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Exhibit AA.
AC Commercial Site Preliminary Geotechnical Engineering Report

SITE ENGINEERING, INC.
SELECTION ▪ INVESTIGATION ▪ TESTING ▪ ENGINEERING

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April 7, 2015

AC Commercial Site Preliminary Geotechnical Engineering Report

Mr. Jeffrey Cagan
Cagan Management Group, Inc.
3856 Oakton Street
Skokie, Illinois 60076

RE: Geotechnical Engineering Services Report
Proposed "The Glen on Ambassador" Apartments
Ambassador Caffery Parkway near Hardware Road
Broussard, Louisiana
SITE Engineering Project 15-G013-01

Dear Mr. Cagan,

This report transmits the results of our geotechnical exploration for the above referenced project. The investigation was performed in accordance with SITE Engineering Proposal Number 15-024G dated February 20, 2015. Authorization to proceed with these services was provided in the form of our signed proposal executed by Mr. Jeffrey Cagan of Cagan Management Group, Inc. on February 23, 2015.

The purpose of this exploration was to investigate the existing subsurface conditions at the site and analyze these conditions for support of the proposed structures. This report includes the results of our field and laboratory testing and provides recommendations for site preparation, foundation and pavement design, and construction.

We appreciate the opportunity to provide our services to your project and look forward to working with you in the future. If you have any questions pertaining to this report, or if we may be of further service, please do not hesitate to contact our office.

Sincerely,
SITE ENGINEERING, INC.

Clint S. McDowell, P.E.
President

Distribution: 3 – Above

SITE ENGINEERING, INC.

GEOTECHNICAL ENGINEERING SERVICES REPORT

PROPOSED "THE GLEN ON AMBASSADOR" APARTMENTS
AMBASSADOR CAFFERY PARKWAY NEAR HARDWARE ROAD
BROUSSARD, LOUISIANA

SITE ENGINEERING REPORT NUMBER: 15-G013-01

Prepared For

Mr. Jeffrey Cagan
Cagan Management Group, Inc.
3856 Oakton Street
Skokie, Illinois 60076

April 7, 2015

By

SITE ENGINEERING, INC.
650 Albertson Parkway
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Project Engineer

Clint S. McDowell, P.E. (#27983)
President

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1.0 EXECUTIVE SUMMARY

SITE Engineering, Inc. has completed an exploration and evaluation of the subsurface conditions for the proposed new apartment complex to be constructed on Ambassador Caffery Parkway near Hardware Road in Broussard, Louisiana. The project will consist of the construction of seventeen (17) two-story, multi-family residential structures and one (1) community clubhouse/leasing office building. The plan areas of the proposed apartment buildings will be on the order of 9,000 square feet. The type of construction is understood to consist of wood-framing with brick and/or stucco exterior finishes and at-grade concrete first floor slabs.

The subsurface conditions in the area intended for construction were explored by the performance of soil test borings. Our scope of services included drilling a total of twenty-five (25) borings to depths ranging from 5 to 25 feet below the existing ground surface. At the time of the field exploration, the majority of the subject site was being utilized as an agricultural crop (sugar cane) field. The furrows throughout the site were approximately 12 inches in depth. A drainage canal (coulee) traversed the property generally in a northwestern/southeastern direction. The surface of the site was somewhat saturated and in a soft condition due to the recent rainfall. It should be noted that standing water covered portions of the subject property.

The borings generally encountered 7 to 10 inches of lean clay topsoil. These surficial materials were underlain by very stiff to very soft lean clay soils to the boring completion depths of 5 feet within the pavement borings (B-21 through B-25), 15 feet within the pond borings (B-19 & B-20), 20 feet within the clubhouse boring (B-18), and to depths ranging from 17 to 22 feet within the apartment building borings (B-1 through B-17). Below these depths, the apartment building borings encountered firm to very stiff fat clay, lean clay, and sandy lean clay soils extending to a depth of at least 25 feet, the maximum depth explored.

Groundwater was not encountered during the drilling operations within the depths explored by the borings performed at this site. The building and pond borings (B-1 through B-20) were allowed to remain open for a period of about 24 hours at which time free water was present at depths ranging from 4 to 14 feet below the existing ground surface. As previously mentioned, at the time of drilling surficial water covered some of the subject site. Therefore, the near surface delayed groundwater readings may have been caused by surface water infiltration into the boreholes. The boring logs included in the appendix of this report should be reviewed for specific soil and groundwater information at each boring location.

The near surface clay soils encountered in the borings performed at the site are considered fair to good in strength and support capabilities and low in shrink/swell (volume change) potential. Provided the site preparation recommendations presented in this report are followed, the planned structures may be supported on relatively shallow foundation systems consisting of isolated spread footings, continuous wall footings, and grade beams. Recommendations for both rigid and flexible pavement systems are also being provided. 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.

2.0 PROJECT INFORMATION

2.1 Project Authorization

SITE Engineering, Inc. has completed a geotechnical exploration for the proposed “The Glen on Ambassador” apartment complex to be constructed on Ambassador Caffery Parkway near Hardware Road in Broussard, Louisiana. The investigation was performed in accordance with SITE Engineering Proposal Number 15-024G dated February 20, 2015. Authorization to proceed with these services was provided in the form of our signed proposal executed by Mr. Jeffrey Cagan of Cagan Management Group, Inc. on February 23, 2015.

2.2 Project Description

The project will consist of the construction of seventeen (17) two-story, multi-family residential structures and one (1) community clubhouse/leasing office building. The plan areas of the proposed apartment buildings will be on the order of 9,000 square feet. The type of construction is understood to consist of wood-framing with brick and/or stucco exterior finishes and at-grade concrete first floor slabs.

Structural loads associated with the proposed construction have not been provided at this time. However, for purposes of this report, it is anticipated that wall loads will be on the order of 3 to 4 kips per linear foot. Concentrated loads associated with support columns or masonry fireplaces, if planned, should be less than 20 kips in compression and/or uplift (tension).

Pavement areas to provide parking for passenger vehicles and associated drives will be constructed adjacent to the proposed structures. Furthermore, a road providing access from Ambassador Caffery Parkway into the proposed development will also be constructed. Traffic loading information including the types of vehicles and frequencies has not been provided at this time. However, it is anticipated that traffic will consist mainly of passenger vehicles with weekly passes of larger vehicles such as delivery trucks, garbage collection vehicles, and moving trucks.

