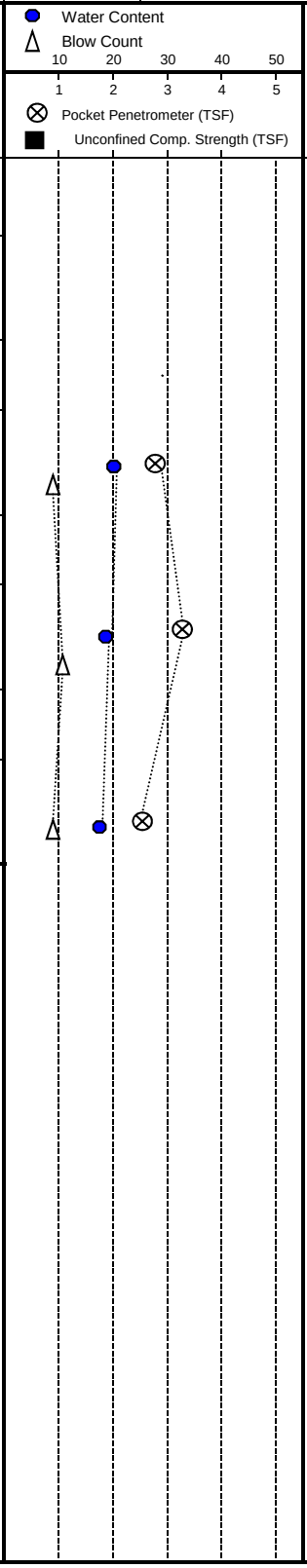
SHEET 1 OF 1

PROJECT: Brighton Park II

LOCATION: W. 48th Street & S. Rockwell Street
Chicago, Illinois

LOGGED BY: IM **Date:** 4/1/2009 **BORING NUMBER:** SB-3 **DEPTH:** 10' **GROUND ELEVATION:** NA

DEPTH (FT)	STRATA	SOIL/ROCK DESCRIPTION	SAMPLE TYPE & NO. DEPTH (FT) RECOVERY (INCHES/LENGTH)	SAMPLE RECOVERY	BLOW COUNTS	Bulk Unit Weight (PCF)
0.0		FILL- Clay, Brick fragments, Slag, Gravel and Sand	AU-1 0-1.0			
1.0			SS-2 1.0-2.5 0/18"R		50 - -	
2.0						
3.0						
4.0		Silty Clay, Trace Sand and Gravel (CL) - Brown - Very Stiff	SS-3 3.5-5.0 12/18"R		2 4 5	
5.0						
6.0						
7.0			SS-4 6.0-7.5 16/18"R		1 3 7	
8.0						
9.0		Silty Clay, Trace Sand and Gravel (CL) - Grey - Very Stiff	SS-5 8.5-10.0 18/18"R		2 4 5	
10.0		**Boring terminated at 10.0' bgs**				
11.0						
12.0						
13.0						
14.0						
15.0						
16.0						
17.0						
18.0						
19.0						
20.0						



NOTES

Drilling Contractor: GSG Drilling
Drilling Method: 3 1/4" I.D. Hollow Stem Augers
Equipment: Diedrich D-50
Started: 1-Apr-09 Ended: 1-Apr-09

REMARKS
Borehole backfilled with cuttings upon completion.

WATER LEVEL (FT)
▽ No water encountered

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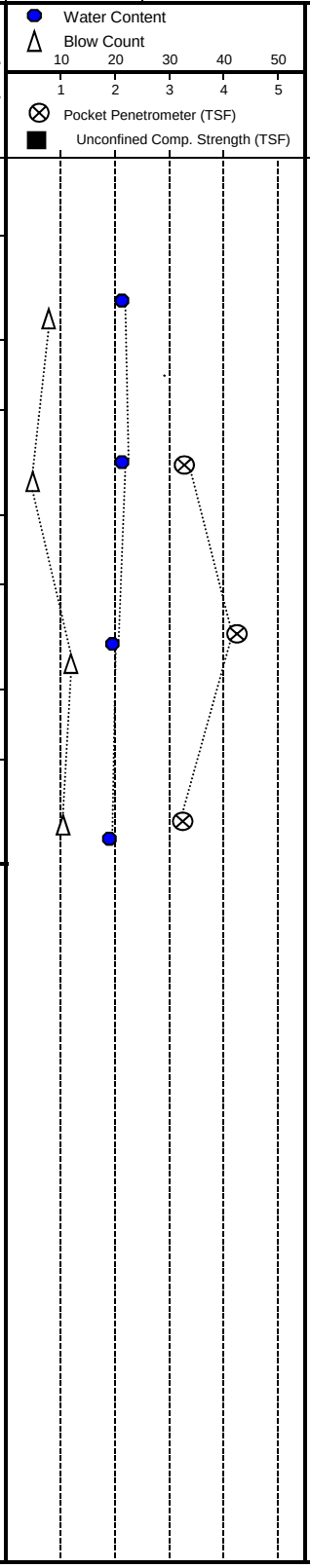
SHEET 1 OF 1

PROJECT: Brighton Park II

LOCATION: W. 48th Street & S. Rockwell Street
Chicago, Illinois

LOGGED BY: IM **Date:** 4/3/2009 **BORING NUMBER:** SB-4 **DEPTH:** 10' **GROUND ELEVATION:** NA

DEPTH (FT)	STRATA	SOIL/ROCK DESCRIPTION	SAMPLE TYPE & NO. DEPTH (FT) RECOVERY (INCHES/LENGTH)	SAMPLE RECOVERY	BLOW COUNTS	Bulk Unit Weight (PCF)
0.0		FILL- Clay, Brick fragments, Slag, Gravel and Sand	AU-1 0-1.0			
1.0			SS-2 1.0-2.5 12/18"R		2 3 5	
2.0						
3.0						
4.0			SS-3 3.5-5.0 14/18"R		2 2 3	
5.0		Silty Clay, Trace Sand and Gravel (CL) - Brown - Very Stiff to Hard				
6.0						
7.0			SS-4 6.0-7.5 18/18"R		2 5 7	
8.0						
9.0		Silty Clay, Trace Sand and Gravel (CL) - Grey - Very Stiff	SS-5 8.5-10.0 18/18"R		3 4 6	
10.0		**Boring terminated at 10.0' bgs**				
11.0						
12.0						
13.0						
14.0						
15.0						
16.0						
17.0						
18.0						
19.0						
20.0						



NOTES

Drilling Contractor: GSG Drilling
Drilling Method: 3 1/4" I.D. Hollow Stem Augers
Equipment: Diedrich D-50
Started: 3-Apr-09 Ended: 3-Apr-09

REMARKS
Borehole backfilled with cuttings upon completion. Cave in at 4'.

WATER LEVEL (FT)
▽ No water encountered

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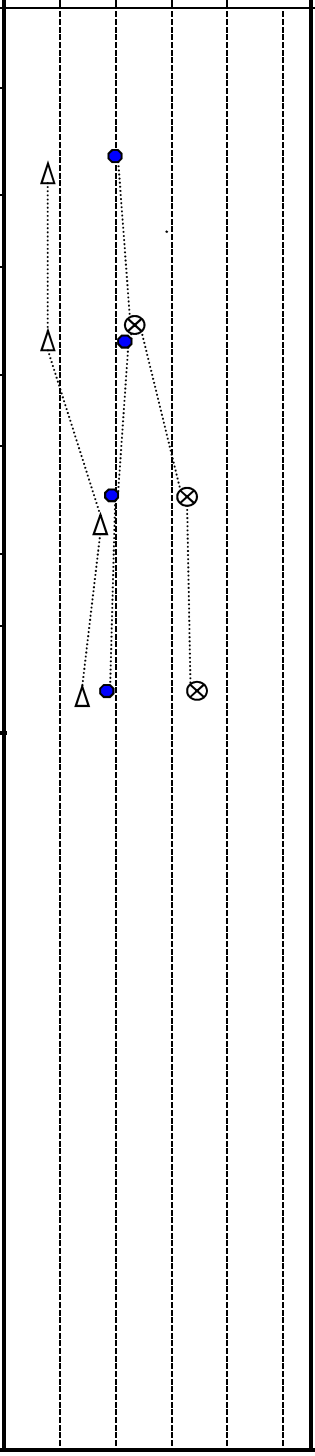
SHEET 1 OF 1

PROJECT: Brighton Park II

LOCATION: W. 48th Street & S. Rockwell Street
Chicago, Illinois

LOGGED BY: IM **Date:** 4/3/2009 **BORING NUMBER:** SB-5 **DEPTH:** 10' **GROUND ELEVATION:** NA

DEPTH (FT)	STRATA	SOIL/ROCK DESCRIPTION	SAMPLE TYPE & NO. DEPTH (FT) RECOVERY (INCHES/LENGTH)	SAMPLE RECOVERY	BLOW COUNTS	Bulk Unit Weight (PCF)	NOTES
0.0		FILL- Clay, Brick fragments, Slag, Organics, Gravel and Sand	AU-1 0-1.0				
1.0			SS-2 1.0-2.5 8/18"R		6 3 5		
2.0							
3.0							
4.0			SS-3 3.5-5.0 14/18"R		2 3 5		
5.0		Silty Clay, Trace Sand and Gravel (CL) - Brown - Very Stiff					
6.0							
7.0			SS-4 6.0-7.5 18/18"R		4 8 9		
8.0		Silty Clay, Trace Sand and Gravel (CL) - Grey - Very Stiff					
9.0			SS-5 8.5-10.0 18/18"R		3 6 8		
10.0		**Boring terminated at 10.0' bgs**					
11.0							
12.0							
13.0							
14.0							
15.0							
16.0							
17.0							
18.0							
19.0							
20.0							



Drilling Contractor: GSG Drilling
Drilling Method: 3 1/4" I.D. Hollow Stem Augers
Equipment: Diedrich D-50
Started: 3-Apr-09 Ended: 3-Apr-09

REMARKS
Borehole backfilled with cuttings upon completion. Cave in at 3'.

