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February 9, 2009

Provident Realty Advisors, Inc.
One Lincoln Center, Suite 975
5400 LBJ Freeway
Dallas, Texas 75240

Attention: Mr. Matt Harris

Re: Geotechnical Engineering Report
Proposed "The Woodlands"
Residential Development
Patricia Street
Chalmette, Louisiana
PSI File Number: 254-85131-A

Dear Mr. Harris:

Professional Service Industries, Inc. (PSI) is pleased to transmit our Geotechnical Engineering Report for the referenced project. This report includes the results of field and laboratory testing, and recommendations for foundation and pavement design, as well as general site development.

We appreciate the opportunity to perform this Geotechnical Study and look forward to continued participation during the design and construction phases of this project. If you have any questions pertaining to this report, or if we may be of further service, please contact our office.

Respectfully submitted,
PROFESSIONAL SERVICE INDUSTRIES, INC.

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2/10/09

SDN/TYM:gsm

GEOTECHNICAL ENGINEERING REPORT

PROPOSED "THE WOODLANDS"
RESIDENTIAL DEVELOPMENT
PATRICIA STREET
CHALMETTE, LOUISIANA

PSI FILE NUMBER 254-85131-A

PREPARED FOR

PROVIDENT REALTY ADVISORS, INC.
ONE LINCOLN CENTER, SUITE 975
5400 LBJ FREEWAY
DALLAS, TEXAS 75240

FEBRUARY 9, 2009

BY

PROFESSIONAL SERVICE INDUSTRIES, INC.
724 CENTRAL AVENUE
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EXECUTIVE SUMMARY

An exploration and evaluation of the subsurface conditions have been completed for the proposed "The Woodlands" Residential Development that will be constructed on Patricia Street in Chalmette, Louisiana.

The site for the proposed development is currently a partially wooded area covered with surface vegetation. Pathways were cleared to gain access to the boring locations. The project will include the construction of four (4), three-story residential units and a single story club house. The residential structures will have wood frames and load bearing metal stud walls with isolated columns having a footprint of about 8,000 square feet each. The club house will also be a wood framed structure having a footprint of approximately 2,000 square feet. In addition, a parking lot with about 117 spaces will be provided to accommodate the facility. According to SCA Structural Engineers, typical maximum column and wall loads are expected to be on the order of 15 to 20 kips and three (3) to four (4) kips per linear foot, respectively. Limited grading information was available at the time this report was prepared. However, it is understood that about 5.5 feet of fill will be needed to achieve the floor slab design elevation. Up to 4.5 feet of fill is anticipated in the parking areas and drives.

The subsurface soil conditions at this site were characterized by drilling a total of eight (8) borings to depths ranging from six (6) to 80 feet below existing ground surface. Based on the borings, about 10 to 12 inches of brown silty topsoil with organics was encountered at the ground surface. This was followed by soft to stiff dark brown fat clay to depths ranging from four (4) to six (6) feet. Below this, there was very soft dark brown and black peat to a depth of 13 feet. Below the peat, very soft gray green fat clay to silty clay was encountered and extended to depths of 48 feet to 53 feet. This was underlain by silty clay to sandy clay and silty sand to a depth of at least 80 feet, the maximum depth explored. Groundwater was measured at depths ranging from one (1) to four (4) feet below existing ground surface during or 24 hour after completion of drilling.

The results of this exploration indicate that the near surface soils at the site are poor in bearing quality and highly compressible in nature. Furthermore, a shallow foundation system will experience considerable amount of settlement caused by the fill and the building structural loads. Therefore, a pile foundation system is recommended for support of the proposed buildings including the floor slabs. As requested, consideration was given to large treated timber piles, timber/concrete composite piles and auger cast in place piles. Details related to site development, foundation and pavement design, and construction considerations are included in subsequent sections of this report.

The owner/designer should not rely solely on this Executive Summary and must read and evaluate the entire contents of this report prior to utilizing our engineering recommendations in preparation of design/construction documents.

PROJECT INFORMATION

Project Authorization

Professional Service Industries, Inc. (PSI) has completed a geotechnical exploration for the proposed "The Woodlands" Residential Development that will be constructed on Patricia Street in Chalmette, Louisiana. This exploration was accomplished in general accordance with PSI Proposal Number 254-850256 dated December 16, 2008 and was authorized on December 18, 2008.

Project Description

The project will include the construction of four (4), three-story residential units and a single story club house building. The residential structures will have wood frames and load bearing metal stud walls with isolated columns having a footprint of about 8,000 square feet each. The club house will also be a wood framed structure having a footprint of approximately 2,000 square feet. Typical maximum column and wall loads provided by SCA Structural Engineers, are expected to be on the order of 15 to 20 kips and three (3) to four (4) kips per linear foot, respectively. Flexible or rigid pavement are considered for the development.

The geotechnical recommendations presented in this report are based on the available project information, building locations, and the subsurface materials described in this report. If any of the noted information is incorrect, please inform PSI in writing so that we may amend the recommendations presented in this report if appropriate and if desired by the client. PSI will not be responsible for the implementation of its recommendations when it is not notified of changes in the project.

Purpose and Scope of Services

The purpose of this study was to explore the subsurface conditions at the site to enable an evaluation of acceptable foundation and pavement systems for the proposed construction. The scope of services includes eight (8) borings drilled to depths ranging from six (6) to 80 feet below the existing ground surface, performance of select laboratory testing, and preparation of this geotechnical report. This report briefly outlines the testing procedures, presents available project information, describes the site and subsurface conditions, and presents recommendations regarding the following:

- Pile capacity and an estimate of settlement.
- General pavement design criteria and pavement subgrade preparation.
- Comments regarding factors that will impact construction and performance of the proposed construction.

The scope of services did not include an environmental assessment for determining the presence or absence of wetlands, or hazardous or toxic materials in the soil, surface water, groundwater, or air on or below, or around this site. Any statements in this report or on the boring logs regarding odors, colors and unusual or suspicious items or conditions are strictly for informational purposes. Prior to development, an environmental site assessment is advisable for this site.

In addition, PSI did not provide any service to investigate or detect the presence of moisture, mold, or other biological contaminates in or around any structure, or any service that was designed or intended to prevent or lower the risk of the occurrence of the amplification of the same. The client acknowledges that mold is ubiquitous to the environment with mold amplification occurring when building materials are impacted by moisture. The client further acknowledges that site conditions are outside of PSI's control, and that mold amplification will likely occur, or continue to occur, in the presence of moisture. As such, PSI cannot and shall not be held responsible for the occurrence or recurrence of mold amplification.

SITE AND SUBSURFACE CONDITIONS

Site Location and Description

The site for the proposed residential development is located on Patricia Street in Chalmette, Louisiana. The property is bounded by a wooded parcel bordered by Patricia Street to the north, Guerenger Canal to the west, wooded area to the south and east, followed by an existing Wal-Mart Store.