Existing site topographic information and proposed finished grades have also not been provided. For the purpose of this report, we have assumed that less than 2 feet of fill will be required above existing site grades to reach design elevation in the proposed building construction areas. The pavement areas are expected to be constructed at or very near existing site grades and, therefore, should require less than about one foot of cut and/or fill to reach design elevation. Two (2) detention ponds will be excavated on the subject property. We have assumed it will be desirable to utilize soil excavated from the ponds as structural fill to establish design grades within the proposed building and pavement construction areas.

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

2.3 Purpose and Scope of Services

The purpose of this geotechnical investigation was to explore the subsurface conditions at the site to enable an evaluation of an acceptable foundation system for the proposed project. Our scope of services included drilling a total of twenty-five (25) soil test borings to depths ranging from 5 to 25 feet below the existing ground surface, select laboratory testing of the sampled subsurface soils, 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 general recommendations regarding the following:

- General recommendations for site preparation, grading, and fill placement;
- Foundation design recommendations including recommended bearing depths, load carrying capacities, and estimates of settlement for shallow foundation elements;
- Discussion of the usability of excavated soils from the proposed ponds as structural fill elsewhere on the site;
- Recommendations regarding backfilling of the existing drainage feature;
- General pavement design criteria and subgrade preparation for both rigid and flexible pavement systems;
- Recommendations for utility trenches and excavations, and;
- Recommendations for general site preparation including organic and unstable soil removal and imported structural fill criteria and compaction requirements.

Our services did not include pavement design recommendations or 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 of this site, an environmental assessment is advisable. SITE Engineering can provide these services if requested.

3.0 SITE AND SUBSURFACE CONDITIONS

3.1 Project Location and Site Description

The new apartments will be constructed on Ambassador Caffery Parkway near Hardware Road in Broussard, Louisiana. At the time of the field exploration, the site was observed to be bordered by Hardware Road to the east; by Ambassador Caffery Parkway to the west; by undeveloped, heavily wooded land to the north, and; by existing commercial and residential structures to the south.

At the time of the field exploration, the majority of the subject site was being utilized as an agricultural crop (sugar cane) field. The furrows throughout the site were approximately 12 inches in depth. A drainage canal (coulee) traversed the property generally in a northwestern/southeastern direction. The surface of the site was somewhat saturated and in a soft condition due to the recent rainfall. It should be noted that standing water covered portions of the subject property. Our all-terrain drilling rig experienced little to no difficulty in accessing the boring locations. However, our four-wheel drive pick-up truck could not traverse the site.

Existing site topographic information was not provided. However, based on visual observations, the subject property appear to be relatively level with very little elevation difference between high and low points within the areas intended for construction with the exception of the existing furrows.

3.2 Subsurface Conditions

The subsurface conditions were explored with a total of twenty-five (25) soil test borings drilled to depths ranging from 5 to 25 feet below the existing ground surface. The following table futher details the scope of field services:

Structure	Number of Borings	Boring Depth (feet)	Boring Numbers
Apartment Buildings	17	25	B-1 thru B-17
Clubhouse/Leasing Office	1	20	B-18
Detention Ponds	2	15	B19 & B-20
Pavement Areas	5	5	B-21 thru B-25

The number of borings, locations and depths were determined by SITE Engineering, Inc. The borings were located on the subject site utilizing stakes previously placed by SPEC, LLC. The approximate location of each boring can be seen on the boring location diagram provided in the appendix of this report.

The borings were advanced utilizing continuous flight auger drilling techniques. Soil samples were obtained continuously in the upper ten feet of the borings and on five-foot centers thereafter to the boring completion depths. Drilling and sampling methods were accomplished in general accordance with ASTM procedures. Upon completion of the drilling and delayed groundwater readings, where applicable, the borings were plugged and abandoned in accordance with state requirements.

Undisturbed samples of cohesive soils were 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. Undisturbed samples were identified according to boring number and depth, were placed in polyethylene plastic wrapping to protect against moisture loss, and were transported to the laboratory in special containers to prevent disturbance.

In addition to the field exploration, a supplemental laboratory-testing program was conducted to evaluate additional pertinent engineering characteristics of the subsurface materials necessary in analyzing the behavior of the foundation systems for the proposed project. The laboratory-testing program included supplementary visual classification and water content tests on all soil samples. In addition, selected samples were subjected to unconfined compressive strength testing, Atterberg Limits determinations, and percent passing a number 200 sieve analysis. Additional estimates of shear strength were also determined through the use of a pocket penetrometer.

The borings generally encountered 7 to 10 inches of lean clay topsoil. These surficial materials were underlain by very stiff to very soft lean clay soils to the boring completion depths of 5 feet within the pavement borings (B-21 through B-25), 15 feet within the pond borings (B-19 & B-20), 20 feet within the clubhouse boring (B-18), and to depths ranging from 17 to 22 feet within the apartment building borings (B-1 through B-17). Below these depths, the apartment building borings encountered firm to very stiff fat clay, lean clay, and sandy lean clay soils extending to a depth of at least 25 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 subsurface information at individual boring locations. These records include soil descriptions, stratifications, 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 and elsewhere on the site. The stratifications represent the approximate boundary between subsurface materials and the actual transition may be gradual. The samples which were not altered by laboratory testing will be retained for 60 days from the date of this report and then discarded.

3.3 Groundwater Information

Groundwater was not encountered during the drilling operations within the depths explored by the borings performed at this site. The building and pond borings (B-1 through B-20) were allowed to remain open for a period of approximately 24 hours after drilling at which time the depth to free water was measure from 4 to 14 feet below the existing ground surface. As previously mentioned, surficial water covered portions of the subject site at the time of our field exploration. Therefore, the near surface delayed groundwater readings may have been caused by surface water infiltration into the boreholes. The boring logs included in the appendix of this report should be reviewed for specific soil and groundwater information at each boring location.

The groundwater information provided above were the levels recorded at the time of our field investigation. In addition, it may take several days for the groundwater level to become static in an open borehole. Therefore, it should be noted, that it is possible for a groundwater table to fluctuate depending upon climatic and rainfall conditions. We recommend that the Contractor determine the actual groundwater levels at the site at the time of the construction activities.