WATER LEVEL (FT)
▽ No water encountered

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SHEET 1 OF 1

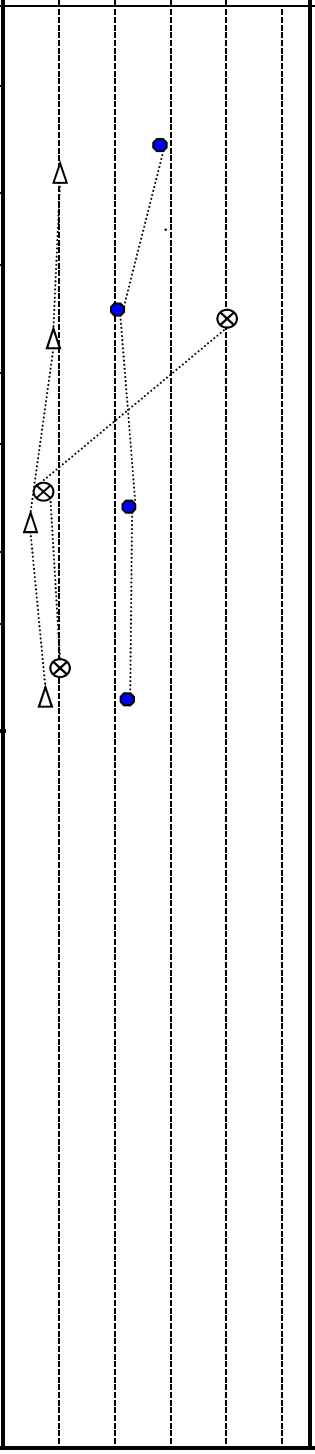
PROJECT: Brighton Park II

LOCATION: W. 48th Street & S. Rockwell Street
Chicago, Illinois

LOGGED BY: IM **Date:** 4/2/2009 **BORING NUMBER:** SB-6 **DEPTH:** 10' **GROUND ELEVATION:** NA

DEPTH (FT)	STRATA	SOIL/ROCK DESCRIPTION	SAMPLE TYPE & NO. DEPTH (FT) RECOVERY (INCHES/LENGTH)	SAMPLE RECOVERY	BLOW COUNTS	Bulk Unit Weight (PCF)
0.0		FILL- Clay, Brick fragments, Slag, Gravel and Sand	AU-1 0-1.0			
1.0			SS-2 1.0-2.5 12/18"R		7 5 5	
2.0						
3.0						
4.0			SS-3 3.5-5.0 10/18"R		2 4 5	
5.0		Silty Clay, Trace Sand and Gravel (CL) - Brown - Very Stiff to Medium Stiff				
6.0						
7.0			SS-4 6.0-7.5 12/18"R		1 2 3	
8.0						
9.0		Silty Clay, Trace Sand and Gravel (CL) - Grey - Medium Stiff	SS-5 8.5-10.0 18/18"R		0 2 5	
10.0		**Boring terminated at 10.0' bgs**				
11.0						
12.0						
13.0						
14.0						
15.0						
16.0						
17.0						
18.0						
19.0						
20.0						

Water Content
Blow Count
10 20 30 40 50
1 2 3 4 5
Pocket Penetrometer (TSF)
Unconfined Comp. Strength (TSF)



NOTES

Drilling Contractor: GSG Drilling
Drilling Method: 3 1/4" I.D. Hollow Stem Augers
Equipment: Diedrich D-50
Started: 2-Apr-09 Ended: 2-Apr-09

REMARKS
Borehole backfilled with cuttings upon completion. Cave in at 3'.

WATER LEVEL (FT)
▽ No water encountered

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CLIENT: Public Building Commission

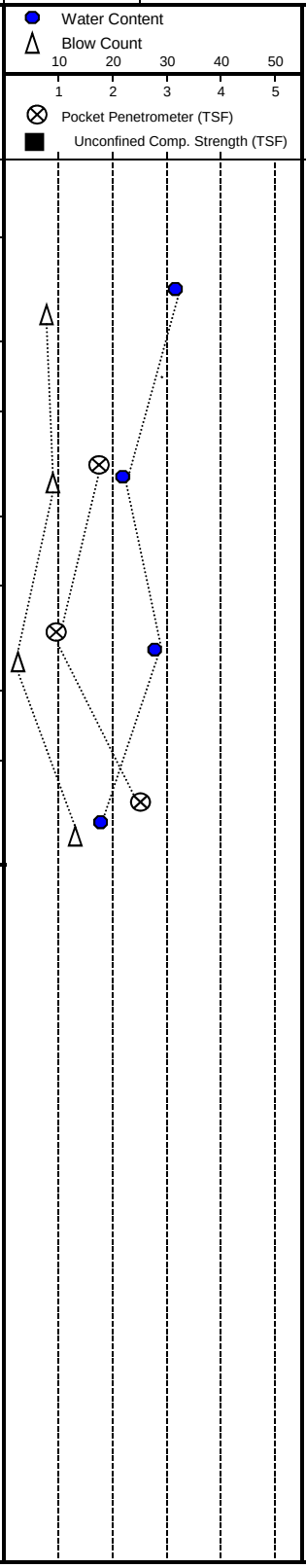
SHEET 1 OF 1

PROJECT: Brighton Park II

LOCATION: W. 48th Street & S. Rockwell Street
Chicago, Illinois

LOGGED BY: IM **Date:** 4/1/2009 **BORING NUMBER:** SB-7 **DEPTH:** 10' **GROUND ELEVATION:** NA

DEPTH (FT)	STRATA	SOIL/ROCK DESCRIPTION	SAMPLE TYPE & NO. DEPTH (FT) RECOVERY (INCHES/LENGTH)	SAMPLE RECOVERY	BLOW COUNTS	Bulk Unit Weight (PCF)	NOTES
0.0		FILL- Clay, Brick fragments, Slag, Gravel and Sand	AU-1 0-1.0				
1.0			SS-2 1.0-2.5 8/18"R		4 2 5		
2.0							
3.0		Silty Clay, Trace Sand and Gravel (CL) - Brown to Grey - Stiff to Very Stiff					
4.0			SS-3 3.5-5.0 10/18"R		2 4 5		
5.0							
6.0			SS-4 6.0-7.5 10/18"R		0 1 2		
7.0							
8.0							
9.0			SS-5 8.5-10.0 14/18"R		3 5 8		
10.0		**Boring terminated at 10.0' bgs**					
11.0							
12.0							
13.0							
14.0							
15.0							
16.0							
17.0							
18.0							
19.0							
20.0							



Drilling Contractor: GSG Drilling
Drilling Method: 3 1/4" I.D. Hollow Stem Augers
Equipment: Diedrich D-50
Started: 1-Apr-09 Ended: 1-Apr-09

REMARKS
Borehole backfilled with cuttings upon completion.

WATER LEVEL (FT)
Water Encountered at 8.5'

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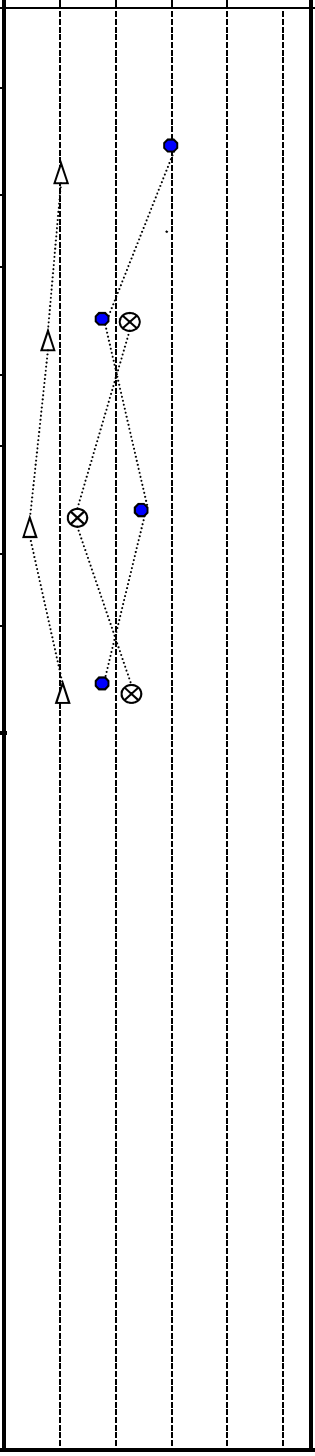
SHEET 1 OF 1

PROJECT: Brighton Park II

LOCATION: W. 48th Street & S. Rockwell Street
Chicago, Illinois

LOGGED BY: IM **Date:** 4/1/2009 **BORING NUMBER:** SB-8 **DEPTH:** 10' **GROUND ELEVATION:** NA

DEPTH (FT)	STRATA	SOIL/ROCK DESCRIPTION	SAMPLE TYPE & NO. DEPTH (FT) RECOVERY (INCHES/LENGTH)	SAMPLE RECOVERY	BLOW COUNTS	Bulk Unit Weight (PCF)
0.0		FILL- Clay, Brick fragments, Slag, Gravel and Sand	AU-1 0-1.0			
1.0			SS-2 1.0-2.5 10/18"R		4 4 6	
2.0						
3.0						
4.0			SS-3 3.5-5.0 10/18"R		2 4 4	
5.0		Silty Clay, Trace Sand and Gravel (CL) - Brown - Very Stiff to Stiff				
6.0						
7.0			SS-4 6.0-7.5 12/18"R		1 2 3	
8.0						
9.0		Silty Clay, Trace Sand and Gravel (CL) - Grey - Very Stiff	SS-5 8.5-10.0 18/18"R		2 3 7	
10.0		**Boring terminated at 10.0' bgs**				
11.0						
12.0						
13.0						
14.0						
15.0						
16.0						
17.0						
18.0						
19.0						
20.0						



NOTES

Drilling Contractor: GSG Drilling
Drilling Method: 3 1/4" I.D. Hollow Stem Augers
Equipment: Diedrich D-50
Started: 1-Apr-09 Ended: 1-Apr-09

REMARKS
Borehole backfilled with cuttings upon completion. Boring offset 15' south.