Limited grading information was available at the time this report was prepared. Based on the information provided to us by Kelly McHugh & Associates, Inc., we understand that the average existing grade at the site is about -4.2 feet MSL. Since, the apartment buildings are proposed to be at finished grade of 1.5 feet MSL, about 5.5 feet of fill material will be required to achieve the floor slabs design grade. Up to 5 feet of fill is anticipated in the parking areas and drives.

Field Exploration

The field exploration, which was performed to evaluate the engineering characteristics of the foundation materials, included a reconnaissance of the project site, drilling test borings, and recovering soil samples. In addition, groundwater encountered in the test borings was measured and recorded.

Four (4) borings (B-1 through B-4) were drilled to a depth of 80 feet within the footprint of the residential structures. One (1) boring (B-5) was advanced to a depth of 50 feet in the club house area. For the design of the parking lot, three (3) borings (P-1 through P-3) were drilled to a depth of six (6) feet. The number, depth, and location of borings were determined by PSI. The boring depths are in reference to the existing ground surface at the time of the field exploration. The approximate locations of the borings are indicated on the

plan included in the Appendix, which is a reproduction of the site plan provided by Provident Realty Advisors, Inc.

Drilling and Sampling Procedures

The borings were drilled with a SIMCO track mounted drilling rig. Wet rotary and continuous flight auger techniques were used to advance the boreholes. Samples were generally obtained continuously from the ground surface to a depth of ten feet and at maximum five-foot intervals thereafter. Drilling and sampling techniques were accomplished in general accordance with ASTM Standard Procedures.

Undisturbed samples of cohesive soils were generally obtained using thin-wall tube sampling procedures in general accordance with the procedures for "Thin-Walled Tube Geotechnical Sampling of Soils" (ASTM D1587). These samples were extruded in the field with a hydraulic ram.

For cohesionless soils and semi-cohesive soils, Standard Penetration Tests (SPT) were performed to obtain standard penetration values of the soil. The standard penetration value (N) is defined as the number of blows of a 140 pound hammer, falling 30 inches, required to advance the split-barrel sampler one (1) foot into the soil. To perform the test and obtain a sample, the sampler is lowered to the bottom of the previously cleaned drill hole and advanced by blows from the hammer. The number of blows is recorded for each of three (3) successive increments of six (6) inches penetration. The "N" value is obtained by adding the second and third incremental numbers. The results of the standard penetration test indicate the relative density of cohesionless soils and thereby provide a basis for estimating the relative strength and compressibility of the soil profile components. Samples of granular soils were obtained utilizing a two (2) inch O.D. split-barrel sampler in general accordance with procedures for "Penetration Test and Split-Barrel Sampling of Soils" (ASTM D-1586).

All samples were identified according to project number, boring number, and depth and were placed in polyethylene plastic wrapping to protect against moisture loss and were transported to the laboratory in containers to prevent disturbance. All of the samples recovered from the field exploration were identified and evaluated by experienced geotechnical personnel upon arrival at the laboratory.

Laboratory Testing Program

In addition to the field exploration, a supplemental laboratory testing program was conducted to evaluate additional pertinent engineering characteristics of the foundation materials necessary in analyzing the behavior of the foundation system for the proposed development.

The laboratory testing program included supplementary visual classification and water content tests on the soil samples. In addition, selected samples were subjected to unconfined compression testing, percent passing No. 200 sieve, and Atterberg Limits

determination. Additional estimates of shear-strength and unconfined compressive strength were determined through the use of a hand torvane and a pocket penetrometer, respectively.

The laboratory testing program was conducted in general accordance with applicable ASTM Specifications. The results of these tests can be found on the accompanying boring logs located in the Appendix.

Subsurface Conditions

Based on the borings, about 10 to 12 inches of brown silty topsoil with organics was encountered at the ground surface. This was followed by soft to stiff dark brown fat clay to depths ranging from four (4) to six (60 feet. Below this, there was very soft dark brown and black peat to a depth of 13 feet. Below the peat, very soft gray green fat clay to silty clay was encountered and extended to depths of 48 feet to 53 feet. This was underlain by silty clay to sandy clay and silty sand to a depth of at least 80 feet, the maximum depth explored.

The above subsurface description is of a generalized nature to highlight the major subsurface stratification features and material characteristics. The boring logs included in the appendix should be reviewed for specific information at individual boring locations. These records include soil descriptions, stratifications, penetration resistance, locations of the samples, and laboratory test data. The stratifications shown on the boring logs represent the conditions only at the actual boring locations. Variations may occur and should be expected between boring locations. The stratifications represent the approximate boundary between subsurface materials and the actual transition may be gradual. Water level information obtained during field operations is also shown on the boring logs. The samples, which were not altered by laboratory testing, will be retained for 60 days from the date of this report and then will be discarded.

Groundwater Information

Groundwater was measured in the borings at depths ranging from one (1) foot to four (4) feet below the existing grade during or 24 hours after completion of drilling. The groundwater level presented in this report is the level that was encountered at the time of our field activities and may not have become fully static at the time of measurement. Groundwater levels at this site may vary due to weather conditions and seasonal precipitations. We recommend that the actual groundwater level at the site be determined by the contractor at the time of the construction activities.

RECOMMENDATIONS

General

The type and depth of foundation suitable for a given structure primarily depends on several factors including the subsurface condition, the function of the structure, the loads it may carry, the cost of the foundation and the criteria set by the Design Engineer with respect to vertical and differential movements which the structure can withstand without damage.

The results of this exploration indicate that the near surface soils present at this site are compressible and very poor in bearing quality. These soils are not suitable for support of the proposed buildings on shallow foundations. Therefore, it is recommended that a pile foundation system be used for support of the proposed buildings including the floor slabs. Details related to site preparation, foundation and pavement design and construction considerations are discussed further below.

Site Preparation

Site preparation is expected to include, but not be limited to the stripping and removal of all topsoil, organics and any deleterious materials from the areas to be developed. Based on the borings, about 12 inches of brown silty topsoil with organics was encountered at the site. However, the actual stripping depth should be determined by a representative of the geotechnical engineer at the time of construction.

The subgrade in the pavement areas should be proofrolled with a loaded tandem axle dump truck or similar heavy rubber tired vehicle. Soils, which are observed to rut or deflect excessively under the moving load should be undercut and replaced with properly compacted fill. The proofrolling, undercutting, and filling activities should be witnessed by a representative of the geotechnical engineer and should be performed during a period of dry weather.

If fill is needed, the first layer of fill should be placed in a relatively uniform horizontal lift and be adequately keyed into the stripped and scarified subgrade soils. Cohesive structural fill should have a liquid limit less than 40 and a plasticity index between eight (8) and 18. Granular structural fill material could consist of "pumped river sand" having less than 10 percent fines passing the #200 sieve. This fill should be compacted to at least 95 percent of the fill's Proctor maximum dry density as determined by ASTM Designation D698.

The fill should be placed in maximum lifts of eight (8) inches of loose material and should be compacted within the range of –3 to +3 percent of the optimum moisture content. If water must be added, it should be uniformly applied and thoroughly mixed into the soil by disking or scarifying. Each lift of compacted structural fill should be tested by a representative of the geotechnical engineer prior to the placement of subsequent lifts. Compaction requirements may be waived in the pile-supported areas.