4.0 EVALUATION AND RECOMMENDATIONS

4.1 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. The near surface clay soils encountered in the borings performed at the site are considered fair to good in strength and support capabilities and low in shrink/swell (volume change) potential. Provided the site preparation recommendations presented in this report are followed, the planned structures may be supported on relatively shallow foundation systems consisting of isolated spread footings, continuous wall footings, and grade beams. Details related to site development, foundation design, and construction considerations are included in subsequent sections of this report.

4.2 Site Preparation

As previously mentioned, at the time of the field exploration, the majority of the subject site was being utilized as an agricultural crop (sugar cane) field. The furrows throughout the site were approximately 12 inches in depth. Prior to placement of the required structural fill, we recommend that all topsoil, organics, and any soft, loose or deleterious materials in the area intended for construction and for a distance of at least 5 feet beyond the perimeter of the proposed buildings and 2 feet beyond the perimeter of proposed pavement areas be stripped from the site and either wasted or stockpiled for later use in landscaping.

The borings, which were drilled at the top of the crop rows, encountered approximately 7 to 10 inches of highly organic lean clay topsoil. Based on our experience with similar sites, it is anticipated that once the crop rows are leveled, the actual depth of stripping necessary to ensure removal of all excessively organic or otherwise deleterious materials will be on the order of one-half of the existing row height plus a few inches. For bidding purposes, stripping on the order of 8 to 10 inches after leveling of the rows should be anticipated. However, the actual stripping depth should be determined and verified by the geotechnical engineer to ensure adequate removal of deleterious materials.

Where trees or brush will be removed from the site, over-excavation of the root zones should continue until all roots greater than ½-inch in diameter are removed. Deep over-excavations required for the removal of root zones should be backfilled in thin lifts with adequately compacted structural fill meeting the material characteristics and compaction guidelines as described later in this report. If a tree will be allowed to remain in-place and the structure is to be placed within the drip line of the tree, consideration should be given to the placement of a root barrier adjacent to the new foundation.

Upon stripping and excavation to the proposed subgrade level and prior to placement of any structural fill, the exposed soils in the proposed construction area should be proofrolled with a loaded tandem axle dump truck or similar heavy rubber-tired vehicle weighing approximately 12 to 15 tons. Soils which are observed to rut and/or deflect excessively under the moving load should be further undercut and replaced with properly compacted structural fill. Chemical stabilization by the addition of lime, fly ash or cement may offer an economical option for reparation of extensive soft, unstable soil conditions should they exist. The proofrolling, undercutting and filling, or chemical stabilization activities should be witnessed by a representative of the geotechnical engineer and should be performed during a period of dry weather.

After stripping and subgrade preparation as described above and verification or provision of a stable subgrade, placement of structural fill may begin. The first layer of structural fill should be placed in a relatively uniform horizontal lift and be keyed into the adequately stripped and scarified subgrade soils. Structural fill soils should be free of organic or other deleterious materials, having a maximum particle size less than 2 inches, a liquid limit less than 42, a plasticity index between 10 and 22, and classify as CL in accordance with the Unified Soil Classification System (ASTM D-2487). Soils which classify as ML (silts) should not be used as structural fill due to their moisture sensitive nature.

Structural fill should be placed in maximum lifts of 8 to 9 inches of loose material and should be compacted to a minimum of 95 percent of the maximum dry density as determined by ASTM D-698 (standard Proctor). Close moisture content control will be required to achieve the recommended degree of compaction. The moisture content at the time of compaction should be within the range of one percentage point below (-1%) to three percentage points above (+3%) the optimum moisture content value as determined by ASTM D698.

If water must be added to adjust the moisture content, 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 qualified geotechnical engineer or his representative prior to placement of subsequent lifts. The edges of compacted structural fill should extend at least 5 feet beyond the edges of the buildings and 2 feet beyond the perimeter of pavements prior to sloping. Care should be taken to apply compactive effort throughout the structural fill and structural fill slope areas.

We also recommend that water not be allowed to collect in the foundation excavations or on prepared subgrades of the construction areas 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 buildings and beneath the floor slabs or into the pavement supporting soils or base.

4.3 Use of On-Site Soils as Structural Fill

We understand that it will be desirable to use soils excavated from the proposed ponds as structural fill in the construction areas. As presented in the “Site Preparation” section of this report, structural fill soils should be free of organic materials, have a liquid limit of 42 or less and a plasticity index between 10 and 22. Based on the borings performed within the proposed ponds (B-19 and B-20) and the laboratory tests performed, it appears that the soils encountered between the depths of 6 and 15 feet meet the aforementioned specifications and may be utilized as structural fill elsewhere on the site.

It should be noted that the recommendations provided above are based on the soil conditions encountered in borings B-19 and B-20 performed at this site. Soils which are considerable useable for structural fill were encountered closer to the surface in other borings performed at this site. Therefore, it is recommended that test pits be performed at the time of construction in the area of the proposed pond(s) to better determine the extent of usable soils present at the site.

4.4 Backfilling of Existing Drainage Canal

As previously mentioned, a drainage canal traverses the subject property and generally runs in a northwestern/southeastern direction. It is understood that this feature will be backfilled to facilitate construction of the new development. It is recommended that all soft soils at the bottom and on the sides of the existing canal be over-excavated or "mucked out" to a level of firm, undisturbed soil as verified by the geotechnical engineer. The cleaned drainage feature should then be backfilled with structural fill meeting the material requirements provided in the "Site Preparation" section of this report.

Backfilling of the ditch should be performed as soon as possible to allow adequate time for "self-weight consolidation" of the newly placed fill prior to subsequent construction over the ditch. Settlement within the newly placed fill section should approximate about one percent of the thickness of the fill. However, approximately 90 percent of this consolidation settlement is expected to occur within about 30 to 45 days after the time of placement.

If the duration discussed above for self-weight consolidation is considered to be excessive, then the drainage feature could be backfilled with relatively clean sands (less than 20 percent passing a number 200 sieve). The sand should be placed in maximum 8-inch loose lifts and compacted to at least 95 percent of the standard Proctor maximum dry density at moisture contents within 2 percent of the optimum value. If sand backfill is utilized, it should be terminated at a maximum elevation of 3 feet below the bottom of the lowest foundation element elevation.

