PSI Information To Build On
Engineering • Consulting • Testing

August 6, 2008

NMD, Inc.
511 Fremaux Avenue
Slidell, Louisiana 70458

Attn.: Mr. Ethan Jolly

Re: Geotechnical Engineering Report
Proposed Office Building
Amber Street and Coral Avenue
Slidell, Louisiana
PSI File Number: 254-85068-1

Dear Mr. Jolly:

Professional Service Industries, Inc. 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 do not hesitate to call.

Respectfully submitted,
PROFESSIONAL SERVICE INDUSTRIES, INC.

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GEOTECHNICAL ENGINEERING REPORT

PROPOSED OFFICE BUILDING
AMBER STREET AND CORAL AVENUE
SLIDELL, LOUISIANA

PSI FILE NUMBER 254-85068-1

PREPARED FOR

NMD, INC.
511 FREMAUX AVENUE
SLIDELL, LOUISIANA 70458

AUGUST 6, 2008

BY

PROFESSIONAL SERVICE INDUSTRIES, INC.
724 CENTRAL AVENUE
JEFFERSON, LOUISIANA 70121

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EXECUTIVE SUMMARY

An exploration and evaluation of the subsurface conditions have been completed for the proposed new office building that will be constructed at the intersection of Amber Street and Coral Avenue in Slidell, Louisiana.

The area of the proposed construction is currently occupied by two buildings that were impacted by Hurricane Katrina. The buildings and associated parking lot will be demolished to accommodate the new construction. The project will include the construction of a two (2) story office building of concrete block construction having a footprint of approximately 6000 square feet. In addition a parking lot will be provided to accommodate the facility. Column and wall loading information were not available at this time and are assumed to be on the order of 50 kips and three (3) kips per linear foot, respectively. Detailed grading information was not available at the time this report was prepared. However, it is understood that less than two (2) feet of fill will be needed to achieve the floor slab design elevation at this site.

As requested, five (5) soil borings were drilled to depths ranging from 6 to 30 feet below existing ground surface. Based on the borings, about eight (8) to ten inches of brown silty topsoil with organics was encountered at the ground surface. Below this, there was firm gray and brown sandy silt, silt, or lean clay with silt to a depth of two (2) feet. This was followed by firm to stiff gray and brown sandy clay to lean clay to depths ranging from six (6) to 12 feet. Below this, there was very stiff tan and gray fat clay to a depth of at least 30 feet, the maximum depth explored. Groundwater was measured at a depth of 23 feet below ground surface upon completion of drilling.

The near surface silt or silty clay soils generally encountered to a depth of at least two (2) feet below existing ground surface are moisture sensitive soils. These soils could lose their strength and become unstable when saturated with water. Depending on the site conditions encountered at the time of construction, these potentially unstable soils may have to be undercut and replaced with controlled compacted structural fill.

Based on the field data and laboratory test results, the proposed office building may be supported on a shallow foundation system provided the site is prepared as described in this report. Spread footings and continuous footings bearing at least two (2) feet below finished grades in the naturally occurring firm clay or within compacted structural fill could be designed for maximum allowable bearing pressures of 2,500 psf and 2,000 psf, respectively, based on dead loads and design live loads. Details related to site development, foundation and pavement design and construction considerations are included in the 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 new office building to be constructed at the intersection of Amber Street and Coral Avenue in Slidell, Louisiana. Our services were accomplished in general accordance with PSI Proposal No. 254-850040 dated February 28, 2008 and was authorized on May 22, 2008.

Project Description

The area of the proposed construction is currently occupied by two (2) buildings that were impacted by Hurricane Katrina. The buildings and associated parking lot will be demolished to accommodate the new construction. The project will include the construction of a (2) story office building along with associated parking areas and drives. The structure will be of concrete block construction having a footprint of approximately 6000 square feet. Column and wall loading information were not available at this time and are assumed to be on the order of 50 kips and three (3) kips per linear foot, respectively.