Pile Foundation

A deep pile foundation system was evaluated for structural support of the proposed buildings, including the floor slabs. Consideration was given to timber/concrete composite piles and auger cast in place piles. The composite pile should consist of untreated timber lower section (7" tip – 12" butt) conforming to ASTM D25 for quality and 12 inch diameter concrete filled steel can upper section. Since no competent sand layer was encountered in the borings, the piles will generally derive their support through "skin friction" along their embedded lengths. The recommended pile lengths are from the existing ground surface at the time of drilling and any length of pile needed above this

reference should be added to the recommended pile length. Typical composite can connectors do not transfer tensile loads to the timber portion of the composite piles, therefore, no tensile capacities are recommended.

Taking into consideration the field and laboratory data, the estimated allowable capacities for the timber and composite piles are tabulated below.

ESTIMATED ALLOWABLE SINGLE PILE LOAD CAPACITY IN TONS* F.S.=2.0 IN COMPRESSION F.S. = 3.0 IN TENSION	
Pile Length in feet	Composite Pile Lower Timber Section (7" Tip-12" Butt) Upper Concrete Filled Steel Can Section
	Compression
65	9
70	12
75	13

*** Capacities are soil-pile related capacities and consideration should be given to the structural integrity of the pile member**

As an alternative, auger cast-in-place piles were also considered for the support of the apartment buildings. The recommended pile capacities for various pile sizes and lengths are tabulated below:

ESTIMATED ALLOWABLE SINGLE PILE LOAD CAPACITIES IN TONS* F.S.=2 IN COMPRESSION F.S.=3 IN TENSION						
Pile Length in Feet	12" Diameter Auger Cast Pile		14" Diameter Auger Cast Pile		16" Diameter Auger Cast Pile	
	Compression	Tension	Compression	Tension	Compression	Tension
65	14	8	16	11	19	13
70	17	10	19	15	22	17
75	20	12	23	17	25	19
80	21	13	25	19	27	22

***Capacities are soil pile related capacities and consideration should be given to the structural integrity of the pile member.**

The estimated pile capacities include a factor of safety of two (2) in compression and three (3) in tension. Detailed grading information was not available at this time. However, it is understood that about 5.5 feet of fill will be required to achieve the floor slabs design elevation. Therefore, the pile capacities provided have been reduced to account for the drag loads imparted on the piles. Should more than 5.5 feet of fill be needed to bring the building slabs to design grade, the recommended pile capacities should be further evaluated to consider the additional drag loads on the piles.

Floor Slabs

The building floor slabs including the sidewalks and landings immediately adjacent to the building should be pile supported. The floor slabs should have an adequate number of joints to reduce cracking resulting from any differential movement and shrinkage. It is also recommended that a polyethylene sheeting vapor barrier be provided at the floor slab/fill soil interface.

All utility lines in the building areas should be hung from the slabs. Hangers and connections used should be made of stainless steel, meeting the applicable Building Code. Flexible connections must be provided at the interface of pile supported and non-pile supported areas to accommodate at least eighteen (18) inches of settlement.

Settlement

It is estimated that long term total settlement of piles in single widely spaced rows or in clusters of up to nine (9) piles and loaded to their allowable capacities will be on the order of one (1) inch. This estimate assumes that the maximum fill thickness will not exceed 5.5 feet; however, settlement will depend on the amount of fill placed on the site. Differential settlement is anticipated to be on the order of 50 percent of the total settlement.

Light Pole Foundation

Due to the soft soil conditions encountered on this site, it is recommended that a pile foundation system consisting of ASTM D25 small treated timber piles be used to support the light pole foundations. The piles should have minimum 6-inch tip and 8-inch butt diameters with a minimum embedded length of 35 feet. Furthermore, it is recommended that a minimum of 3-pile cap be used to provide lateral stability. The allowable compression and tension capacities for piles embedded 35 and 40 feet below the existing ground surface are provided in the following table. The capacities incorporate a factor of safety of 2 in compression and 3 in tension.

Pile Type	Driven Depth, Ft.	Allowable Pile Capacity, Tons	
		Compression	Tension
ASTM D25 treated timber pile with minimum 6" tip and 8" butt	35	3	2
	40	4	2.5

Pile Installation

Driven Piles

Pile driving hammers used to drive foundation piles should be selected according to pile type, length, size, and weight of pile, as well as potential vibrations resulting from pile driving operations. Care should be taken to assure that the hammer selected is capable of achieving the desired penetration without causing damage to the piles or causing excessive vibrations which could damage existing, nearby structures. Hammers having a rated energy in the range of 7,500 to 10,000 foot pounds are satisfactory for the small timber piles (6" tip – 8" butt). For composite piles, hammers having a rated energy in the range of 15,000 to 20,000 foot-pounds are recommended.

Each pile should be driven to the desired tip elevation and driving resistance without interruption in the driving operations. Driving of the center piles in the cluster first will better facilitate driving operations. Accurate records of the final tip elevation and driving resistances should be obtained during the pile driving operations.

Some pile heaving may be experienced during installation of adjacent displacement type piles. It is therefore recommended that the tip elevation of the piles be recorded and if significant heave is noted after driving of subsequent piles, provisions must be made for reseating them.

Pile Driving Monitoring

We recommend that pile driving be monitored by the geotechnical engineer or his representative. Sometimes, premature refusal occurs due to poor performance of the hammer rather than from soil resistance. Any changes in hammer blow counts should be carefully examined before making any decisions about the pile penetration.

Auger Cast Piles

A successful auger cast pile installation will depend upon the expertise of the contractor and the techniques he uses. While this installation can be monitored to determine that the piles are installed in general accordance with the project specifications, and accepted practices, it is not possible to make an accurate determination of the capacity of each individual pile. We therefore recommend that the auger cast pile installation contractor and the on-site personnel have at least five years of continuous experience in this technique including a successful track record of installing similar piles in the area.

Because of the possibility of soil intrusion during auger withdrawal and non-vertical piles, the job specifications should be carefully prepared and continuous inspection of the pile installation maintained. Full time observation by qualified personnel working under the supervision of the Geotechnical Engineer should be maintained during installation to monitor the depth and the amount of grout pumped versus the rate of auger withdrawal. Confirmation should be made that the design pile

diameter is maintained during the entire pile installation operations. In addition, grout return depths and grout factors should be checked to ensure the drilled hole is completely filled with grout. Grout factors should not drop below 120 percent of the theoretical volume of the pile. It is the piling contractor's responsibility to properly estimate the grout volume and implement appropriate installation methods to insure production of continuous grout shafts without undue soil disturbance. It is further recommended that the consistency of the grout as measured by the U.S. Army Corps of Engineers Specifications CRN-C-179 (0.75 inch orifice) be on the order of eighteen (18) to twenty four (24) seconds. The grout should be sampled and grout cubes cast to verify the compressive strength in accordance with the project specifications.

Pile Load Test

The pile capacity should be verified by field load testing a test pile. The pile should be tested in compression as outlined by ASTM D1143 and the local building code. The pile load test should be performed under the guidance of the soils engineer so that the data may be interpreted and the recommended pile capacities adjusted, if necessary, according to the load test results.