4.5 Shallow Foundation Recommendations

Provided the site preparation recommendations given in this report are followed, the planned structures may be supported on relatively shallow foundation systems bearing at a minimum depth of 2 feet below final grade. Foundation elements bearing on existing naturally occurring clay soils or within properly compacted imported structural fill at the recommended depth can be proportioned utilizing a maximum net allowable soil bearing pressure of 1,800 pounds per square foot for isolated spread footings and 1,400 pounds per square foot for continuous (wall) footings.

The recommended bearing pressures include a factor of safety of at least 3.0 against bearing capacity failure. However, minimum dimensions of 18 inches for continuous footings and 24 inches for spread footings should be used for design, even if the resulting bearing pressure is less than the allowable bearing pressure, to minimize the possibility of a local bearing capacity failure.

Consolidation of the soils resulting from the foundation loads will result in measurable but tolerable increments of soil settlements. Based on the results of field and laboratory tests, and assuming the foundation elements will be loaded to the maximum net allowable bearing capacity provided above, it is estimated that settlement of square footings up to 3½ feet by 3½ feet in plan dimension and continuous footings up to 3 feet in width will be less than one (1) inch. Differential settlement across the foundation should be less than ½-inch. The estimated settlements are based on a maximum of 2 feet of fill being placed above existing grade. If more fill is required to reach design elevation, settlement due to the weight of the fill will need to be considered as it may be excessive.

It should be noted, that the aforementioned bearing capacities are maximum allowable bearing capacities. For isolated spread footings, a lower bearing capacity can be utilized in conjunction with a larger footing size. As a result, a higher applied point load can be supported with equal or lower settlements. The following table provides settlement estimates for anticipated footing sizes and maximum applied pressures.

ESTIMATED SETTLEMENT FOR SQUARE SPREAD FOOTINGS (INCHES)

Square Footing Size (ft)		2	2½	3	3½	4	4½	5
Applied Pressure (psf)	**1,200**	0.50	0.60	0.67	0.75	0.83	0.89	0.95
	1,400	0.55	0.66	0.75	0.83	0.92	0.99	-
	1,600	0.61	0.72	0.82	0.91	0.99	-	-
	1,800	0.65	0.78	0.88	0.98	-	-	-

Note: A graphical representation of the preceding table is provided in the appendix of this report. The values presented above are based on spread footings bearing at a depth of 2 feet below final grade.

The above table should be utilized to govern footing design only if the aforementioned maximum net allowable bearing capacity and corresponding limiting footing size does not provide adequate support of the anticipated structural loads. Furthermore, if a lower applied pressure is utilized, a single applied pressure value should be used for design of all spread footings.

The settlements provided above are estimates. Values were derived from empirical equations using average soil characteristics from laboratory testing performed on samples of the subsurface soils of the borings performed at this site. Therefore, it is anticipated that settlements throughout the structures may vary. Once again, the estimated settlements are based on a maximum of 2 feet of fill being placed above existing grade. If more fill is required to reach design elevation, settlement due to the weight of the fill will need to be considered as it may be excessive.

It should be noted that total settlements on the order of one (1) inch and differential settlement of ½-inch or less are generally considered moderate but tolerable for structures of the type proposed. It is highly recommended that the design of masonry walls include provisions for liberally spaced, vertical control joints to minimize the effects of cosmetic “cracking”. Furthermore, it is recommended that good rigidity of the structure foundations be provided. This could consist of stiffening the slab with grade beams and tying the individual foundation elements together to form a “waffle” pattern or by the use of post-tensioned reinforcement.

The foundation excavations should be observed by a representative of SITE Engineering, Inc. prior to placement of reinforcing steel or concrete to assure that the foundation soils are consistent with the materials discussed in this report. Soft or loose soil zones encountered at the bottom of the footing excavations should be removed to the level of suitable bearing material and replaced with adequately compacted structural fill as directed by the Geotechnical Engineer.

After opening, the 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. 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.

4.6 Uplift Resistance of Shallow Foundation Elements

Based on the type of construction, it is anticipated that foundation elements constructed at this site will be subjected to uplift forces due to wind loads. Uplift resistance of shallow footings will be limited to the weight of the foundation concrete and the soil above the footings. For design purposes, the ultimate uplift resistance should be based on unit weights of 140 pcf for the concrete in the footings and 115 pcf for the soil above the footing. A factor of safety of at least 1.1 should be applied to the calculated uplift resistance to account for potential variations in the concrete and soil unit weights. The size and depth of foundation should be checked by the structural engineer to assure that it is capable of supporting the uplift forces.

If adequate uplift resistance cannot be achieved, consideration should be given to supporting the proposed building on a drilled shaft foundation system. Allowable load-carrying capacities for drilled shaft foundation elements can be provided at your request.

4.7 Other Foundation Types

It should be noted that foundation types other than those discussed in this report could be used for support of the structure at this site. These foundation systems include but are not limited to drilled cast-in-place concrete shafts, auger cast-in-place piles, driven piles of various materials, and screwed helical piles. Ground improvement techniques such as rigid inclusions or aggregate piers (stone columns) may also offer an increase in bearing capacity while minimizing settlements without the expense of a typical deep foundation system. Some of these foundation types and ground improvement systems are patented and should be designed by the manufacturer or distributor. SITE Engineering, Inc. can contact these manufacturers and provide design recommendations at your request.

4.8 Floor Slab Recommendations

Floor slab loads are commonly distributed to grade (either existing or finished soil grade) by slab-on-grade type construction. Otherwise, a structural floor is used to carry the floor loads independent of the grade. Common types of slabs-on-grade are reinforced slabs, which may or may not include interior ribs, and post-tensioned slabs. The ribbed slab and post-tensioned slab provide rigidity against differential movement and minimize slab cracking. Recommendations for a ribbed slab and post-tensioned slab are provided in the following paragraphs in the event they are preferred over a structural concrete slab.