The geotechnical recommendation presented in this report is based on the available project information, building location, 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 recommendation presented in this report if appropriate and if desired by the client. PSI will not be responsible for the implementation of its recommendation 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 new office building. As requested, five (5) soil borings were drilled to depths ranging from six (6) to 30 feet below the existing ground surface. Our scope of services included a reconnaissance of the project site, drilling the requested soil borings, performing 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:

- Foundation type, depth, allowable bearing capacity and estimated settlement;
- Site preparation and fill compaction recommendations;
- General pavement design criteria and pavement subgrade preparation;
- Comments regarding factors that will impact construction and performance of the proposed construction.

The scope of geotechnical 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 log regarding odors, colors, and unusual or suspicious items or conditions are strictly for informational purposes. Prior to development of this site, an environmental assessment is advisable.

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 construction is located at the intersection of Amber Street and Coral Avenue in Slidell, Louisiana. The property is bounded by Amber Street to west, Coral Avenue to the south, and wooded area to the east and north sides. The subject property is currently occupied by two (2) buildings and a parking lot that were impacted by Hurricane Katrina. Portions of the site are covered with grass. The buildings and associated parking lot will be demolished to accommodate the new construction. At the time of our field exploration, the ground surface appeared level, firm and dry.

Detailed grading information was not available at the time this report was prepared. However, it is understood that less than two (2) feet of fill will be needed to achieve the floor slab design elevation.

Field Exploration

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

The subsurface soil condition at this site was characterized by five (5) soil borings drilled to depths ranging from 6 to 30 feet. Borings B-1 and B-2 were drilled to 30 and 15 feet in the building footprint, respectively. For the design of the parking lot, three (3) borings (P-1 through P-3) were advanced to a depth of 6 feet. The boring depths are in reference to the existing ground surface at the time of the field exploration. The location and depth of the borings were provided

to us by others and was located in the field by PSI personnel. The approximate location of the borings is indicated on the diagram included in the Appendix.

Drilling and Sampling Procedures

The borings were drilled with a truck mounted drill rig equipped with a rotary head. Hollow stem auger drilling 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 three (3) inch diameter thin-wall tube samplers (Shelby tubes) 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.

Standard Penetration Tests (SPT) were performed at intervals 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 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 successive increments of six 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 soils and thereby provide a basis for estimating the relative strength and compressibility of the soil profile components.

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

Laboratory Testing Program

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

The laboratory testing program included visual classification and water content tests on all samples. In addition, selected samples were subjected to unconfined compressive strength testing, Atterberg Limits, and percent finer than a #200 sieve tests. Additional estimates of undrained shear strength and unconfined compressive strength were made by the use of a torvane and pocket penetrometer, respectively.

All phases of the laboratory testing program were conducted in general accordance with applicable ASTM Specifications. The results of these tests are presented on the accompanying boring logs in the Appendix.

Subsurface Conditions

Based on the borings, about eight (8) to ten inches of brown silty topsoil with organics was encountered at the ground surface. Below this, there was firm gray and brown sandy silt, silt, or lean clay with silt to a depth of two (2) feet. This was followed by firm to stiff gray and brown sandy clay to lean clay to depths ranging from six (6) to 12 feet. Below this, there was very stiff tan and gray fat clay to a depth of at least 30 feet, the maximum depth explored.

The above subsurface descriptions are of a generalized nature to highlight the major subsurface satisfaction 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 these borings 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

Groundwater was measured at a depth of 23 feet below existing ground surface during drilling. The groundwater level presented here was measured during the drilling operations and it may not have become fully static at the time of measurement. The groundwater level could fluctuate due to seasonal precipitation, drought and variation in weather conditions. In view of the above, it is recommended that the contractor determine the actual groundwater levels at the site at the time of the construction services.

FOUNDATION DESIGN AND RECOMMENDATIONS

General

The type and depth of foundation suitable for a given structure primarily depends on several factors including the subsurface conditions, 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 movement which the structure can withstand without damage.

Based on the field data and laboratory tests results, the proposed facility may be supported on a shallow foundation system, provided the site is prepared as recommended below.

Site Preparation

Site preparation is expected to include, but not be limited to the demolition and removal of the existing buildings, foundation elements, and pavements. The utility lines in the area should then be located and re-routed as necessary. Furthermore, any topsoil, vegetation, or any other deleterious materials should be stripped and removed from the areas to be developed. Based on the borings, about 10 to 12 inches of brown silty topsoil with organics was encountered at this site. However, the actual stripping depth should be determined by a representative of the geotechnical engineer at the time of construction.