Pavement Recommendations

The performance of pavements depends upon several factors including (1) the characteristics of the supporting soils; (2) the magnitude and frequency of wheel load applications; (3) quality of construction materials; (4) the contractor's placement and workmanship abilities, and (5) the desired period of design life. PSI has evaluated both rigid and flexible pavements for this project.

Detailed grading information was not available at the time this report was prepared. However, it is understood that up to 4.5 feet of fill may be required in the parking area. The traffic is assumed to consist mainly of passenger cars, light trucks and occasional heavy delivery and solid waste collection trucks.

The recommended pavement sections presented are considered typical and minimum for the assumed parameters in the general site area and anticipated traffic condition. We understand that budgetary considerations sometimes warrant thinner pavement sections than those presented. However, the owner, and the project designers should be aware that thinner pavement sections may result in increased maintenance costs and lower than anticipated pavement life.

Our scope of services did not include extensive sampling for determination of Coefficient of Subgrade Reaction (K) and California Bearing Ratio (CBR) of existing subgrade or potential sources of imported fill for the specific purpose of a detailed pavement analysis. Instead, we have assumed pavement related design parameters that are considered to be typical for the area soil types. We have estimated the subgrade soils will be prepared to achieve a Coefficient of subgrade reaction (k) of 100 psi per inch, which could be used for rigid pavement design and a CBR of three (3) for flexible pavement design. Consequently, a typical pavement section can be used as follows:

FLEXIBLE PAVEMENT		
Pavement Materials	**Minimum Thickness, Inches**	
	Light Duty	Heavy Duty
Asphaltic Concrete Wearing Course	3	4
Compacted 610 Limestone Base	8	10
Compacted Structural Fill (Sand)	12	12

RIGID PAVEMENT		
Pavement Materials	**Minimum Thickness, Inches**	
	Light Duty	Heavy Duty
Portland Cement Concrete	5	6
Compacted Granular Fill (Sand)	12	12

Portland Cement Concrete pavements should be utilized where waste disposal containers are located. The concrete paved area should be sufficiently large so that the front wheels of the collection truck are supported on the rigid pavement. In this area and in areas, which will be accessed by heavy trucks (solid waste trucks, delivery trucks, etc.), a minimum concrete pavement thickness of seven (7) inches underlain by 12 inches of granular fill (sand) is recommended.

The asphaltic concrete should meet the requirements of the latest edition of Louisiana Standard Specifications for Roads and Bridges, and should be compacted to a minimum of 95 percent of the density of the laboratory molded specimen.

The crushed limestone base should meet the requirements of the latest edition of Louisiana Standard Specification for Roads and Bridges (LSSRB) Section 1003.03, and be compacted to at least 95 percent of the maximum dry density determined by ASTM D 698 (Standard Proctor) within 3 percent of optimum moisture content. The sand fill sub-base for the asphalt pavement and the base for the rigid pavement could consist of "pumped river sand" having less than 10 percent fines passing a No. 200 sieve. This should be compacted to 95 percent of the maximum dry density as determined by ASTM D698.

Proper finishing of concrete pavement requires the use of appropriate construction joints to reduce the potential for cracking. Construction joints should be designed in accordance with current Portland Cement Association guidelines. Joints should be connected with smooth, greased or sleeved dowels and should be sealed to reduce the potential for water infiltration into pavement joints and subsequent infiltration into the supporting soils. The design of steel reinforcement should be in accordance with accepted codes. The concrete should have a minimum flexural strength of 650 psi at 28

days. The concrete should also be designed with 3±1 percent entrained air to improve workability and durability.

Due to the soil conditions at the site and long term settlement potential, it is recommended that a proper design be considered at the pavement and pile supported structures interface to accommodate the settlement of the pavement, provide a smooth transition from the pavement to the pile supported sidewalk, and avoid abrupt and excessive grade change. Taking into consideration the subsurface conditions at the site and the placement of up to 4.5 feet of fill in the parking area, settlement in the parking lot is estimated to be on the order of fifteen (15) inches over the life of the pavement. However, flexible connections, capable of accommodating at least 18 inches of settlement, should be provided for lines exiting the building areas to non-pile supported areas.

Due to the magnitude of the settlement, it is highly recommended that the fill be placed as soon as possible to improve the site condition and induce some of the post construction settlement prior to building and pavement construction.

CONSTRUCTION CONSIDERATIONS

Construction and Testing

Many problems can be avoided or solved in the field if proper inspection and testing services are provided. It is recommended that the site preparation, foundation and pavement be monitored by the geotechnical engineer or his representative.

Drainage and Groundwater Concerns

Water should not be allowed to collect on prepared subgrades in the construction area either during or after construction. Undercut or excavated areas should be sloped toward one corner to facilitate removal of any collected rainwater, groundwater, or surface runoff. Positive site surface drainage should be provided to reduce infiltration of surface water around the buildings.

Groundwater was encountered or measured during or 24 hour completion at depths of one (1) to four (4) feet below existing site grades. It is possible that seasonal variations will cause fluctuations, or a water table to be present in the upper soils at a later time. Any water accumulation should be removed from excavations by pumping. Should excessive and uncontrolled amounts of seepage occur, the geotechnical engineer should be consulted.

Excavations

In Federal Register, Volume 54, No. 209 (October 1989), the United States Department of Labor, Occupational Safety and Health Administration (OSHA) amended its "Construction Standards for Excavations, 29 CFR, part 1926, Subpart P". This document was issued to better insure the safety of workmen entering trenches or excavation. It is mandated by this federal regulation that excavations, whether they be utility trenches, basement excavation or footing excavations, be constructed in accordance with the new

OSHA guidelines. It is our understanding that these regulations are being strictly enforced and if they are not closely followed the owner and the contractor could be liable for substantial penalties.

The contractor is solely responsible for designing and constructing stable, temporary excavations and should shore, slope, or bench the sides of the excavations as required to maintain stability of both the excavation sides and bottom. The contractor's "responsible person", as defined in 29 CFR Part 1926, should evaluate the soil exposed in the excavations as part of the contractor's safety procedures. In no case should slope height, slope inclination, or excavation depth, including utility trench excavation depth, exceed those specified in local, state, and federal safety regulations.

We are providing this information solely as a service to our client. PSI does not assume responsibility for construction site safety or the contractor's or other parties compliance with local, state, and federal safety regulations.