WATER LEVEL (FT)
▽ No water encountered

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CLIENT: Public Building Commission

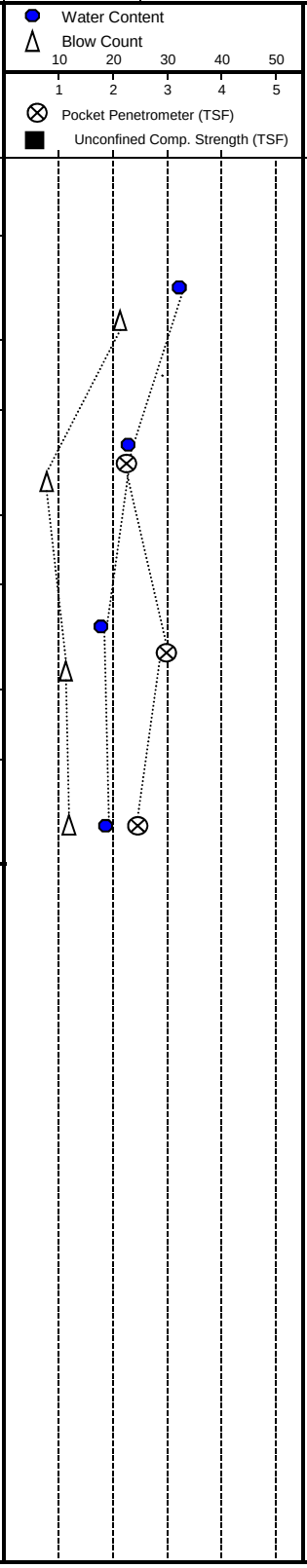
SHEET 1 OF 1

PROJECT: Brighton Park II

LOCATION: W. 48th Street & S. Rockwell Street
Chicago, Illinois

LOGGED BY: IM **Date:** 4/1/2009 **BORING NUMBER:** SB-9 **DEPTH:** 10' **GROUND ELEVATION:** NA

DEPTH (FT)	STRATA	SOIL/ROCK DESCRIPTION	SAMPLE TYPE & NO. DEPTH (FT) RECOVERY (INCHES/LENGTH)	SAMPLE RECOVERY	BLOW COUNTS	Bulk Unit Weight (PCF)
0.0		FILL- Clay, Brick fragments, Slag, Gravel and Sand	AU-1 0-1.0			
1.0			SS-2 1.0-2.5 10/18"R		11 14 7	
2.0						
3.0						
4.0			SS-3 3.5-5.0 10/18"R		3 4 4	
5.0		Silty Clay, Trace Sand and Gravel (CL) - Brown - Very Stiff				
6.0						
7.0			SS-4 6.0-7.5 12/18"R		3 4 7	
8.0						
9.0		Silty Clay, Trace Sand and Gravel (CL) - Grey - Very Stiff	SS-5 8.5-10.0 18/18"R		5 5 6	
10.0		**Boring terminated at 10.0' bgs**				
11.0						
12.0						
13.0						
14.0						
15.0						
16.0						
17.0						
18.0						
19.0						
20.0						



NOTES

Drilling Contractor: GSG Drilling
Drilling Method: 3 1/4" I.D. Hollow Stem Augers
Equipment: Diedrich D-50
Started: 1-Apr-09 Ended: 1-Apr-09

REMARKS
Borehole backfilled with cuttings upon completion. Cave in at 5'

WATER LEVEL (FT)
Water Encountered at 6'

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CLIENT: Public Building Commission

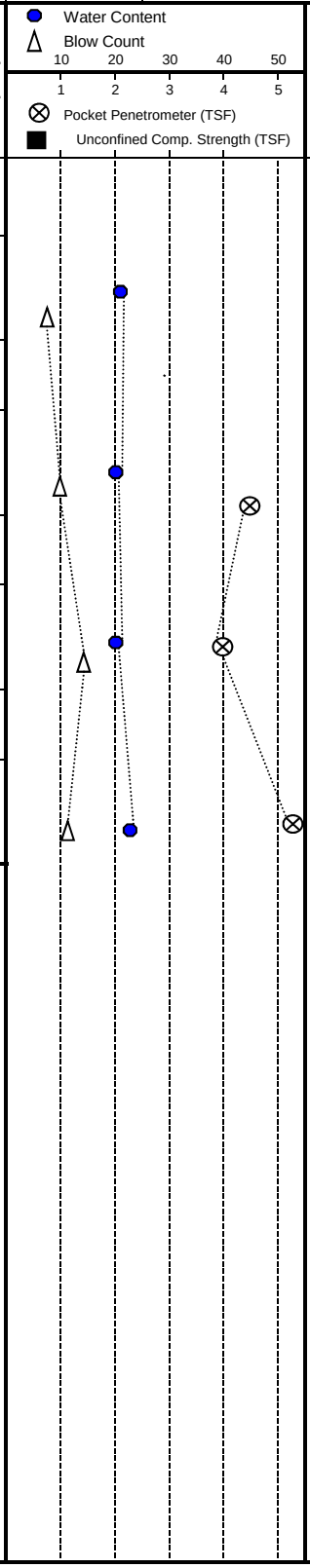
SHEET 1 OF 1

PROJECT: Brighton Park II

LOCATION: W. 48th Street & S. Rockwell Street
Chicago, Illinois

LOGGED BY: IM **Date:** 4/1/2009 **BORING NUMBER:** SB-10 **DEPTH:** 10' **GROUND ELEVATION:** NA

DEPTH (FT)	STRATA	SOIL/ROCK DESCRIPTION	SAMPLE TYPE & NO. DEPTH (FT) RECOVERY (INCHES/LENGTH)	SAMPLE RECOVERY	BLOW COUNTS	Bulk Unit Weight (PCF)
0.0		FILL- Clay, Brick fragments, Slag, Wood, Gravel and Sand	AU-1 0-1.0			
1.0			SS-2 1.0-2.5 10/18"R		3 3 5	
2.0						
3.0						
4.0			SS-3 3.5-5.0 18/18"R		2 3 7	
5.0		Silty Clay, Trace Sand and Gravel (CL) - Brown - Hard				
6.0						
7.0			SS-4 6.0-7.5 18/18"R		4 6 8	
8.0						
9.0			SS-5 8.5-10.0 18/18"R		2 3 8	
10.0		**Boring terminated at 10.0' bgs**				
11.0						
12.0						
13.0						
14.0						
15.0						
16.0						
17.0						
18.0						
19.0						
20.0						



NOTES

Drilling Contractor: GSG Drilling
Drilling Method: 3 1/4" I.D. Hollow Stem Augers
Equipment: Diedrich D-50
Started: 1-Apr-09 Ended: 1-Apr-09

REMARKS
Borehole backfilled with cuttings upon completion.

WATER LEVEL (FT)
▽ No water encountered

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Unified Soil Classification

Soil Classification is based on the Unified Soil Classification System and ASTM Designations D-2487 and D-2488. Coarse Grained Soils have more than 50% of their dry weight retained on a #200 sieve; they are described as: clays, if they are plastic, and silts if they are slightly Plastic or non-plastic. Major constituents may be added as modifiers and minor constituents may be added according to the basis of their relative in-place density and fine grained soils on the basis of their consistency. Example: Lean clay with sand, trace gravel, stiff (CL); silty sand, trace gravel, medium dense (SM).

Drilling & Sampling Symbols

SS : Split Spoon
ST : Thin-Walled Tube
HA: Hand Auger
AU: Auger Sample
HS: Hand Sample

Water Level (ft)
▽ While Drilling
▽ After Drilling
▼ 24-hour

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

Major Divisions			Group Symbols	Typical Names
Coarse Grained Soils (More than Half of material is larger than No. 200 sieve size)	Gravels (More than hall of coarse fraction is larger than No. 4 sieve size)	Clean Gravels (Little or no fines)	GW	Well graded gravels, gravel-sand mixtures, little or no fines
			GP	Poorly graded gravels, gravel-sand mixtures, little or no fines
		Gravels with fines (Appreciable amount of fines)	GM d / u	Silty gravels, gravel-sand-clay mixtures
			GC	Clayey gravels, gravel-sand-clay mixtures
	Sands (More than hall of coarse fraction is smaller than No. 4 sieve size)	Clean Sands (Little or no fines)	SW	Well graded sands, gravelly sands, little or no fines
			SP	Poorly graded sands, gravelly sands, little or no fines
		Sands with fines (Appreciable amount of fines)	SM d / u	Silty sands, sand-silt mixtures
			SC	Clayey sands, sand-clay mixtures
Fine Grained Soils More than half of material is smaller than No. 200 sieve size)	Silts and Clays (liquid limit less than 50)		ML	Inorganic silts and very fine sands, rock flour, silty or claye fine sands or clayey silts with slight plasticity
			CL	Inorganic clay of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays
			OL	Organic silts and organic silty clays of low plasticity
	Silts and Clays (liquid limit greater than 50)		MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts
			CH	Inorganic clays of high plasticity, fat clays
			OH	Organic clays of medium to high plasticity, organic silts
	Highly Organic Soils		Pt	Peat and other highly organic soils

Consistency of Cohesive Soil

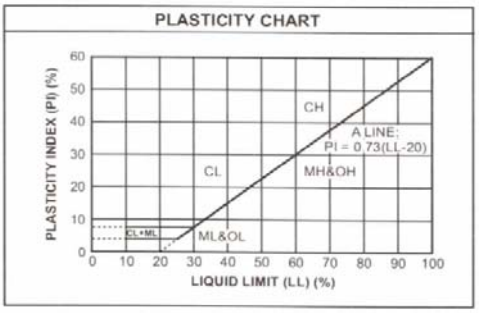
Unconfined Compressive strength, Qu, tsf			N-Blows/ft.		Consistency
	<	0.25	Below 2	<	Very Soft
0.25	-	0.50	2-4	-	Soft
0.50	-	1.0	4-8	-	Medium Stiff
1.0	-	2.0	8-15	-	Stiff
2.0	-	4.0	15-30	-	Very Stiff
4.0	-	8.0	30-50	-	Hard
>	-	8.0	> 50	-	Very Hard

Relative Density of Coarse-Grained Soils

N-Blows/ft.	Relative Density
0-3	Very Loose
4-10	Loose
11-29	Medium Dense
30-49	Dense
50-80	Very Dense
>80	Extremely Dense

Description Term(s) of Components Present in Sample

Trace < 10% Little 10-19%
Some 20-34% And 35-50%



APPENDIX B

INFILTRATION TEST RESULTS

INFILTRATION TEST RESULTS – IT-1

Elapsed Time (minutes)	Change in Time (T) (minutes)	Water Decline (Y) (feet)	Cumulative Feet (cubic feet)
0	0	0.00	0.0000
15	15	0.05	0.0393
45	30	0.05	0.0785
75	30	0.04	0.1099
105	30	0.05	0.1492
135	30	0.06	0.1963
165	30	0.10	0.2748
195	30	0.10	0.3533
225	30	0.03	0.3768
255	30	0.03	0.4004
285	30	0.03	0.4239
315	30	0.03	0.4475
345	30	0.03	0.4710
	Totals:	0.60	0.471

$i_w = i\pi^2/\pi(r+x)^{2;}$ $\quad i = y/\Delta t$

$L = y_t\pi r^2/n\pi(r+x)^{2;}$ $\quad K = i_w L/(z+L)$

Where:

Pi =	3.141592654		
r =	0.5	feet	radius of 12-inch diameter casing
n =	0.2		assumed in-situ soil permeability (use values of 0.2 to 0.3 typical)
i_n =	0.000017	feet per second	
z =	1.66	feet	20-24-inches, average ht of water column
Y_t =	0.60	feet	
i_w =	0.0000074	feet per second	
L =	1.33	feet	
K =	0.0000033	feet per second	
	0.14	in/hr	