The near surface silt or silty clay soils encountered to a depth of at least two (2) feet are potentially unstable soils. These soils are moisture sensitive and could lose their strength and become unstable when saturated with water. Therefore, depending upon the conditions at the time of construction, these potentially unstable soils may have to be undercut and replaced with compacted structural fill. Since the building slabs and foundation elements will be removed, it is likely the upper 24 inches of material will become disturbed and will require recompaction prior to placement of additional fill. The actual depth of undercutting should be determined by a representative of the geotechnical engineer at the time of construction.

The exposed subgrade in the building and parking areas should then be proof-rolled 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 structural fill. The proof rolling, undercutting and filling activities should be witnessed by a representative of the geotechnical engineer and should be performed during a period of dry weather.

After subgrade preparation has been completed, fill placement may begin. 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. The structural fill materials should be free of organic or other deleterious materials, have a maximum particle size less than 2 inches and have a liquid limit less than 40 and plasticity index more than 10 but less than 20. Locally available clayey sand or sandy clay is recommended for use as structural fill.

The structural fill should be compacted to at least 95 percent of the soil's maximum dry density as determined by ASTM Designation D698 (Standard Proctor). It should be placed in maximum lifts of eight inches of loose material and should be compacted within the range of one (1) percentage point below to three (3) percentage points above the optimum moisture content value. 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 placement of subsequent lifts.

The compacted fill should extend at least five (5) feet beyond the building perimeter prior to sloping. Adequate drainage must be provided prior to and during site work. The site should be graded to promote rapid runoff.

Foundation Recommendations

Provided the site is prepared as described in the "Site Preparation" section of this report, the proposed office building can be supported on a shallow foundation system. Spread footings and continuous footings placed in the naturally occurring firm clay or within compacted structural fill may be designed for maximum allowable bearing capacities of 2,500 psf and 2,000 psf, respectively. The footings should be placed a minimum of 24 inches below the finished grade. Minimum dimensions of 18 inches for wall footings and 24 inches for spread footings should be used in foundation design to minimize the possibility of a localized bearing failure.

The uplift resistance of shallow spread footings formed in open excavations should be limited to the weight of the foundation concrete and the soil above it. For preliminary design purposes, the uplift resistance can be computed by using a total unit weight of 115 pcf for the structural fill placed and compacted above the footing and a unit weight of 150 pcf for the concrete. Concrete reinforcing steel should be properly sized to resist uplift forces. We recommend that a factor of safety of at least 1.5 be used when determining the allowable uplift resistance of spread footings.

Soil resistance to horizontal forces is developed by lateral earth pressures acting on the face of the footing and by friction or adhesion on the footing base. We recommend that the allowable passive pressure be computed for spread footings below grade using the following equation:

$$P_p = 1500 + 120\ H\ (\text{Clay})$$

where P_p is the lateral soil resistance in psf (pounds per square foot) and H is the depth in feet. For exterior footings, H is measured from one (1) foot below adjacent finished grade, provided that the adjacent finished grade extends level and at least beyond a point that makes a 45-degree angle from the bottom of the exterior footing to the finished ground surface.

The top foot of passive resistance at foundations should be neglected unless the ground surface around the footing is covered by concrete or pavement. The resistance to sliding of spread footing bearing in structural fill can be computed by multiplying the footing base contact area by a sliding friction factor of 0.38. Spread footings should also be sized to resist overturning due to moment forces. Concrete reinforcing steel should be properly sized to resist horizontal and moment forces.

The foundation excavations should be observed by a representative of PSI prior to concrete placement to assess that the foundation materials are capable of supporting the design loads and are consistent with the materials discussed in this report. Loose soil zones encountered should be removed and replaced with adequately compacted fill as directed by the geotechnical engineer. Cavities formed as a result of excavation of loose soil zones should be backfilled with compacted structural fill or graded compacted crushed stone, as determined by the Geotechnical Engineer.