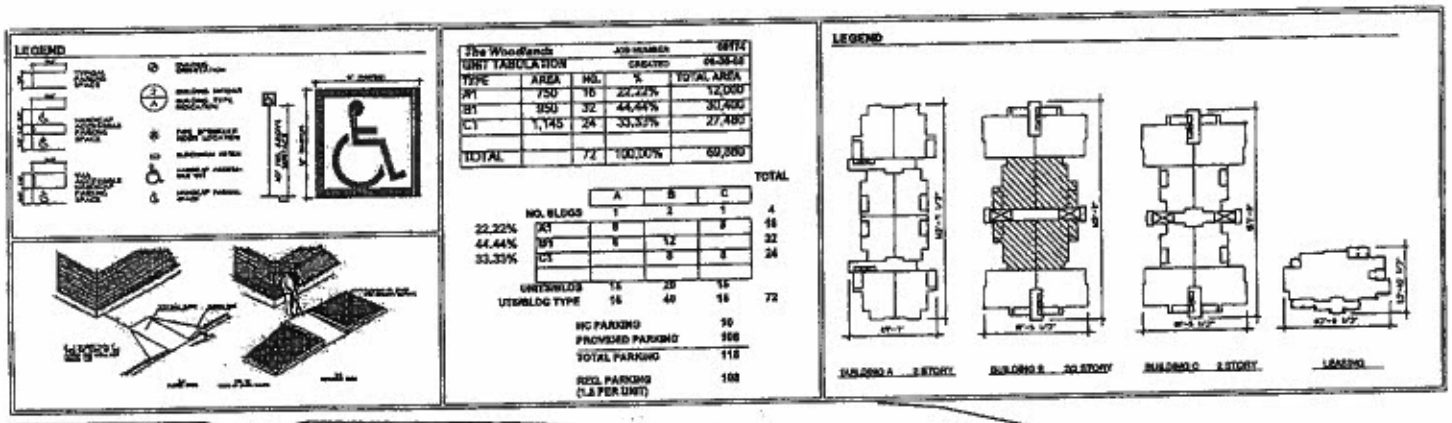
REPORT LIMITATIONS

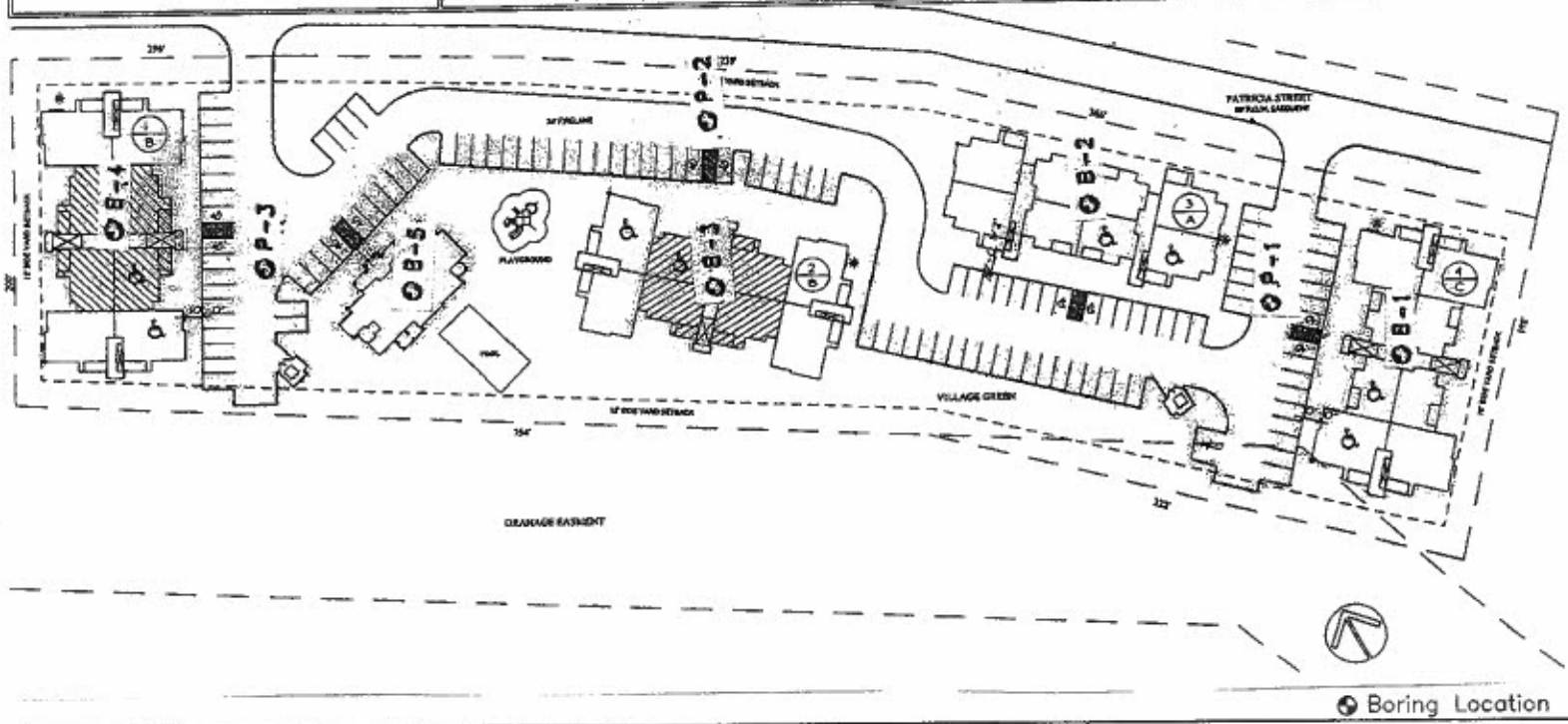
The recommendations submitted in this report are based on the available subsurface information obtained by PSI. If there are any revisions to the plans for this project, or if deviations from the subsurface conditions noted in this report are encountered during construction, PSI should be notified immediately to determine if changes in the foundation recommendations are required. If PSI is not notified of such changes, PSI will not be responsible for the impact of those changes on the project.

The geotechnical engineer warrants that the findings, recommendations, specifications, or professional advice contained herein have been made in accordance with generally accepted professional geotechnical engineering practices in the local area. No other warranties are implied or expressed.

After the plans and specifications are more complete, the geotechnical engineer should be retained and provided the opportunity to review the final design plans and specifications to check that our engineering recommendations have been properly incorporated into the design documents. At that time, it may be necessary to submit supplementary recommendations. If PSI is not retained to perform these functions, PSI will not be responsible for the impact of those conditions on the project. This report has been prepared for the exclusive use of Provident Realty Advisors, Inc. for the specific application to the proposed "The Woodlands" Residential Development to be constructed on Patricia Street in Chalmette, Louisiana.