APPENDIX C

LABORATORY TEST DATA

GSG CONSULTANTS, INC.
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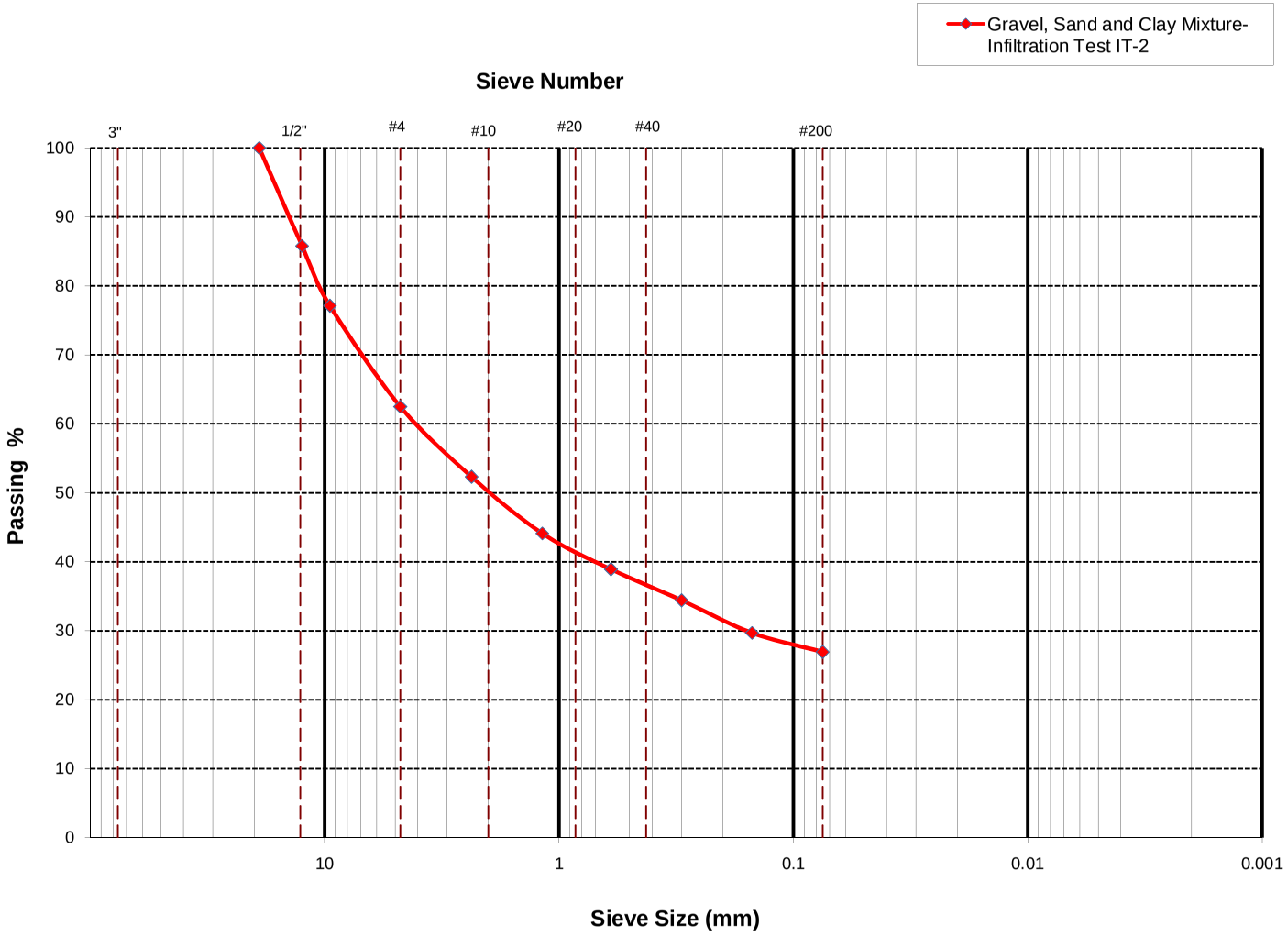
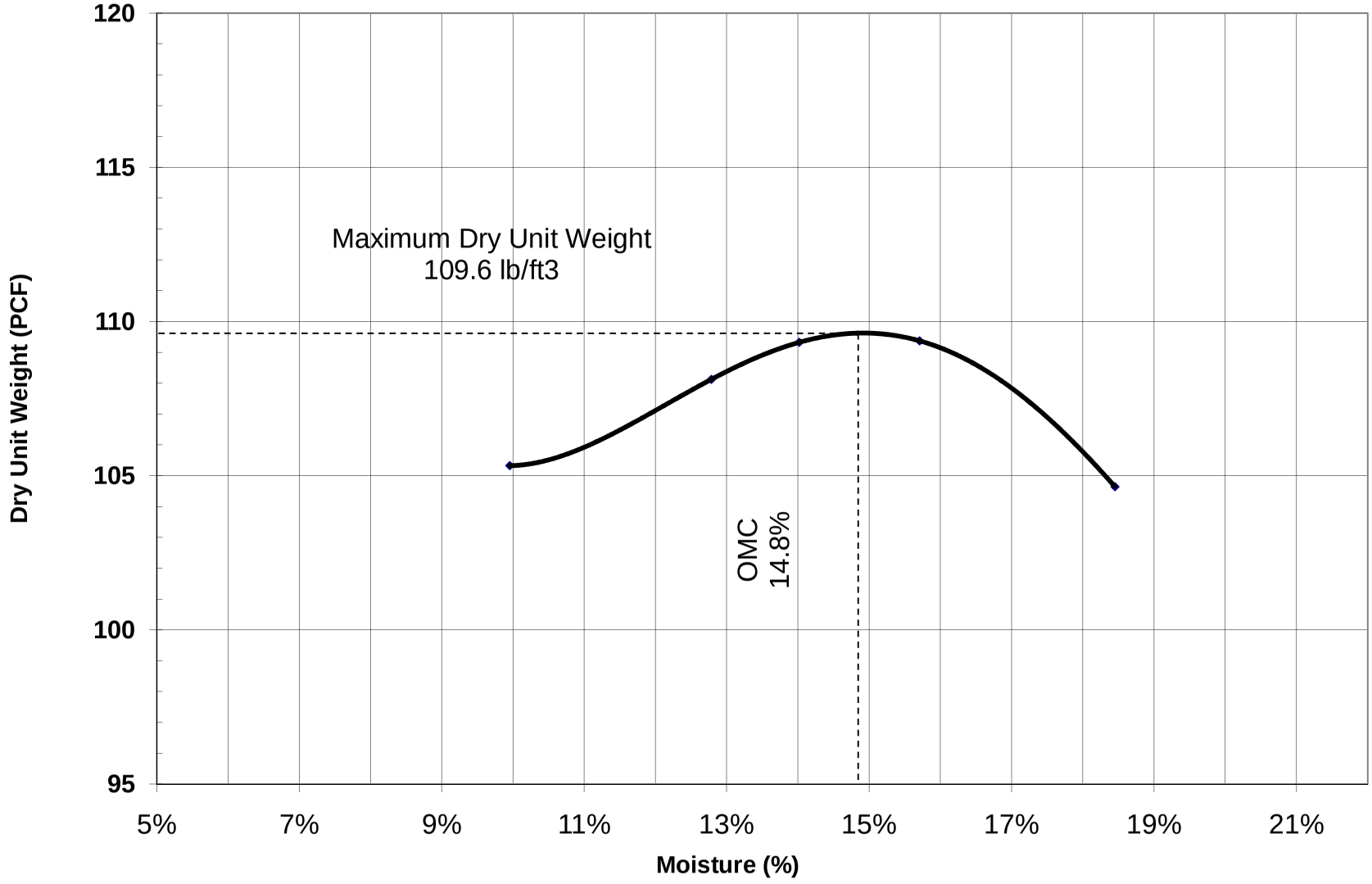
Brighton Park II
Sieve Analysis Results



Gravel		Sand		Silt or Clay
Coarse	Fine	Coarse to Medium	Fine	

Moisture-Density Relations
Standard Proctor Test ASTM D 698
FILL: Clay, Brick Fragments, Slag, Gravel and Sand - Near Surface
Source: Brighton Park II - Building Area



GSG Material Testing.com

Unconfined Compression Test Report (ASTM D2166)

Date

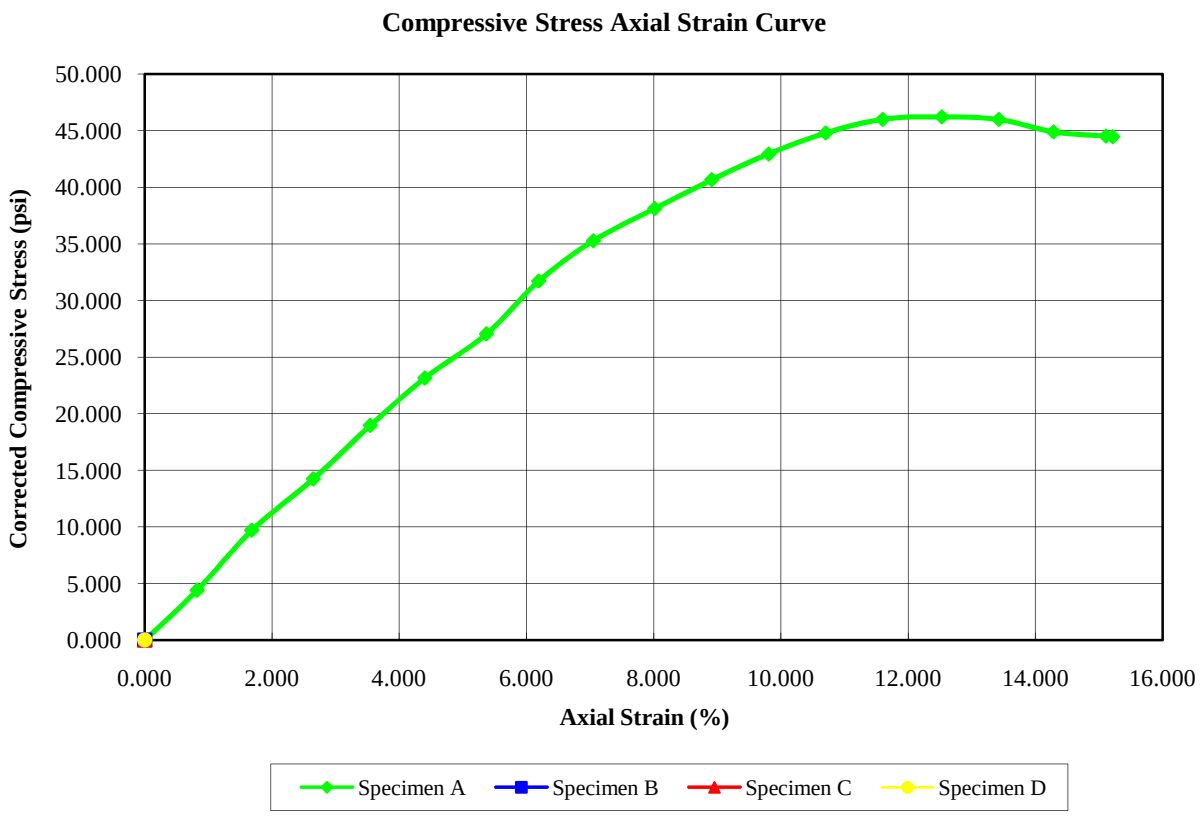
Checked By

Date

Computed By

Date

Tested By



Before Test	Specimen A	B	C	D
Water Content (%)	16.28			
Dry Density (pcf)	111.608			
Saturation (%)	89.46			
Void Ratio	0.48			
Diameter (in)	1.378			
Height (in)	2.793			
Test Data	**A**	**B**	**C**	**D**
Unconfined Strength (psi)	46.216			
Undrained Shear Strength (tsf)	1.664			
Undrained Shear Strength (psi)	23.108			
Rate of Strain (in/min)	0.500000			
Description				