Ribbed Floor Slab: The ribbed slab should be designed by a registered and qualified structural engineer. However, certain design criteria are suggested. Interior grade beams should be at least 18 inches deep from the top of the slab. The spacing of the ribs should be determined by the structural engineer based on the thickness of the slab but should in no case be greater than 15 feet. Where practical, these ribs should be arranged to coincide with non-load bearing interior walls. A minimum beam width of 12 inches is recommended to allow adequate bearing area. The floor slab and interior grade beams should be a monolithic unit with no joints. If concrete cannot be placed monolithically, it should be doweled to provide continuity and good rigidity.

Post-Tensioned Floor Slab: An alternative to a reinforced ribbed slab foundation is post-tensioned reinforcement. Post-tensioning involves providing tensile steel reinforcement in the slab system by stressing high strength steel tendons after the concrete has achieved sufficient strength. A post-tension ribbed slab is a specialized structural design and should be designed by a qualified structural engineer who is competent and familiar with this type of reinforcement.

In either case, floor slabs constructed at-grade for this project can be designed utilizing a modulus of subgrade reaction (spring constant), k, of 75 pci for the properly compacted structural fill. If a higher modulus of subgrade reaction is required, a k value of 110 pci can be obtained by providing a minimum of 4 inches of clean sand (less than 10 percent fines) directly beneath the floor slab. A k value of 145 pci may be achieved by the placement of 4 inches of crushed limestone, crushed concrete or washed gravel.

Furthermore, consideration should be given to the use of barriers (polyethylene sheeting, a thin sand, graded gravel, or limestone, or both) to minimize potential vapor rise through the slab. This will be particularly important if moisture sensitive floor coverings are used. Other design and construction considerations, as outlined in the American Concrete Institute (ACI) Design manual (section 302.1R) are recommended.

5.0 PAVEMENT RECOMMENDATIONS

We have evaluated both rigid and flexible pavement systems for this project. Although specific traffic information was not provided to us, we have assumed that traffic conditions will primarily consist of passenger vehicles (cars and small trucks) with weekly passes of larger vehicles such as delivery trucks and garbage collection vehicles.

The grading information for the pavement areas is also unknown at this time. However, for purposes of this report, we have assumed that final pavement grade will be at or slightly higher than existing site grades. We have further assumed that the site preparation criteria presented in this report will be followed and all remaining topsoil, limestone, organics, and any isolated soft or loose soil areas encountered during proofrolling of the subgrade will be removed and replaced with compacted structural fill as previously described. Therefore, it is estimated the subgrade soils will be prepared to achieve a minimum CBR of 3 or a modulus of subgrade reaction (k) of 75 pci.

The general pavement design information presented in this report is based on information published by AASHTO and the Portland Cement Association as well as past experience in this area. The published information was utilized in conjunction with the available field and laboratory test data to develop general pavement recommendations. Specific design parameters considered in the pavement analyses are as follows:

CBR	3.0
Modulus of Subgrade Reaction, k	75 pci
Reliability	85%
Modulus of Elasticity	3.4×10^6
Deviation	0.45 Asphalt, 0.35 Rigid
Initial Serviceability	4.2 Asphalt, 4.5 Rigid
Terminal Serviceability	2.5
Modulus of Rupture (concrete)	600 psi
Load Transfer	3.2 Dowels or Keys
Drainage Coefficient	1.0
Layer Coefficients	0.41 Asphalt 0.14 Base Course 0.06 Compacted Fill

The recommended minimum pavement sections for the passenger vehicle parking areas (light-duty) and heavy-duty drives are as follows:

RIGID PAVEMENT

Pavement Materials	Minimum Thickness (Inches)	
	Parking Stalls	Drives
Portland Cement Concrete	5	6
Compacted Granular Fill (Clean Sand, Crushed Limestone or Crushed Portland Cement Concrete)	4	4
Adequately Proofrolled Subgrade or Compacted Low Plasticity Structural Fill	--	--

FLEXIBLE PAVEMENT		
Pavement Materials	**Minimum Thickness (Inches)**	
	Parking Stalls	**Drives**
Asphaltic Concrete Wearing Course	2	3
Compacted Crushed Limestone or Crushed Portland Cement Concrete Base	10	12
Adequately Proofrolled Subgrade or Compacted Low Plasticity Structural Fill	--	--

The compacted granular base for rigid concrete pavements should consist of crushed limestone or crushed concrete meeting LSSRB, Section 1003.03b or 1003.03c, or relatively clean sands with less than 15 percent fines (material passing a number 200 sieve). Granular base for rigid pavements should be compacted to at least 98 percent of the maximum dry density as determined by ASTM D-698 at moisture contents within 2 percent of optimum.

The compacted crushed limestone or crushed concrete base for flexible pavements may be replaced with a cement stabilized base course. The thickness of the soil-cement layer and percentage of cement will vary depending on grading plans and the type of material to be stabilized. However, it is estimated that a soil-cement layer 12 inches in thickness stabilized with 8 percent cement by volume should be sufficient.

Soils to be cement treated should have a plasticity index (PI) of 15 or less. If the pavement base soils have a PI greater than 15, then lime treatment will be necessary to lower the plasticity index prior to cement stabilization. The thickness of lime treatment, if necessary, should be at least 12 inches. The amount of lime necessary to lower the PI of the fill soils will depend on the plasticity index of the soils to be treated and should be determined at the time of construction.

It should be noted that soil cement base has a tendency to shrink similar to concrete causing tension cracks that can reflect up through the asphalt surface course. The surface cracks will require additional maintenance and sealing to maintain the design life of the pavement. Percentages of cement greater than recommended above will further increase the frequency and severity of the hydration/shrinkage cracks.

Recent research involving a stone layer between the cement stabilized base and the asphalt surface course has provided better performance and longer life than only soil cement bases while resisting rutting and minimizing the occurrence of reflective cracking. Therefore, we recommend that consideration be given to providing a minimum 4-inch thick stone layer below the asphalt surface course if a soil cement base is used. If the 4-inch thick stone interlayer is used, the light and heavy-duty soil cement base section for flexible pavements may be reduced from 12 inches to 8 inches.

Pavements and fill materials should meet the requirements of the Louisiana Standard Specifications for Roads and Bridges (LSSRB). Structural fill utilized in the pavement areas should be compacted to 95 percent of the maximum dry density as determined by ASTM D698 (standard Proctor) at a moisture content within 2 percent of the optimum value.