APPENDIX





Proposed "The Woodlands" Residential Development
Patricia Street
Chalmette, Louisiana

Boring Location Diagram

Professional Service Industries, Inc.
724 Central Ave
Jefferson, La 70121 ph. (504) 733-9411

Date: 2/3/2009 | Project No.: 254-85131-A

LOG OF BORING B-1

PROPOSED THE WOODLANDS RESIDENTIAL DEVELOPMENT
PATRICIA STREET
CHALMETTE, LOUISIANA

TYPE OF BORING: WET ROTARY | LOCATION: Building 4 | PSI PROJECT NO.: 254-85131-A

DEPTH, FT.	SOIL TYPE	SAMPLES	DESCRIPTION	N-BLOWS/FT.	UNCONFINED COMPRESSIVE STRENGTH tsf	HAND PENTROMETER tsf	TORVANE tsf	UNIT DRY WEIGHT pcf	MOISTURE CONTENT %	LIQUID LIMIT	PLASTICITY INDEX	% PASSING #200 SIEVE
			6" silty topsoil and organics			0.75		47	50			
			Soft dark brown Fat Clay with organics/trace of roots ▼	WOH	0.18		0.15		86			
5			Very soft dark brown and black Peat	WOH					128			
				WOH					178			
									237			
10									167	363	248	
			Very soft to soft gray green Fat Clay		0.11		0.05	49	91			
15												
			-with silt, sand seams and roots, 18' to 20'				0.05		79			
20												
				WOH					73			
25												
					0.20		0.10	59	68			
30												
			-with silt seams, 33' to 35'				0.05		77			
35												
					0.38		0.25	56	75			
40												
							0.20		75			
45												
			Soft gray brown Silty Clay with shell fragments		0.33		0.25	83	35			
50												

DEPTH OF BORING: 80 Feet | GROUNDWATER: Measured at 2 feet upon completion

DATE: 1-11-09

LOG OF BORING B-1 (continued)

PROPOSED THE WOODLANDS RESIDENTIAL DEVELOPMENT
PATRICIA STREET
CHALMETTE, LOUISIANA

TYPE OF BORING: WET ROTARY | LOCATION: Building 4 | PSI PROJECT NO.: 254-85131-A

DEPTH, FT.	SOIL TYPE	SAMPLES	DESCRIPTION	N-BLOWS/FT.	UNCONFINED COMPRESSIVE STRENGTH tsf	HAND PENTROMETER tsf	TORVANE tsf	UNIT DRY WEIGHT pcf	MOISTURE CONTENT %	LIQUID LIMIT	PLASTICITY INDEX	% PASSING #200 SIEVE
			Soft gray brown Silty Clay with shell fragments									
55			Very loose gray brown Silty Sand with roots and shell fragments	3			0.10		34 31			
60			Very soft to gray brown Sandy Clay	WOH					58			70
65			Soft to stiff gray green Lean Clay	10					24			
70					1.79	2.5		91	30			
75			-with sand and silt layers	7					23			
80					0.93	1.0 1.5		89	32 19			
85			Boring terminated at 80 feet									
90												
95												
100												

DEPTH OF BORING: 80 Feet
DATE: 1-11-09

LOG OF BORING B-2

PROPOSED THE WOODLANDS RESIDENTIAL DEVELOPMENT
PATRICIA STREET
CHALMETTE, LOUISIANA

TYPE OF BORING: WET ROTARY | LOCATION: Building 3 | PSI PROJECT NO.: 254-85131-A

DEPTH, FT.	SOIL TYPE	SAMPLES	DESCRIPTION	N-BLOWS/FT.	UNCONFINED COMPRESSIVE STRENGTH tsf	HAND PENTROMETER tsf	TORVANE tsf	UNIT DRY WEIGHT pcf	MOISTURE CONTENT %	LIQUID LIMIT	PLASTICITY INDEX	% PASSING #200 SIEVE
			6" silty topsoil and organics ▼		0.40		0.30	56	71			
			Soft dark brown Fat Clay with organics and roots						73			
5			Very soft dark brown and black Peat	WOH					172			
									200			
10									216			
			Very soft gray Fat Clay		0.02		0.20	49	87			
15			-with trace of roots and organics, 13' to 15'									
							0.10		59			
20												
				WOH					89			
25												
			-trace roots, 28' to 30'		0.11		0.15	60	71			
30												
							0.15		95	98	68	
35												
					0.23		0.15	58	73			
40												
							0.20		80			
45												
			Soft gray green Lean Clay with		0.17		0.20	85	32			
50			silt and shell fragments									

DEPTH OF BORING: 80 Feet | GROUNDWATER: Measured at 1 foot after 24 hours

DATE: 1-12-09

LOG OF BORING B-2 (continued)

PROPOSED THE WOODLANDS RESIDENTIAL DEVELOPMENT
PATRICIA STREET
CHALMETTE, LOUISIANA

TYPE OF BORING: WET ROTARY | LOCATION: Building 3 | PSI PROJECT NO.: 254-85131-A

DEPTH, FT.	SOIL TYPE	SAMPLES	DESCRIPTION	N-BLOWS/FT.	UNCONFINED COMPRESSIVE STRENGTH tsf	HAND PENTROMETER tsf	TORVANE tsf	UNIT DRY WEIGHT pcf	MOISTURE CONTENT %	LIQUID LIMIT	PLASTICITY INDEX	% PASSING #200 SIEVE
			Soft gray green Lean Clay with silt and shell fragments									
55			Medium dense gray Silty Sand with shell fragments	12					35			37
60			Very soft gray Fat Clay with sand and silt layers	WOH					63			
65			Medium dense tan gray Silty Sand	21					25			17
70			Firm to stiff tan gray Lean Clay -with silt seams, 68' to 70'		1.20	2.5		84	41			
75			-with sand, 73' to 75'				0.15		52			
80			Loose tan gray Silty Sand with clay pockets	11					27			
85			Boring terminated at 80 feet									
90												
95												
100												

DEPTH OF BORING: 80 Feet
DATE: 1-12-09

LOG OF BORING B-3

PROPOSED THE WOODLANDS RESIDENTIAL DEVELOPMENT
PATRICIA STREET
CHALMETTE, LOUISIANA

TYPE OF BORING: WET ROTARY | LOCATION: Building 2 | PSI PROJECT NO.: 254-85131-A

DEPTH, FT.	SOIL TYPE	SAMPLES	DESCRIPTION	N-BLOWS/FT.	UNCONFINED COMPRESSIVE STRENGTH tsf	HAND PENTROMETER tsf	TORVANE tsf	UNIT DRY WEIGHT pcf	MOISTURE CONTENT %	LIQUID LIMIT	PLASTICITY INDEX	% PASSING #200 SIEVE
			6" silty topsoil and organics		0.36	0.15		60	72			
			Stiff gray brown Fat Clay with organics, shell fragments ▼				0.40		66			
5			Very soft dark gray and black Peat	WOH					164			
				WOH					179			
10					0.11		0.15	14	500			
			Very soft gray Fat Clay				0.10		94			
15			-with trace of organics, 13' to 15'									
20					0.10		0.15	63	70			
							0.10		91			
25												
30					0.15		0.15	56	77			
							0.15		78			
35												
40					0.10		0.15		76			
			-with sand/silt seams, 43' to 45'				0.15		77			
45												
			-with silt seams, 48' to 49'		0.16		0.15	54	75			
50			-with shell fragments, 49' to 50'				0.15		61			

DEPTH OF BORING: 80 Feet | GROUNDWATER: Measured at 2.5 feet upon completion

DATE: 1-12-09

LOG OF BORING B-3 (continued)