Project Information		Specimen Description	
Project Num		Specimen A	Brown silty clay, trace sand and gravel
Project	Brighton Park II	Specimen B	
Sampling Date	4/6/2009	Specimen C	
Boring #	B-1	Specimen D	
Sample #	S-4	**Test Variables**	
Depth (ft)	6-7.5	Specific Gravity	2.65
Client	GSG Consultant	Liquid Limit:	
		Plastic Limit:	
Remarks	3.328 TSF		

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Unconfined Compression Test Report (ASTM D2166)

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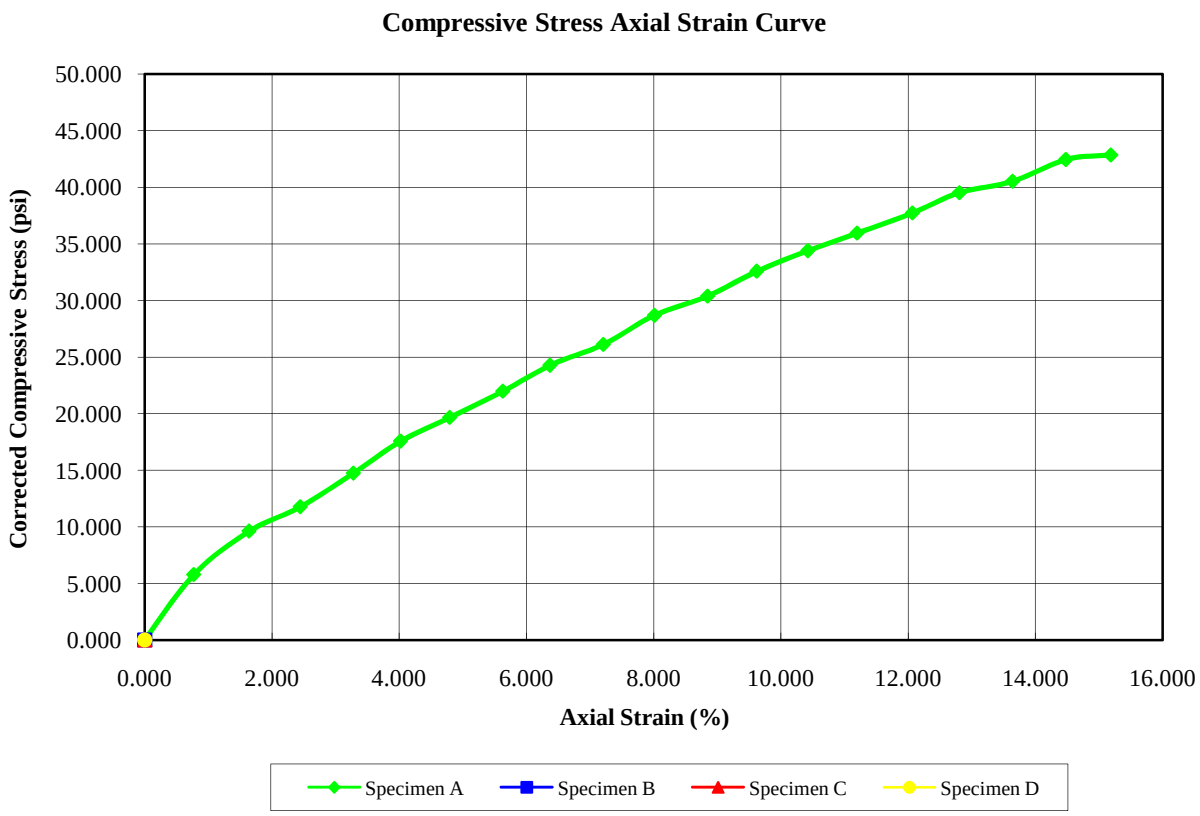

Before Test	Specimen A	B	C	D
Water Content (%)	20.12			
Dry Density (pcf)	111.457			
Saturation (%)	110.10			
Void Ratio	0.48			
Diameter (in)	1.355			
Height (in)	3.109			
Test Data	**A**	**B**	**C**	**D**
Unconfined Strength (psi)	42.860			
Undrained Shear Strength (tsf)	1.543			
Undrained Shear Strength (psi)	21.430			
Rate of Strain (in/min)	0.500000			
Description				

Project Information		Specimen Description	
Project Num		Specimen A	Gray Silty clay trace sand & gravel
Project	Brighton Park II	Specimen B	
Sampling Date	4-6-2009	Specimen C	
Boring #	B-2	Specimen D	
Sample #	S-5	**Test Variables**	
Depth (ft)	8.5-10	Specific Gravity	2.65
Client	GSG Consultant	Liquid Limit:	
		Plastic Limit:	
Remarks	3.085 TSF		

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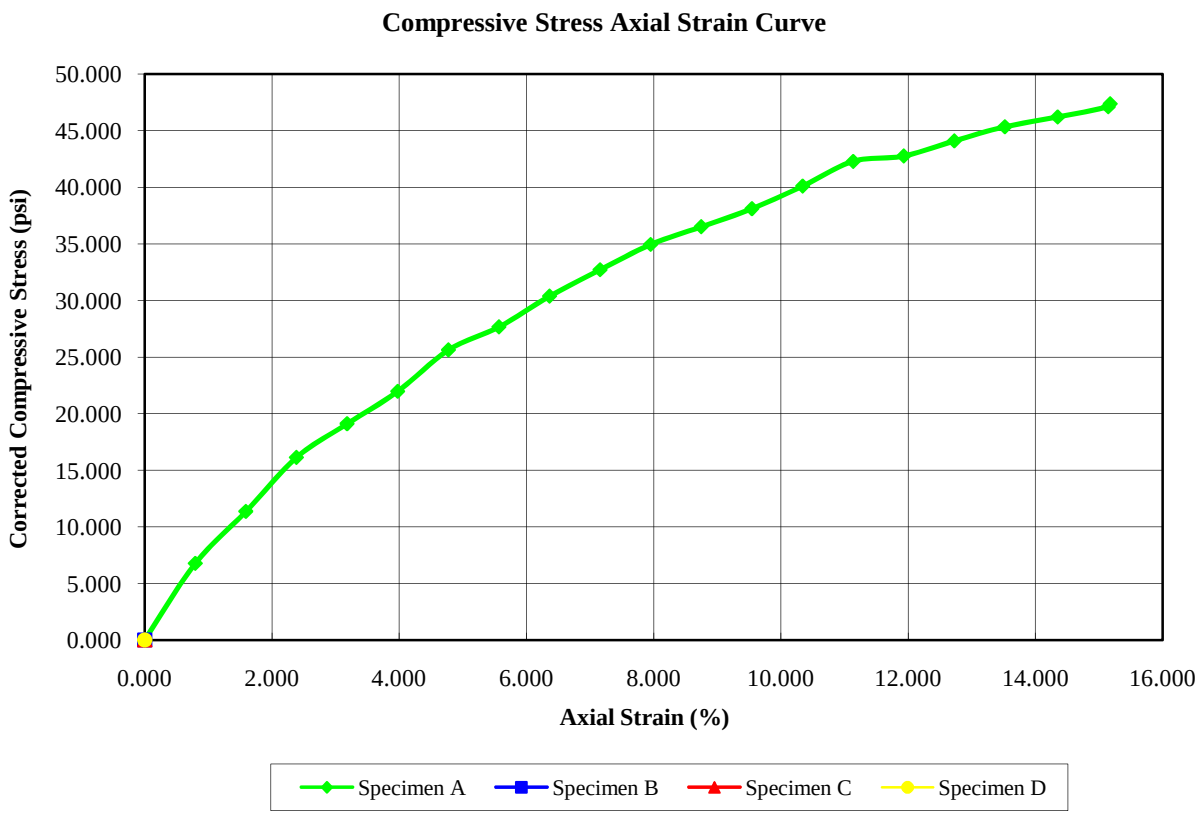

Before Test	Specimen A	B	C	D
Water Content (%)	22.65			
Dry Density (pcf)	109.344			
Saturation (%)	117.01			
Void Ratio	0.51			
Diameter (in)	1.366			
Height (in)	3.143			
Test Data	**A**	**B**	**C**	**D**
Unconfined Strength (psi)	47.366			
Undrained Shear Strength (tsf)	1.705			
Undrained Shear Strength (psi)	23.683			
Rate of Strain (in/min)	0.500000			
Description				

Project Information		Specimen Description	
Project Num		Specimen A	Brown silty clay, trace sand and gravel
Project	GSG Consultant	Specimen B	
Sampling Date	4/6/2009	Specimen C	
Boring #	B-3	Specimen D	
Sample #	S-5	**Test Variables**	
Depth (ft)	8.5-10	Specific Gravity	2.65
Client	GSG Consultant	Liquid Limit:	
		Plastic Limit:	