A heavy-duty pavement section consisting of at least 7 inches of properly reinforced portland cement concrete on a minimum of 8 inches of compacted crushed limestone, 8 inches of crushed concrete, or a 12 inches of cement stabilized soil is recommended where trash dumpsters or semi-trailers are to be parked on the pavement or where the front tires of trash collection trucks will be positioned during lifting of the dumpster. This should provide better distribution of surface loads to the subgrade without causing deformation of the surface.

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.

Asphaltic concrete pavement materials should meet the requirements of the LSSRB and should be compacted to a minimum of 95 percent of the density of the laboratory molded specimen. For flexible pavements, the compacted crushed limestone or crushed recycled Portland cement concrete base should conform to the LSSRB, Section 1003.03b or 1003.03c, respectively. The crushed base for flexible pavements should be also compacted to at least 98 percent of the maximum dry density as determined by ASTM D-698.

Prior to placement of a crushed limestone or crushed concrete base for either flexible or rigid pavements, a geotextile fabric separator should be placed on the compacted fill or proofrolled subgrade soils The purpose of the separator is to limit migration of the crushed aggregate base into the fine grained soils below during periods of wet weather. If a sand base is utilized, the geotextile fabric may be omitted. However, placement of a strip of fabric separator approximately 18 to 24 inches in width under each pavement joint is recommended to minimize migration of the sand into the pavement joints.

The geotextile which is sold in rolls of various sizes, should be installed per the manufacturer's recommendations and be overlapped a minimum of 2 feet. If a cement stabilized base with a stone interlayer is utilized as described earlier in this section, the geotextile fabric separator may be omitted. The geotextile fabric separator should meet the requirements of LSSRB Section 1019.01b.

A geogrid soil reinforcement product may be utilized to minimize undercutting or chemical stabilization of soft soils, if encountered during proofrolling, in the pavement areas. The type and usability of a geogrid will depend on the severity of the unstable soils. If desirable, SITE Engineering should be contacted to provide alternative pavement sections which include the placement of geogrid reinforcement.

In addition, water should not be allowed to pond behind curbs and saturate the pavement base. In down grade areas, granular base should extend through the slope to allow any water entering the base a path to exit. The subgrade or fill soils beneath the pavement base course should be sloped to facilitate drainage. Landscape areas within the pavement system or next to the buildings should not be allowed to drain under the pavement system or into the pavement base.

6.0 CONSTRUCTION CONSIDERATIONS

6.1 Utility Lines

It is recommended that all utility pipes be bedded in firmly placed and compacted bedding materials. The bedding should be at least 8 inches in thickness and should extend one-half of the pipe diameter beyond the edge of either side of the pipe or a minimum of 12 inches, whichever is greater. The pipe should be side bedded to the mid-height of the pipe or to the pipe spring line if arch pipe is used. The bedding material should consist of well graded, free draining stone or a sand gravel mixture consisting of approximately 35 percent clean sand with less than 5 percent fines and approximately 65 percent pea gravel with a maximum aggregate size of ½ inch, compacted to at least 70 percent relative density as determined by ASTM D4253 and ASTM D4254 or to at least 90 percent of the maximum density as determined by ASTM D698 (standard Proctor). If utility piping that does not include water-tight joints is used, a geotextile fabric should be placed around the pipe at each joint to reduce potential migration of the fines in the fill or base into the joints of the pipe.

The trench excavations should be backfilled to the surface with granular fill or excavatable flowable fill. Granular backfill should consist of limestone or sand with less than 20 percent fines and should be placed in lifts not exceeding 8 inches in thickness. The backfill should be compacted to a minimum of 95 percent of the maximum dry density as determined by ASTM D698. Flowable fill should meet the requirements of LSSRB Section 710. Where utility excavations traverse the pavement system, the upper 12 inches of utility trench backfill should consist of structural fill soils meeting the classification requirements provided in the Site Preparation section of this report.

For utility lines that are not placed beneath the building structure, do not traverse the pavement system, and are not installed within five (5) feet of the perimeter of the building or within two (2) feet of the edge of pavements, backfill of the utility trenches may consist of previously excavated soils placed in lifts not exceeding 12 inches in thickness and compacted to at least 90 percent of the standard Proctor maximum dry density.

6.2 Construction Testing and Inspection

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 floor slab construction, and pavement area construction be monitored by the geotechnical engineer or his representative.

Density tests should be performed to verify compaction and moisture content in the fill and base material. Each lift of fill soil or base material should be tested and approved by the soils engineer prior to placement of subsequent lifts. It is recommended that field density tests be performed at a frequency of not less than one test per 2,500 and 5,000 square feet of surface area per lift in the building and pavement areas, respectively, with a minimum of three tests per lift.

Inspection should be performed prior to and during concrete placement. Foundation excavations should be observed by the soils engineer or his representative to verify that the exposed materials are suitable for support of the foundations. It is recommended that SITE Engineering, Inc. be retained to provide observation and testing of construction activities involved in the foundations and pavements, earthwork, and related activities of this project. SITE Engineering, Inc. 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.

6.3 Moisture Sensitive Soils/Weather Related Concerns

The surficial soils encountered on the site are considered to be somewhat sensitive to changes in moisture content. During wet weather periods, increases in the moisture content of the soils may cause significant reduction in the soil strength and support capabilities. In addition, soils that become wet may be slow to dry and thus significantly retard the progress of grading and compaction activities. It will, therefore, be advantageous to perform earthwork and foundation construction activities during dry weather. If the upper soils are allowed to become saturated and the construction schedule does not allow for drying of the soils naturally, then removal and replacement or chemical stabilization will likely be required.

6.4 Drainage and Groundwater Concerns

Water should not be allowed to collect in the foundation excavations 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 structures and beneath the foundation elements.

Groundwater was not encountered during the drilling operations within the depths explored by the borings performed at this site. The building and pond borings (B-1 through B-20) were allowed to remain open for a period of 24 hours, at which time free water was present at depths ranging from 4 to 14 feet below the existing ground surface. As previously mentioned, at the time of drilling surficial water covered much of the subject site. Therefore, the near surface delayed groundwater readings may have been caused by surface infiltration.

Although groundwater was encountered as described above, it should be noted that it may take several days for the groundwater level to become static in an open borehole. Furthermore, seasonal variations in the groundwater table of several feet or more may occur due to climatic and rainfall conditions. Therefore, it is highly recommended that the Contractor determine the actual groundwater levels at the site at the time of the construction activities.