PROPOSED THE WOODLANDS RESIDENTIAL DEVELOPMENT
PATRICIA STREET
CHALMETTE, LOUISIANA

TYPE OF BORING: WET ROTARY | LOCATION: Building 2 | PSI PROJECT NO.: 254-85131-A

DEPTH, FT.	SOIL TYPE	SAMPLES	DESCRIPTION	N-BLOWS/FT.	UNCONFINED COMPRESSIVE STRENGTH tsf	HAND PENTROMETER tsf	TORVANE tsf	UNIT DRY WEIGHT pcf	MOISTURE CONTENT %	LIQUID LIMIT	PLASTICITY INDEX	% PASSING #200 SIEVE
			Very soft gray Fat Clay									
55			Very soft gray silty sandy Clay with shell fragments	3					30			53
60			Very soft gray sandy Clay	2					66			
			Very soft gray Fat Clay with sand seams		0.08		0.15	58	74			
65			Very loose brown gray Silty Sand	11			0.10		25 25			
70			Soft to stiff tan gray Sandy Lean Clay with silt seams		1.23	1.5		102	21			
75				5					23			
80					0.32	1.0		106	23			
85			Boring terminated at 80 feet									
90												
95												
100												

DEPTH OF BORING: 80 Feet
DATE: 1-12-09

LOG OF BORING B-4

PROPOSED THE WOODLANDS RESIDENTIAL DEVELOPMENT
PATRICIA STREET
CHALMETTE, LOUISIANA

TYPE OF BORING: WET ROTARY | LOCATION: Building 1 | PSI PROJECT NO.: 254-85131-A

DEPTH, FT.	SOIL TYPE	SAMPLES	DESCRIPTION	N-BLOWS/FT.	UNCONFINED COMPRESSIVE STRENGTH tsf	HAND PENTROMETER tsf	TORVANE tsf	UNIT DRY WEIGHT pcf	MOISTURE CONTENT %	LIQUID LIMIT	PLASTICITY INDEX	% PASSING #200 SIEVE
			6" topsoil and organics		0.97	1.5		52	74			
			Soft to stiff dark gray brown Fat Clay w/organics			0.75			67			
			-withsilt seams, 2' to 4' ▼									
5			Soft dark gray brown Peat		0.31	0.75		27	203			
				3								
							0.15		286			
10												
			Very soft to soft gray green Fat Clay				0.10		72			
15			-with silt seams and trace of organics 13' to 15'									
			-with trace of organics, 18' to 20'		0.14		0.15	55	86	104	72	
20												
							0.15		89			
25												
					0.12		0.15	59	73			
30												
							0.20		73			
35												
					0.28		0.15	59	70			
40												
							0.20		81			
45												
			-with silt layers 48' to 49'		0.9		0.20	60	65			
50			Very soft gray green Lean Clay w/shell fragments				0.05		27			

DEPTH OF BORING: 80 Feet | GROUNDWATER: Measured at 4 feet upon completion

DATE: 1-13-09

LOG OF BORING B-4 (continued)

PROPOSED THE WOODLANDS RESIDENTIAL DEVELOPMENT
PATRICIA STREET
CHALMETTE, LOUISIANA

TYPE OF BORING: WET ROTARY | LOCATION: Building 1 | PSI PROJECT NO.: 254-85131-A

DEPTH, FT.	SOIL TYPE	SAMPLES	DESCRIPTION	N-BLOWS/FT.	UNCONFINED COMPRESSIVE STRENGTH tsf	HAND PENTROMETER tsf	TORVANE tsf	UNIT DRY WEIGHT pcf	MOISTURE CONTENT %	LIQUID LIMIT	PLASTICITY INDEX	% PASSING #200 SIEVE
			Very soft gray green Lean Clay with shell fragments	2					41			
55			Very soft gray brown Sandy Clay with shell fragments		0.22		0.20	80	43			
60			Soft gray green Fat Clay -with sand seams, 58' to 60'				0.33		62			
65					0.10		0.20	61	67			
70			Medium gray brown Silty Sand -with clay layer, 68' to 70'						29			
75			Soft gray brown Lean Clay w/silt & sand seams -with trace of roots, 73' to 75'		0.34		0.30	99	30			
80				8					27			
			Boring terminated at 80 feet									
85												
90												
95												
100												

DEPTH OF BORING: 80 Feet
DATE: 1-13-09

LOG OF BORING B-5

PROPOSED THE WOODLANDS RESIDENTIAL DEVELOPMENT
PATRICIA STREET
CHALMETTE, LOUISIANA

TYPE OF BORING: WET ROTARY | LOCATION: Club House | PSI PROJECT NO.: 254-85131-A

DEPTH, FT.	SOIL TYPE	SAMPLES	DESCRIPTION	N-BLOWS/FT.	UNCONFINED COMPRESSIVE STRENGTH tsf	HAND PENTROMETER tsf	TORVANE tsf	UNIT DRY WEIGHT pcf	MOISTURE CONTENT %	LIQUID LIMIT	PLASTICITY INDEX	% PASSING #200 SIEVE
			6" silty sand topsoil with organics				0.50		68			
			Soft brown gray Fat Clay with organics and silt seams ▼		0.31		0.20	50	71			
5			-with trace of shell fragments, 4' to 6'				0.25		93			
			Very soft dark gray and black Peat				0.15		204			
10							0.10		499			
			Very soft gray green Fat Clay		0.09		0.20	47	100			
15			-with trace of organics, 13' to 15'									
20			-with silt layers, 18' to 20'				0.10		89			
					0.20		0.20	61	73			
25												
							0.15		77			
30												
					0.18		0.20	56	73			
35												
							0.20		62			
40												
					0.34		0.20	60	68			
45												
			Very soft gray green Sandy Clay with shell fragments	WOH					46			
50			Boring terminated at 50 feet									

DEPTH OF BORING: 50 Feet | GROUNDWATER: Measured at 2.5 feet upon completion

DATE: 1-12-09

LOG OF BORING P-1

PROPOSED THE WOODLANDS RESIDENTIAL DEVELOPMENT
PATRICIA STREET
CHALMETTE, LOUISIANA

TYPE OF BORING: SOLID STEM AUGER | LOCATION: Parking Lot | PSI PROJECT NO.: 254-85131-A

DEPTH, FT.	SOIL TYPE	SAMPLES	DESCRIPTION	N-BLOWS/FT.	UNCONFINED COMPRESSIVE STRENGTH tsf	HAND PENTROMETER tsf	TORVANE tsf	UNIT DRY WEIGHT pcf	MOISTURE CONTENT %	LIQUID LIMIT	PLASTICITY INDEX	% PASSING #200 SIEVE
			6" brown silty topsoil with organics				0.40		62			
			Very soft to soft brown gray Fat Clay with organics				0.35		74 86			
5			-with trace of shell fragments, 2' to 4'	WOH					105			
			Boring terminated at 6 feet									
10												
15												
20												
25												
30												
35												
40												
45												
50												