Remarks 3.41 TSF

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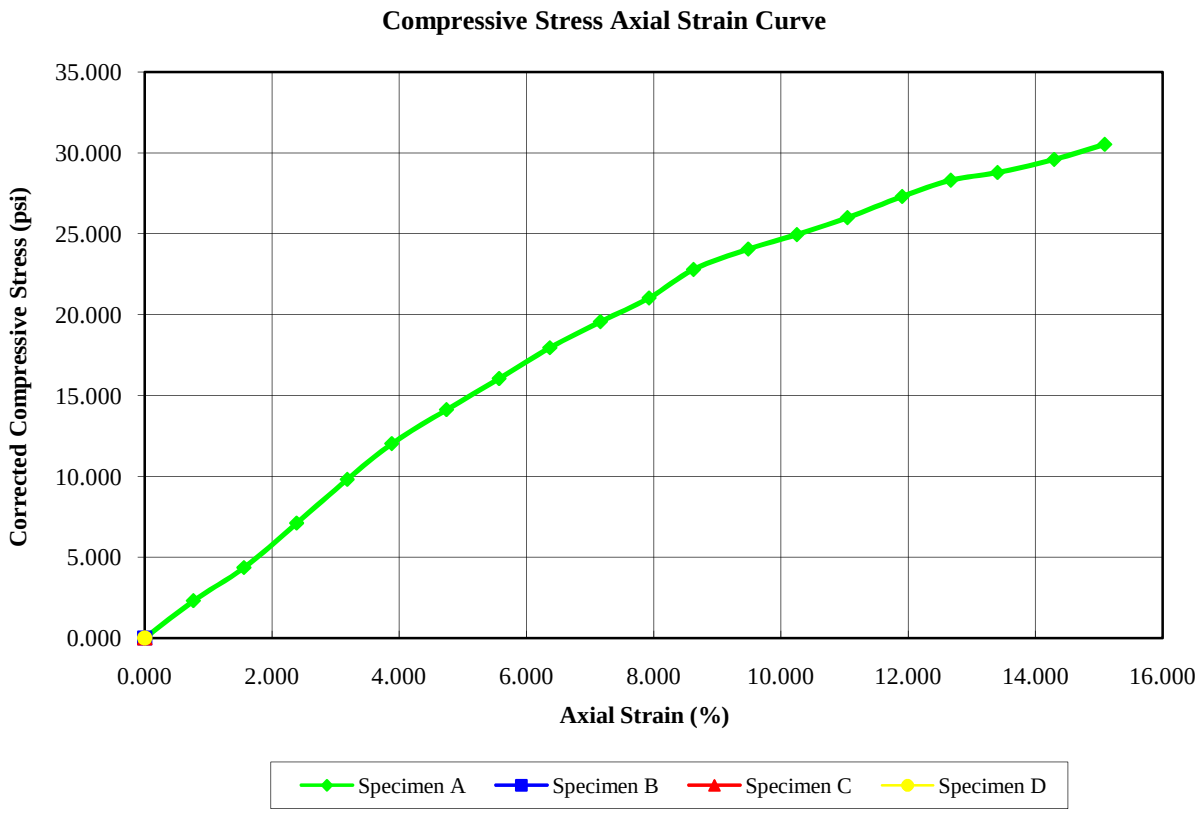

Before Test	Specimen A	B	C	D
Water Content (%)	20.51			
Dry Density (pcf)	111.902			
Saturation (%)	113.62			
Void Ratio	0.48			
Diameter (in)	1.369			
Height (in)	3.141			
Test Data	**A**	**B**	**C**	**D**
Unconfined Strength (psi)	30.528			
Undrained Shear Strength (tsf)	1.099			
Undrained Shear Strength (psi)	15.264			
Rate of Strain (in/min)	0.500000			
Description				

Project Information		Specimen Description	
Project Num		Specimen A	Gray silty clay, trace sand and gravel
Project	Brighton Park II	Specimen B	
Sampling Date	4/6/2009	Specimen C	
Boring #	B-4	Specimen D	
Sample #	S-6	**Test Variables**	
Depth (ft)	11-12.5	Specific Gravity	2.65
Client	GSG Consultant	Liquid Limit:	
		Plastic Limit:	

Remarks 2.198 TSF

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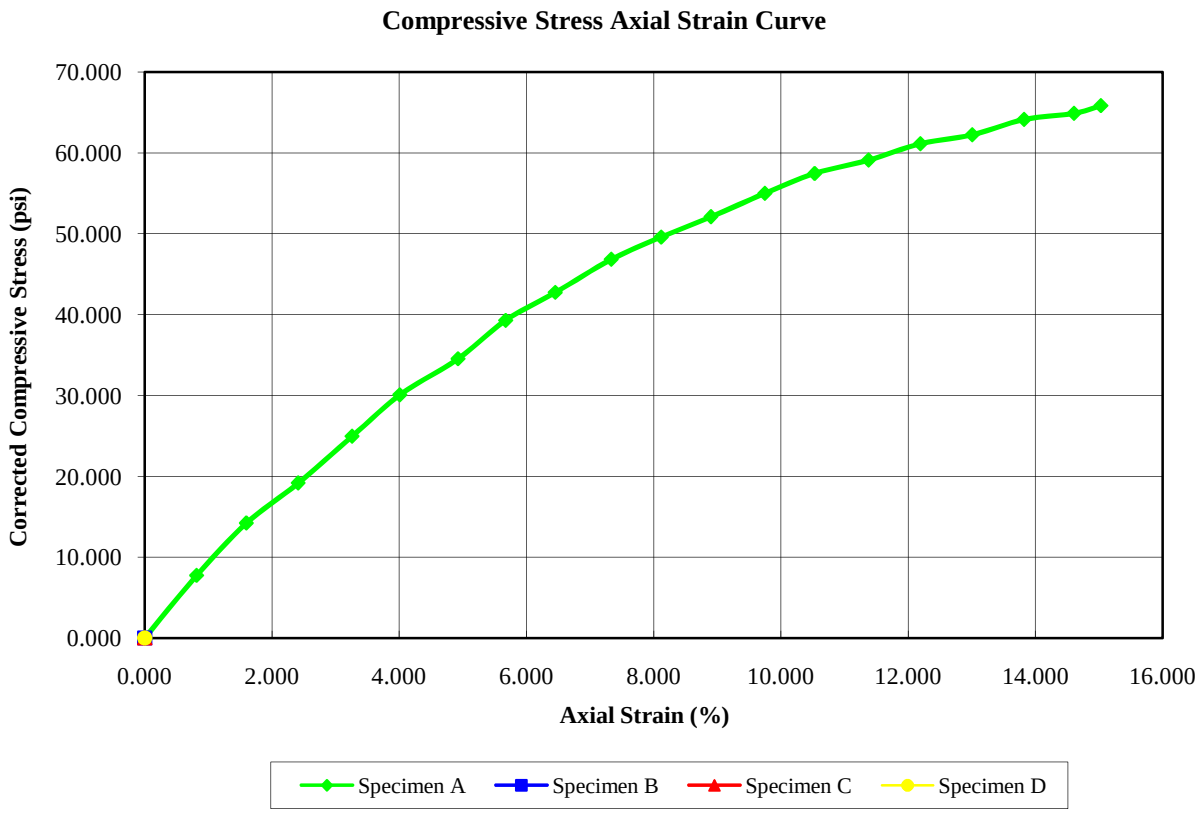

Before Test	Specimen A	B	C	D
Water Content (%)	21.05			
Dry Density (pcf)	109.472			
Saturation (%)	109.12			
Void Ratio	0.51			
Diameter (in)	1.364			
Height (in)	3.067			
Test Data	**A**	**B**	**C**	**D**
Unconfined Strength (psi)	65.854			
Undrained Shear Strength (tsf)	2.371			
Undrained Shear Strength (psi)	32.927			
Rate of Strain (in/min)	0.500000			
Description				

Project Information		Specimen Description	
Project Num		Specimen A	Brown silty clay, trace sand and gravel
Project	Brighton Park II	Specimen B	
Sampling Date	4/6/2009	Specimen C	
Boring #	B-5	Specimen D	
Sample #	S-4	**Test Variables**	
Depth (ft)	6-7.5	Specific Gravity	2.65
Client	GSG Consultant	Liquid Limit:	
		Plastic Limit:	

Remarks 4.741 TSF

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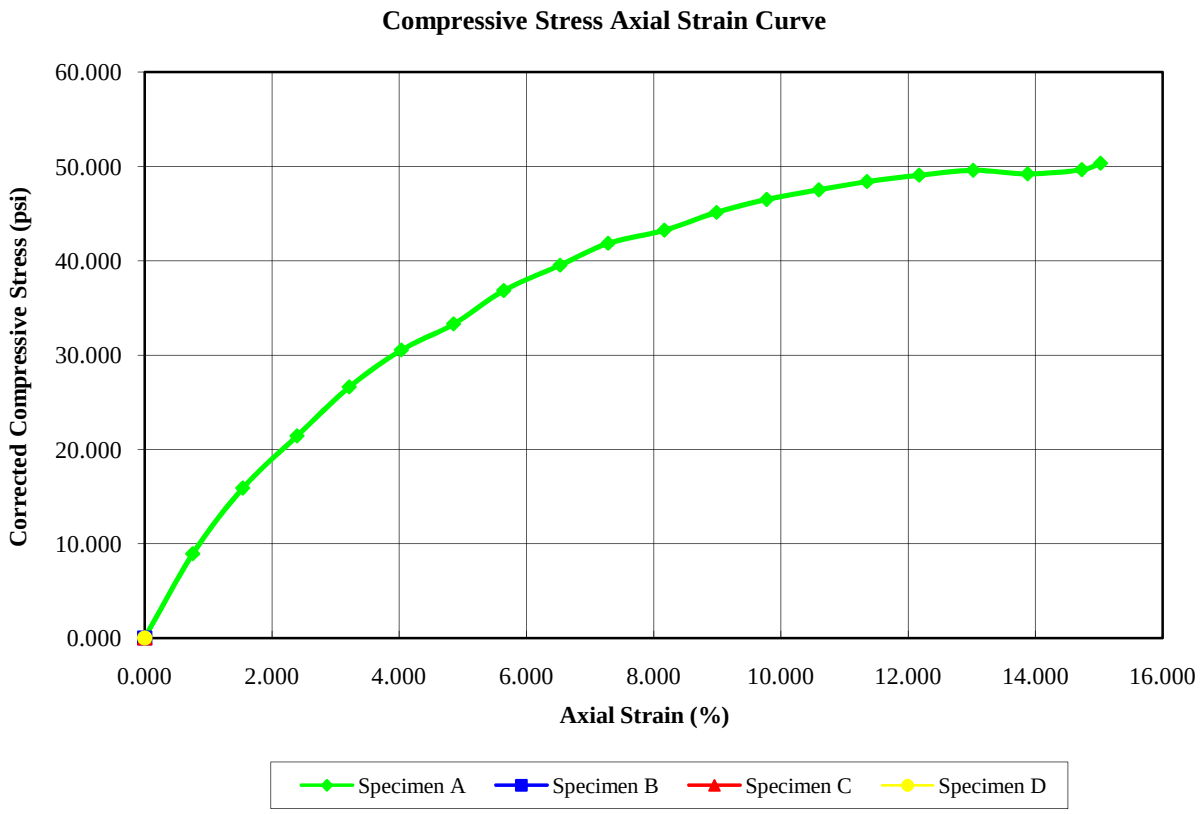

Before Test	Specimen A	B	C	D
Water Content (%)	20.58			
Dry Density (pcf)	106.320			
Saturation (%)	98.09			
Void Ratio	0.56			
Diameter (in)	1.373			
Height (in)	3.048			
Test Data	**A**	**B**	**C**	**D**
Unconfined Strength (psi)	50.334			
Undrained Shear Strength (tsf)	1.812			
Undrained Shear Strength (psi)	25.167			
Rate of Strain (in/min)	0.500000			
Description				