It is recommended that the site be graded in anticipation of wet weather periods to help prevent water from “ponding” within the construction areas and/or flowing into excavations. Filtered sump pumps placed in the bottoms of excavations, or other conventional dewatering techniques, such as drainage swales or other methods approved by the geotechnical engineer, are expected to be suitable for control of surface or runoff water. However, if uncontrollable groundwater infiltration into the excavations is experienced during construction, SITE Engineering should be contacted.

6.5 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 excavations. 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. SITE Engineering, Inc. 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.

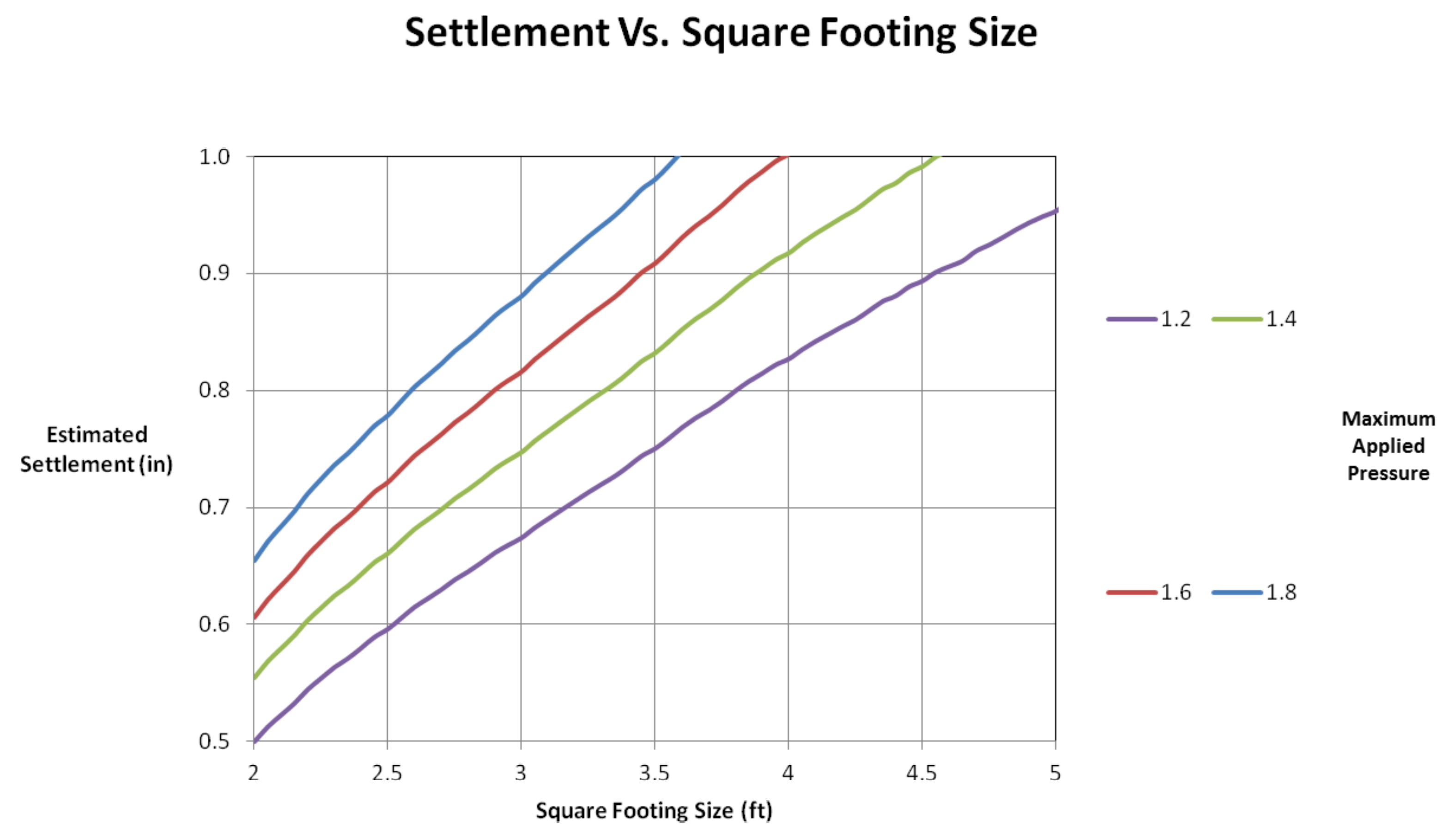
7.0 REPORT LIMITATIONS

The recommendations submitted, in this report, are based on the available subsurface information obtained by SITE Engineering for the proposed project. 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, SITE Engineering should be notified immediately to determine if changes in the recommendations are required. If we are not notified of such changes or conditions, SITE Engineering will not be responsible for the impact of those changes or conditions on the project.