Footing excavations should be observed and concrete placed as quickly as possible to avoid exposure of the footing bottoms to wetting and drying. Surface run-off water should be drained away from the excavations and not be allowed to pond. The foundation concrete should be placed during the same day the excavation is made. If it is required that footing excavations be left open for more than one day, they should be protected to reduce evaporation or entry of moisture.

Settlement

Based on the field and laboratory test results as well as the anticipated foundation loads, we estimate that the maximum foundation settlement will be less than one (1) inch. Differential settlement is estimated to be about ½ inch.

Floor Slab

The floor slab for the proposed building may be soil supported on at least two (2) feet of compacted low plasticity structural fill. Preparation of the subgrade should be performed as recommended in this report to identify any soft or unstable soils which should be removed from the floor slab areas prior to fill placement and/or floor slabs construction.

Polyethylene sheeting should be placed between the fill and the floor slabs to act as a vapor barrier. The floor slabs should have an adequate number of joints to reduce cracking resulting from any differential movement and shrinkage.

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 the project.

Detailed grading information was not available at the time this report was prepared. However, we understand that minimum fill will be required in the parking area to achieve the parking lot design grades. Actual traffic loading condition was not provided to us. However, the traffic is assumed to consist mainly of cars, light trucks and heavy delivery trucks and occasional 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. The pavement subgrade should be prepared as discussed in the site preparation section of this report.

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, typical pavement sections can be used as follows:

FLEXIBLE PAVEMENT Recommended Minimum Thicknesses, inches		
Pavement Materials	Light Duty	Heavy Duty
Asphaltic Concrete Wearing Course	3	4
Compacted 610 Limestone Base	8	10
Compacted Structural Fill	12	12

RIGID PAVEMENT Recommended Minimum Thicknesses, inches		
Pavement Materials	Light Duty	Heavy Duty
Portland Cement Concrete	5	6
Compacted Granular Fill	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 is recommended.

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 and the American Concrete Institute guidelines. Joints should be sealed to reduce the potential for water infiltration into pavement joints and subsequent infiltration into the supporting soils. Load transfer devices at the pavement joints should be designed in accordance with accepted codes. The concrete should have a minimum compressive strength of 3,500 psi at 28 days. The concrete should also be designed with 5 ± 1 percent entrained air to improve workability and durability.

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 granular fill under the rigid pavement should meet the requirements of the Louisiana Standard Specifications for Roadway and Bridge Construction and should be compacted to 95 percent of the maximum dry density as determined by ASTM D698.

CONSTRUCTION CONSIDERATIONS

It is recommended that PSI be retained to provide observation and testing of construction activities involved in the foundations and pavements and other related activities of this project. PSI cannot accept any responsibility for any conditions which deviated from those described in this report, nor for the performance of the foundations and pavements if not engaged to also provide construction observation and testing for this project.

Drainage and Groundwater Concerns

Water should not be allowed to collect in the foundation excavations, in the floor slab area, or on prepared subgrades of 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 perimeter of the building.

Groundwater was encountered at a depth of 23 feet below existing site grades in the building area. However, it is possible that seasonal variations will cause fluctuations, or a water table to be present in the upper soils at a later time. It should be noted that a perched water condition may exist depending on rainfall at the time of construction due to the sandy soils underlain by the clay soils. 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 Stated Department of Labor, Occupational Safety and Health Administration (OSHA) amended its "Construction Standards for Excavations, 29 CFR, part 1928, Subpart P". This document was issued to better ensure the safety of workmen entering trenches or excavations.

It is mandated by this federal regulation that excavations, whether they be utility trenches, basement excavation or footing excavation, 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 or other regulations.