Project Information		Specimen Description	
Project Num		Specimen A	Brown silty clay, trace sand and gravel
Project	BRighton Park II	Specimen B	
Sampling Date	4/6/2009	Specimen C	
Boring #	B-6	Specimen D	
Sample #	S-4	**Test Variables**	
Depth (ft)	6-7.5	Specific Gravity	2.65
Client	GSG Consultant	Liquid Limit:	
		Plastic Limit:	
Remarks	3.624 TSF		

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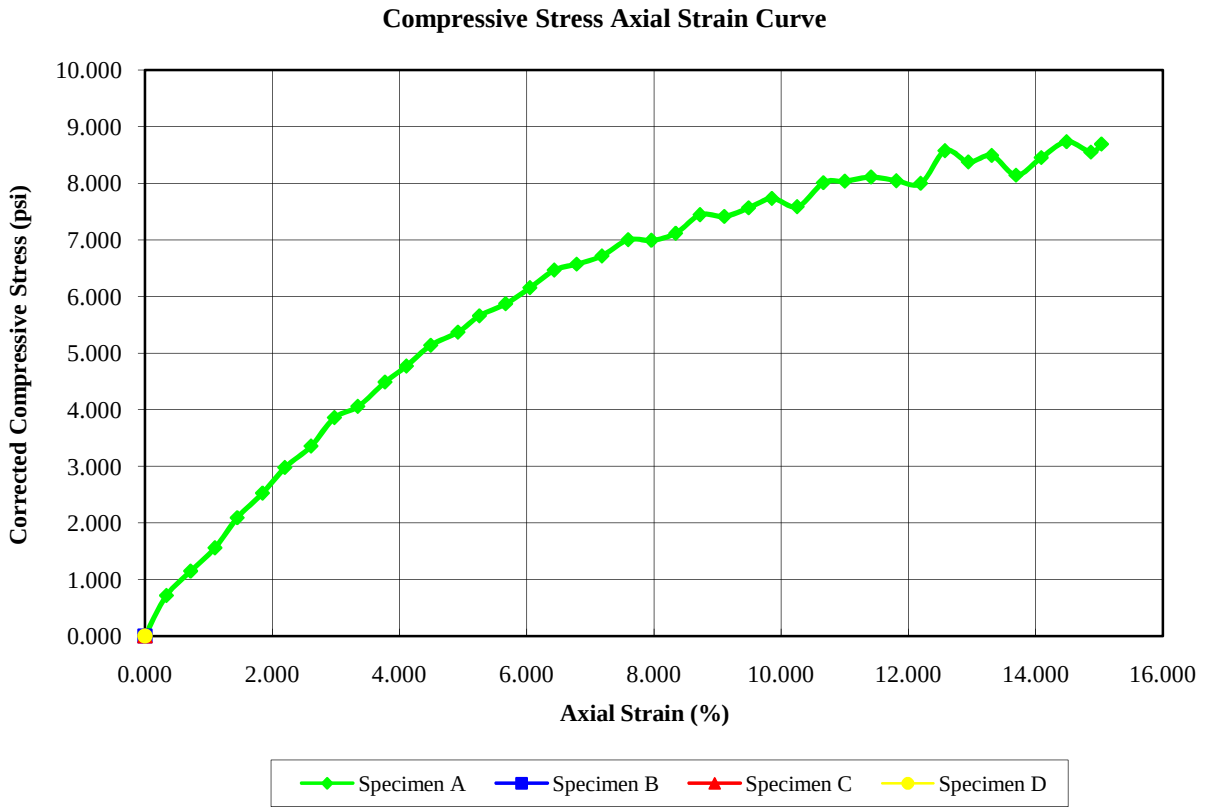

Before Test	Specimen A	B	C	D
Water Content (%)	20.56			
Dry Density (pcf)	109.302			
Saturation (%)	106.09			
Void Ratio	0.51			
Diameter (in)	2.857			
Height (in)	6.544			
Test Data	**A**	**B**	**C**	**D**
Unconfined Strength (psi)	8.735			
Undrained Shear Strength (tsf)	0.314			
Undrained Shear Strength (psi)	4.368			
Rate of Strain (in/min)	0.500000			
Description				

Project Information		Specimen Description	
Project Num		Specimen A	Gray silty clay, trace sand and gravel
Project	Brighton Park II	Specimen B	
Sampling Date	4/6/2009	Specimen C	
Boring #	B-7	Specimen D	
Sample #	Shelby Tube	**Test Variables**	
Depth (ft)	8.5-10	Specific Gravity	2.65
Client	GSG Consultant	Liquid Limit:	
		Plastic Limit:	
Remarks	0.629 TSF		

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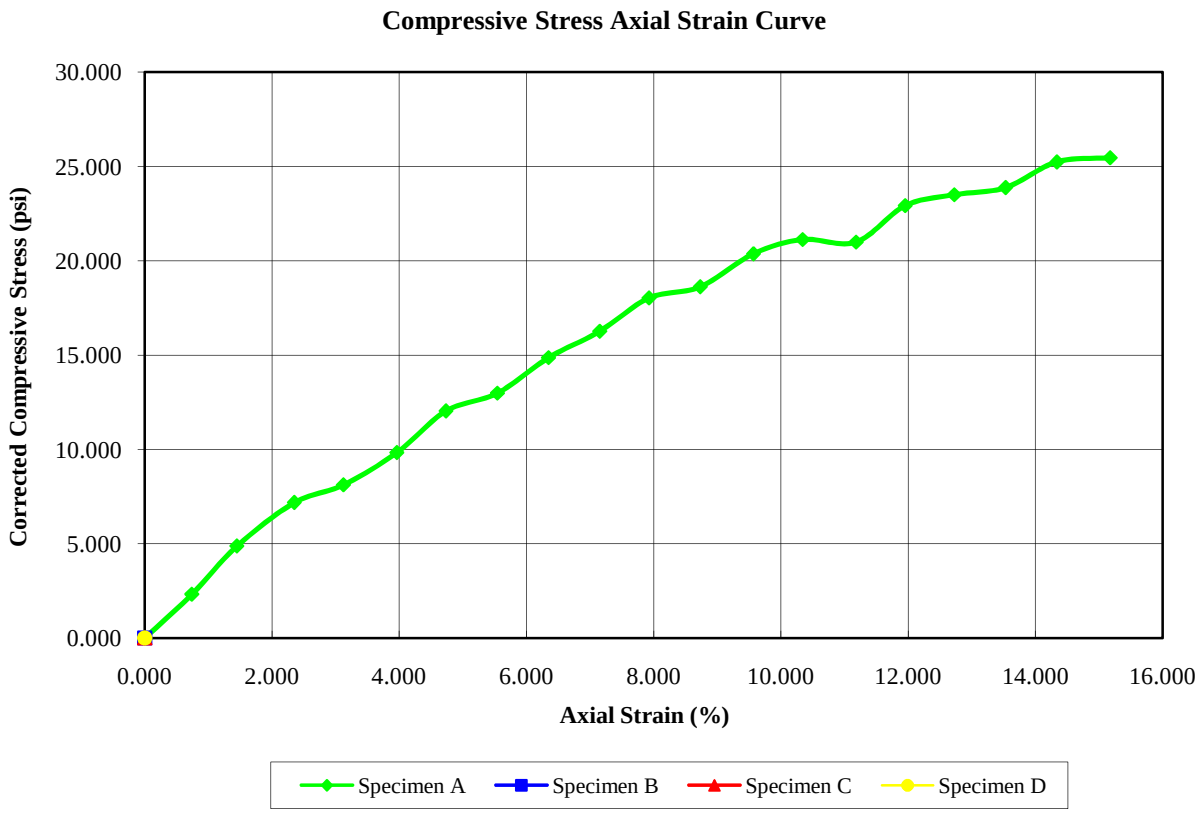

Before Test	Specimen A	B	C	D
Water Content (%)	20.21			
Dry Density (pcf)	109.879			
Saturation (%)	105.93			
Void Ratio	0.51			
Diameter (in)	1.362			
Height (in)	3.104			
Test Data	**A**	**B**	**C**	**D**
Unconfined Strength (psi)	25.454			
Undrained Shear Strength (tsf)	0.916			
Undrained Shear Strength (psi)	12.727			
Rate of Strain (in/min)	0.500000			
Description				

Project Information		Specimen Description	
Project Num		Specimen A	Gray silty clay trace sand & gravel, CL
Project	Brighton Park II	Specimen B	
Sampling Date	4/6/2009	Specimen C	
Boring #	B-8	Specimen D	
Sample #	S-5	**Test Variables**	
Depth (ft)	8.5-10	Specific Gravity	2.65
Client	GSG Consultant	Liquid Limit:	
		Plastic Limit:	

Remarks 1.833 TSF

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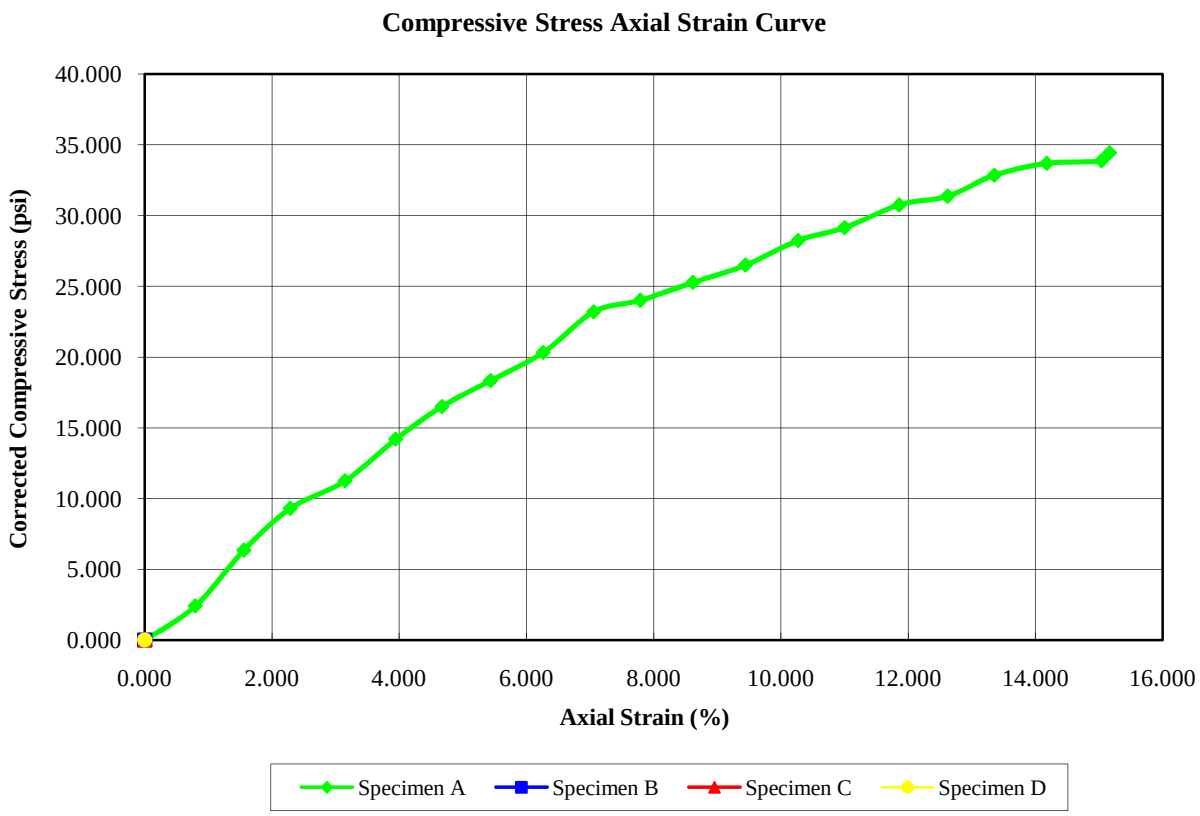