DEPTH OF BORING: 6 Feet | GROUNDWATER: Measured at 1.5 feet upon completion

DATE: 1-11-09

LOG OF BORING P-2

PROPOSED THE WOODLANDS RESIDENTIAL DEVELOPMENT
PATRICIA STREET
CHALMETTE, LOUISIANA

TYPE OF BORING: SOLID STEM AUGER | LOCATION: Parking Lot | PSI PROJECT NO.: 254-85131-A

DEPTH, FT.	SOIL TYPE	SAMPLES	DESCRIPTION	N-BLOWS/FT.	UNCONFINED COMPRESSIVE STRENGTH tsf	HAND PENTROMETER tsf	TORVANE tsf	UNIT DRY WEIGHT pcf	MOISTURE CONTENT %	LIQUID LIMIT	PLASTICITY INDEX	% PASSING #200 SIEVE
			6" brown silty topsoil with organics ▼				0.40		68			
			Very soft to soft dark brown gray Fat Clay with trace of roots				0.25		96			
5			Very soft brown Peat	WOH					204			
			Boring terminated at 6 feet									
10												
15												
20												
25												
30												
35												
40												
45												
50												

DEPTH OF BORING: 6 Feet | GROUNDWATER: Measured at 1 foot upon completion

DATE: 1-11-09

LOG OF BORING P-3

PROPOSED THE WOODLANDS RESIDENTIAL DEVELOPMENT
PATRICIA STREET
CHALMETTE, LOUISIANA

TYPE OF BORING: SOLID STEM AUGER | LOCATION: Parking Lot | PSI PROJECT NO.: 254-85131-A

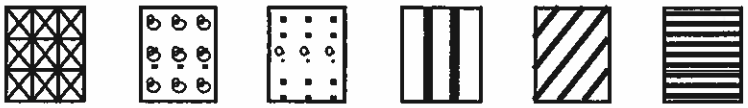
DEPTH, FT.	SOIL TYPE	SAMPLES	DESCRIPTION	N-BLOWS/FT.	UNCONFINED COMPRESSIVE STRENGTH tsf	HAND PENTROMETER tsf	TORVANE tsf	UNIT DRY WEIGHT pcf	MOISTURE CONTENT %	LIQUID LIMIT	PLASTICITY INDEX	% PASSING #200 SIEVE
			6" brown silty topsoil with organics				0.50		71			
			Soft dark brown gray Fat Clay with trace of shell fragments ▼				0.35		73			
5			Very soft brown Peat						237			
			Boring terminated at 6 feet									
10												
15												
20												
25												
30												
35												
40												
45												
50												

DEPTH OF BORING: 6 Feet | GROUNDWATER: Measured at 1.5 feet upon completion

DATE: 1-13-09

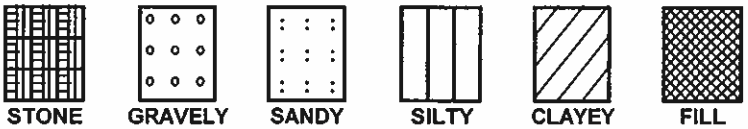
KEY TO TERMS AND SYMBOLS USED ON LOGS

SOIL TYPE



SAMPLER TYPE

MODIFIERS



UNIFIED SOIL CLASSIFICATION SYSTEM - ASTM D 2487 (1980)

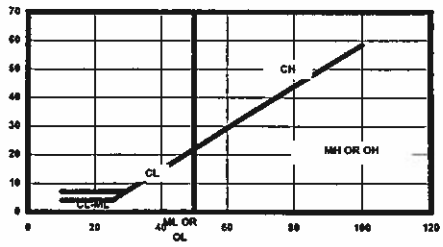
MAJOR DIVISIONS			LETTER SYMBOL	TYPICAL DESCRIPTIONS
COARSE GRAINED SOILS LESS THAN 50% PASSING NO. 200 SIEVE	GRAVEL & GRAVELY SOILS LESS THAN 50% PASSING NO. 4 SIEVE	CLEAN GRAVEL (LITTLE OR NO FINES	GW	WELL GRADED GRAVEL, GRAVEL-SAND MIXTURES WITH LITTLE OR NO FINES
			GP	POORLY GRADED GRAVEL, GRAVEL-SAND MIXTURES WITH LITTLE OR NO FINES
		W/ APPRECIA BLE FINES	GM	SILTY GRAVEL, GRAVEL-SAND-SILT MIXTURES
			GC	CLAYEY GRAVELS, GRAVEL-SAND-CLAY MIXTURES
	SANDS MORE THAN 50% PASSING NO. 4 SIEVE	CLEAN SANDS LITTLE FINES	SW	WELL GRADED SAND, GRAVELY SAND (LITTLE FINES)
			SP	POORLY GRADED SANDS, GRAVELY SAND (LFINES)
		SANDS WITH APPREA. FINES	SM	SILTY SANDS, SAND-SILT MIXTURES
			SC	CLAYEY SANDS,SAND-CLAY MIXTURES
FINE GRAINED SOILS MORE THAN 50% PASSING NO. 200 SIEVE	SILTS AND CLAYS LIQUID LIMIT LESS THAN 50		ML	INORGANIC SILTS & VERY FINE SANDS,ROCK FLOUR SILTY OR CLAYEY FINE SANDS OR CLAYEY SILT W/ LOW PI
			CL	INORGANIC CLAY OF LOW TO MEDIUM PI LEAN CLAY GRAVELY CLAYS, SANDY CLAYS, SILTY CLAYS
			OL	ORGANIC SILTS & ORGANIC SILTY CLAYS OF LOW PI
	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 MED TO HIGH PI, ORGANIC SILT
HIGHLY ORGANIC SOIL			PT	PEAT AND OTHER HIGHLY ORGANIC SOILS
UNCLASSIFIED FILL MATERIALS				ARTIFICIALLY DEPOSITED AND OTHER UNCLASSIFIED SOILS AND MAN-MADE SOIL MIXTURES

CONSISTENCY OF COHESIVE SOILS

CONSISTENCY	SHEAR STRENGTH IN TONS/FT²
VERY SOFT	0. TO 0.125
SOFT	0.125 TO 0.25
FIRM	0.25 TO 0.5
STIFF	0.5 TO 1.0
VERY STIFF	1.0 TO 2.0
HARD	> 2.0 OR 2.0+

RELATIVE DENSITY - GRANULAR SOILS

CONSISTENCY	N-VALUE (BLOWS/FOOT)
VERY LOOSE	0-4
LOOSE	4-9
MEDIUM DENSE	10-29
DENSE	30-49
VERY DENSE	> 50 OR 50+



ABBREVIATIONS

HP - HAND PENETROMETER
TV - TORVANE
MV - MINIATURE VANE
UC - UNCONFINED COMPRESSION TEST
UU - UNCONSOLIDATED UNDRAINED TRAIXIAL
CU - CONSOLIDATED UNDRAINED

NOTE: PLOT INDICATES SHEAR STRENGTH AS OBTAINED BY ABOVE TESTS

▼ DELAYED GROUNDWATER LVL

▽ LEVEL GROUNDWATER ENCOUNTERED

CLASSIFICATION OF GRANULAR SOILS

U.S. STANDARD SIEVE SIZE(S)

6"	3"	3/4"	4	10	40	200

BOUL--DERS	COBBLES	GRAVEL		SAND			SILT OR CLAY	CLAY
		COARSE	FINE	COARSE	MEDIUM	FINE		

152	76.2	19.1	4.76	2.0	0.42	0.074	0.002

GRAIN SIZE IN MM