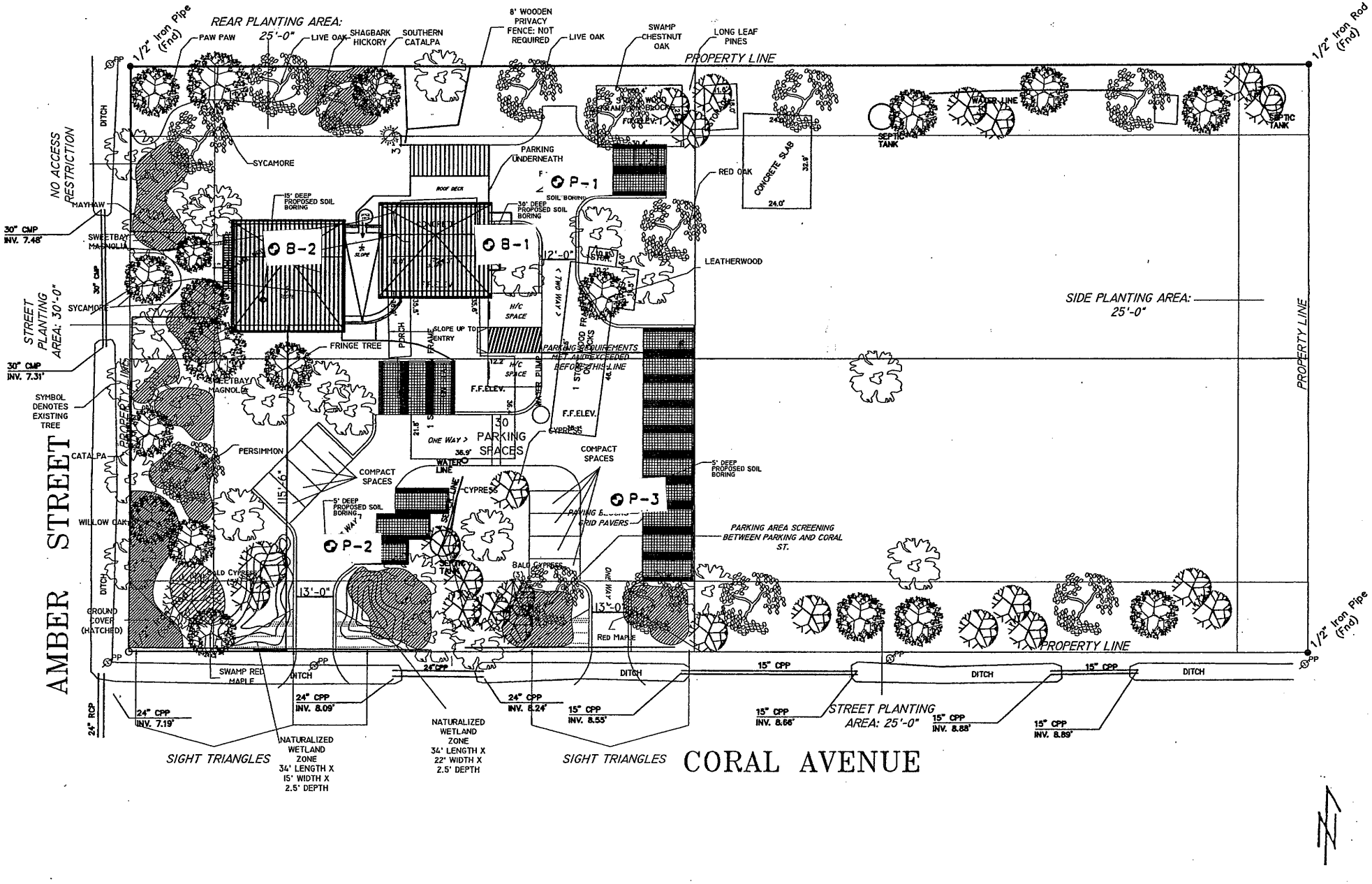
REPORT LIMITATIONS

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 advise 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 NMD, Inc. for the specific application to the proposed new office building to be constructed at the intersection of Amber Street and Coral Avenue in Slidell, Louisiana.