Before Test	Specimen A	B	C	D
Water Content (%)	21.17			
Dry Density (pcf)	109.485			
Saturation (%)	109.78			
Void Ratio	0.51			
Diameter (in)	1.378			
Height (in)	3.146			
Test Data	**A**	**B**	**C**	**D**
Unconfined Strength (psi)	34.430			
Undrained Shear Strength (tsf)	1.239			
Undrained Shear Strength (psi)	17.215			
Rate of Strain (in/min)	0.500000			
Description				

Project Information		Specimen Description	
Project Num		Specimen A	Gray silty clay trace sand & gravel, CL
Project	Brighton Park II	Specimen B	
Sampling Date	4/6/2009	Specimen C	
Boring #	B-9	Specimen D	
Sample #	S-4	**Test Variables**	
Depth (ft)	6-7.5	Specific Gravity	2.65
Client	GSG Consultant	Liquid Limit:	
		Plastic Limit:	
Remarks	2.479 TSF		

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Unconfined Compression Test Report (ASTM D2166)

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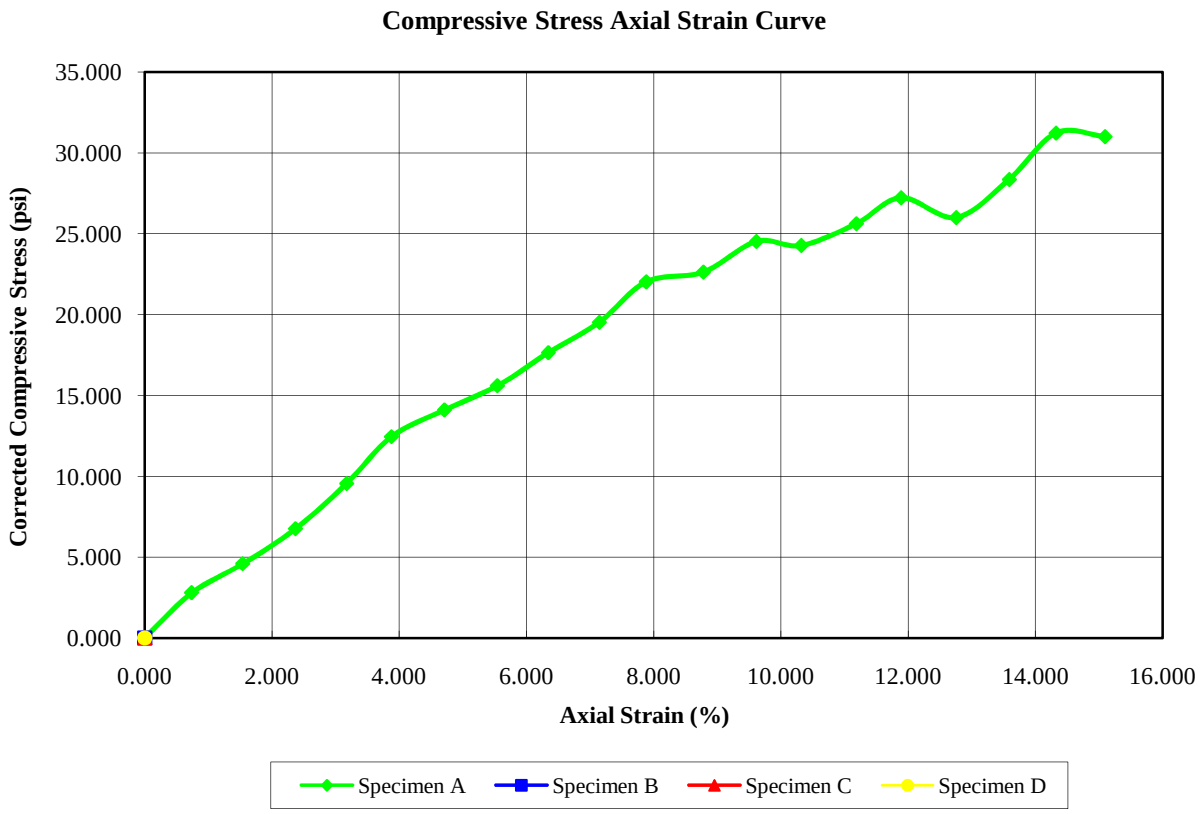

Before Test	Specimen A	B	C	D
Water Content (%)	19.42			
Dry Density (pcf)	110.828			
Saturation (%)	104.45			
Void Ratio	0.49			
Diameter (in)	1.363			
Height (in)	3.121			
Test Data	**A**	**B**	**C**	**D**
Unconfined Strength (psi)	31.225			
Undrained Shear Strength (tsf)	1.124			
Undrained Shear Strength (psi)	15.612			
Rate of Strain (in/min)	0.500000			
Description				

Project Information		Specimen Description	
Project Num		Specimen A	Gray silty clay trace sand & gravel, CL
Project	Brighton Park II	Specimen B	
Sampling Date	4/6/2009	Specimen C	
Boring #	B-10	Specimen D	
Sample #	S-5	**Test Variables**	
Depth (ft)	8.5-10	Specific Gravity	2.65
Client	GSG Consultant	Liquid Limit:	
		Plastic Limit:	
Remarks	2.248 TSF		

GSG MATERIAL TESTING, INC.
855 W. Adams Street, Suite 50, Chicago, IL 60607
Tel: (312) 666-2989, Fax: (312)666-2952

GSG Material Testing Laboratory Results

Organic Content

Client Name:	GSG Consultant	
Project Name:	Brighton Park II	
Material Type:	Fill (1'-2')	

Date Sampled: 4/23/2009

Sample No.	1	2	3	4		
Location	OC-6A	OC-7A	OC-8A	OC-9A		
Container No.	1	2	3	4		
Container Wt.	36.43	34.08	33.37	35.62		
Container + Dry Wt.	60.54	67.51	62.03	70.31		
Container + Burnt Wt.	59.26	65.58	59.66	69.96		
Dry Wt. of Sample	24.11	33.43	28.66	34.69	0.00	0.00
Burnt Wt. of Sample	22.83	31.50	26.29	34.34	0.00	0.00
Ash Wt.	1.28	1.93	2.37	0.35	0.00	0.00
% Organic Content	5.3%	5.8%	8.3%	1.0%	#DIV/0!	#DIV/0!

Organic Content = (Ash Wt / Dry Wt.) X 100

Remarks: _____

_____

Tested By: Ilvar Varquez _____ 4/27/09 _____

Reviewed By: _____ _____

GSG Material Testing, Inc.
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Tel: (312) 666-2989, Fax: (312)666-2952

GSG Material Testing Laboratory Results

Organic Content

Client Name:	GSG Consultant	
Project Name:	Brighton Park II	
Material Type:	Fill	

Date Sampled: 4/23/2009

Sample No.	1	2	3	4	5	
Location	OC-1A	OC-2	OC-3	OC-4	OC-5	
Container No.	1	2	3	4	5	
Container Wt.	34.11	33.37	34.09	36.43	35.62	
Container + Dry Wt.	63.35	62.72	62.78	63.40	67.23	
Container + Burnt Wt.	61.99	61.58	61.87	62.57	66.17	
Dry Wt. of Sample	29.24	29.35	28.69	26.97	31.61	0.00
Burnt Wt. of Sample	27.88	28.21	27.78	26.14	30.55	0.00
Ash Wt.	1.36	1.14	0.91	0.83	1.06	0.00
% Organic Content	4.7%	3.9%	3.2%	3.1%	3.4%	#DIV/0!

Organic Content = (Ash Wt / Dry Wt.) X 100

Remarks: _____

_____

Tested By: Ilvar Varquez _____ 4/24/09 _____

Reviewed By: _____ _____

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GSG Material Testing Laboratory Results

Organic Content

Client Name:	GSG Consultant	
Project Name:	Brighton Park II	
Material Type:	Fill Composite	

Sample No.	S-1	S-2				
Location	Bldg-Area	Paring Lot				
Container No.	1	2				
Container Wt.	34.11	35.62				
Container + Dry Wt.	49.89	55.98				
Container + Burnt Wt.	48.06	55.70				
Dry Wt. of Sample	15.78	20.36	0.00	0.00	0.00	0.00
Burnt Wt. of Sample	13.95	20.08	0.00	0.00	0.00	0.00
Ash Wt.	1.83	0.28	0.00	0.00	0.00	0.00
% Organic Content	11.6%	1.4%	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!

Organic Content = (Ash Wt / Dry Wt.) X 100

Remarks: _____

_____

Tested By: Ilvar Varquez _____ 4/14/09

Reviewed By: _____ _____

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855 W. Adams Street, Suite 50, Chicago, IL 60607
Tel: (312) 666-2989, Fax: (312)666-2952

GSG Material Testing Laboratory Results

Organic Content

Client Name:	GSG Consultant	
Project Name:	Brighton Park II	
Material Type:	Fill (3'-4')	

Date Sampled: 4/23/2009

Sample No.	1	2	3	4		
Location	OC-6B	OC-7B	OC-8B	OC-9B		
Container No.	1	2	3	4		
Container Wt.	33.37	36.43	35.62	34.08		
Container + Dry Wt.	58.54	58.81	58.78	54.97		
Container + Burnt Wt.	57.05	57.89	56.85	53.47		
Dry Wt. of Sample	25.17	22.38	23.16	20.89	0.00	0.00
Burnt Wt. of Sample	23.68	21.46	21.23	19.39	0.00	0.00
Ash Wt.	1.49	0.92	1.93	1.50	0.00	0.00
% Organic Content	5.9%	4.1%	8.3%	7.2%	#DIV/0!	#DIV/0!

Organic Content = (Ash Wt / Dry Wt.) X 100

Remarks: _____

_____

Tested By: Ilvar Varquez _____ 4/29/09 _____

Reviewed By: _____ _____