APPENDIX


REAR PLANTING AREA: 25'-0"
1/2" Iron Pipe (Fnd)
PAW PAW
LIVE OAK
SHAGBARK HICKORY
SOUTHERN CATALPA
8' WOODEN PRIVACY FENCE: NOT REQUIRED
LIVE OAK
SWAMP CHESTNUT OAK
LONG LEAF PINES
PROPERTY LINE
1/2" Iron Rod (Fnd)
NO ACCESS RESTRICTION
STREET PLANTING AREA: 30'-0"
AMBER STREET
SYCAMORE
PARKING UNDERNEATH
P-1
RED OAK
CONCRETE SLAB
WATER LINE
SEPTIC TANK
MAYHAW
SWEETBAY MAGNOLIA
30" CMP INV. 7.48'
15' DEEP PROPOSED SOIL BORING
30' DEEP PROPOSED SOIL BORING
B-2
B-1
ROOF DECK
LEATHERWOOD
SIDE PLANTING AREA: 25'-0"
PROPERTY LINE
FRINGE TREE
PORCH
SLOPE UP TO ENTRY
H/C SPACE
PARKING REQUIREMENTS MET AND EXCEEDED BEFORE THIS LINE
F.F.ELEV.
30 PARKING SPACES
ONE WAY
SYMBOL DENOTES EXISTING TREE
CATALPA
PERSIMMON
COMPACT SPACES
WATER LINE
CYPRESS
5' DEEP PROPOSED SOIL BORING
P-3
P-2
PARKING AREA SCREENING BETWEEN PARKING AND CORAL ST.
WILLOW OAK
BALD CYPRESS
SEPTIC TANK
GROUND COVER (HATCHED)
RED MAPLE
SWAMP RED MAPLE
DITCH
24" CPP INV. 7.19'
24" CPP INV. 8.09'
24" CPP INV. 8.24'
15" CPP INV. 8.55'
15" CPP INV. 8.66'
15" CPP INV. 8.88'
15" CPP INV. 8.89'
24" RCP
SIGHT TRIANGLES
NATURALIZED WETLAND ZONE 34' LENGTH X 15' WIDTH X 2.5' DEPTH
NATURALIZED WETLAND ZONE 34' LENGTH X 22' WIDTH X 2.5' DEPTH
STREET PLANTING AREA: 25'-0"
CORAL AVENUE

LOG OF BORING B-1

PROPOSED OFFICE BUILDING
AMBER STREET AND CORAL AVENUE
SLIDELL, LOUISIANA

TYPE OF BORING: HOLLOW STEM AUGER | LOCATION: BUILDING AREA | PSI PROJECT NO.: 254-85068

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
			10" brown silty topsoil with organics	7					16			69
			Firm brown Sandy Silt									
			-with organics, 0 to 2'	6					14			
5			Firm tan, light gray Sandy Lean Clay -gravel, 4' to 6'	3					18			71
			Very stiff tan, light gray Lean Clay with silt seams and sand pockets		2.63	2.0		94	23			
10						3.0			22	40	21	
			Very stiff to firm tan, light gray Fat Clay with silt seams and sand pockets		2.2	1.0		97	26			
15												
						1.5			37			
20												
			▽		0.46	0.50		75	46			
25												
						2.0			39			
30												
			Boring terminated at 30 feet									
35												
40												
45												
50												

DEPTH OF BORING: 30 feet | GROUNDWATER: Encountered at 23 feet during drilling

DATE: 6-13-08

LOG OF BORING B-2

PROPOSED OFFICE BUILDING
AMBER STREET AND CORAL AVENUE
SLIDELL, LOUISIANA

TYPE OF BORING: HOLLOW STEM AUGER | LOCATION: BUILDING AREA | PSI PROJECT NO.: 254-85068

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
			8" brown silty topsoil with organics		1.03	1		113	16	26	11	
			Firm tan Lean Clay with silt									
			Stiff tan Lean Clay			1.5			21			
5			Very stiff dark brown Sandy Clay with organics and gravel			3.5			16			
			Very stiff to stiff tan, light gray Fat Clay with silt seams and sand pockets		2.12	2.5		110	17	50	33	
					1.86	1.5		104	20			
10												
						3.0			26			
15			Boring terminated at 15 feet									
20												
25												
30												
35												
40												
45												
50												

DEPTH OF BORING: 15 feet | GROUNDWATER: Not encountered during drilling

DATE: 6-13-08

LOG OF BORING P-1

PROPOSED OFFICE BUILDING
AMBER STREET AND CORAL AVENUE
SLIDELL, LOUISIANA

TYPE OF BORING: HOLLOW STEM AUGER | LOCATION: PARKING AREA | PSI PROJECT NO.: 254-85068

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
			8' brown silty topsoil with organics	7					17			
			Firm tan, light gray Sandy Lean Clay with silt seams	8					22			
5				6					20			
			Boring terminated at 6'									
10												
15												
20												
25												
30												
35												
40												
45												
50												

DEPTH OF BORING: 6 Feet | GROUNDWATER: Not encountered during drilling

DATE: 6/13/08

LOG OF BORING P-2

PROPOSED OFFICE BUILDING
AMBER STREET AND CORAL AVENUE
SLIDELL, LOUISIANA

TYPE OF BORING: HOLLOW STEM AUGER | LOCATION: PARKING AREA | PSI PROJECT NO.: 254-85068

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
			10" brown silty topsoil with organics Firm brown Sandy Clay with silt	4					16			68
5			Firm tan, light gray Lean to Fat Clay with silt seams and sand pockets	7 8					19 21			
10			Boring terminated at 6 feet									
15												
20												
25												
30												
35												
40												
45												
50												

DEPTH OF BORING: 6 Feet | GROUNDWATER: Not encountered during drilling

DATE: 6/13/08

LOG OF BORING P-3

PROPOSED OFFICE BUILDING
AMBER STREET AND CORAL AVENUE
SLIDELL, LOUISIANA

TYPE OF BORING: HOLLOW STEM AUGER | LOCATION: PARKING AREA | PSI PROJECT NO.: 254-85068

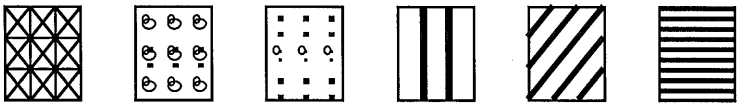
DEPTH, FT.	SOIL TYPE	SAMPLES	DESCRIPTION	N-BLOWS/FT.	UNCONFINED COMPRESSIVE STRENGTH tsf	HAND PENTROMETER tsf	TORVANE tsf	UNIT DRY WEIGHT pcf	MOISTURE CONTENT %	LIQUID LIMIT	PLASTICITY INDEX	% PASSING #200 SIEVE
			8" brown silty topsoil with organics	5					18			
			Firm brown to tan, light gray Sandy Lean Clay	6					16			74
5				8					17			
			Boring terminated at 6 feet									
10												
15												
20												
25												
30												
35												
40												
45												
50												

DEPTH OF BORING: 6 Feet | GROUNDWATER: Not encountered during drilling

DATE: 6/13/08

KEY TO TERMS AND SYMBOLS USED ON LOGS

SOIL TYPE

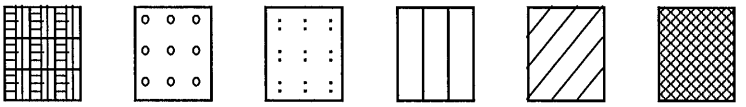


ROCK GRAVEL SAND SILT CLAY PEAT

SAMPLER TYPE

NO SAMPLE | AUGER SAMPLE | SHELBY TUBE | SPLIT SPOON

MODIFIERS



STONE GRAVELY SANDY SILTY CLAYEY FILL

NO RECOVERY | ROCK CORE | 2" SHELBY TUBE | TXDOT CONE

UNIFIED SOIL CLASSIFICATION SYSTEM - ASTM D 2487 (1980)

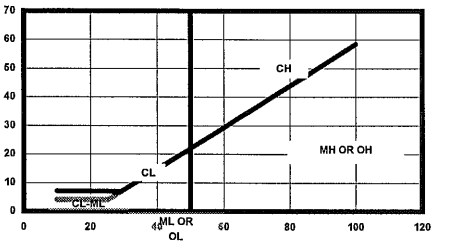
MAJOR DIVISIONS			LETTER SYMBOL	TYPICAL DESCRIPTIONS
COARSE GRAINED SOILS LESS THAN 50% PASSING NO. 200 SIEVE	GRAVEL & GRAVELY SOILS LESS THAN 50% PASSING NO. 4 SIEVE	CLEAN GRAVEL (LITTLE OR NO FINES	GW	WELL GRADED GRAVEL, GRAVEL-SAND MIXTURES WITH LITTLE OR NO FINES
			GP	POORLY GRADED GRAVEL, GRAVEL-SAND MIXTURES WITH LITTLE OR NO FINES
		W/ APPRECIABLE 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 (L.FINES)
		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/FT^2
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