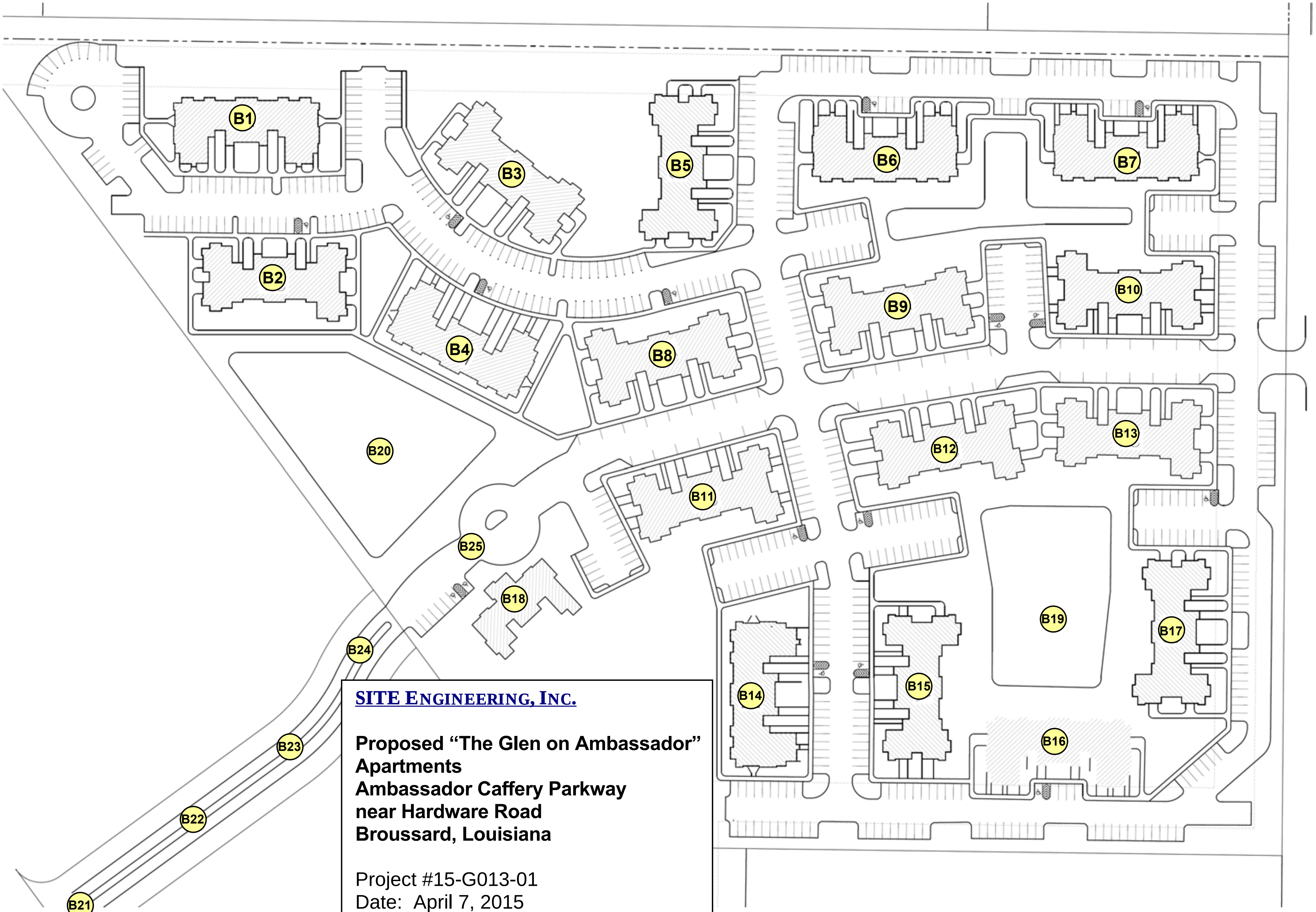
The geotechnical engineer warrants that the findings, recommendations, specifications, or professional advice contained herein have been made in accordance with generally accepted professional geotechnical engineering practices in the local area. No other warranties are implied or expressed.

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 supplemental recommendations. This report has been prepared for the exclusive use of Cagan Management Group, Inc. or their assigns for the specific application to the proposed “The Glen on Ambassador” apartments to be constructed at the referenced location in Broussard, Louisiana.

APPENDIX


Settlement Vs. Square Footing Size
Estimated Settlement (in)
1.0
0.9
0.8
0.7
0.6
0.5
2
2.5
3
3.5
4
4.5
5
Square Footing Size (ft)
1.2
1.4
1.6
1.8
Maximum Applied Pressure

Boring Location Diagram



SITE ENGINEERING, INC.

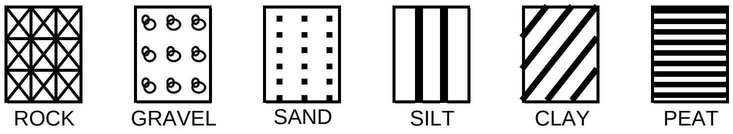
Proposed "The Glen on Ambassador"
Apartments
Ambassador Caffery Parkway
near Hardware Road
Broussard, Louisiana

Project #15-G013-01
Date: April 7, 2015

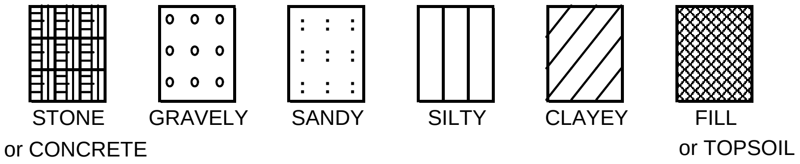
= Approximate Boring Location

KEY TO TERMS AND SYMBOLS USED ON LOGS

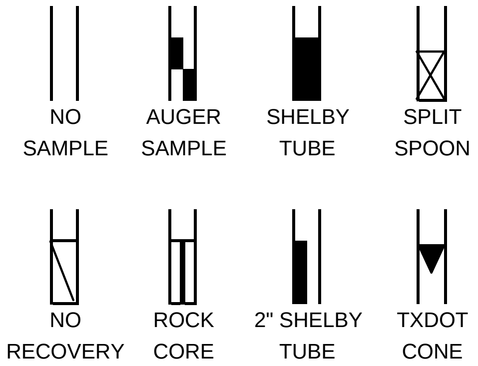
SOIL TYPE



MODIFIERS



SAMPLE TYPE



UNIFIED SOIL CLASSIFICATION SYSTEM - ASTM D 2487-98

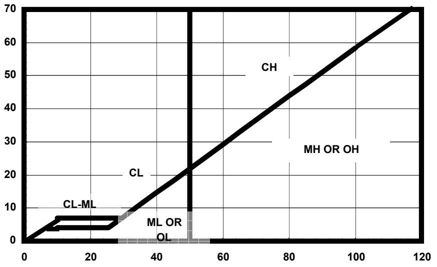
MAJOR DIVISIONS			LETTER SYMBOL	TYPICAL DESCRIPTIONS
COARSE GRAINED SOILS (LESS THAN 50% PASSING NO. 200 SIEVE)	GRAVEL & GRAVELY SOILS LESS THAN 50% PASSING NO. 4 SIEVE	CLEAN GRAVEL (LITTLE OR NO FINES	GW	WELL GRADED GRAVEL, GRAVEL-SAND MIXTURES WITH LITTLE OR NO FINES
			GP	POORLY GRADED GRAVEL, GRAVEL-SAND 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	UNCONFINED COMPRESSIVE STRENGTH IN TONS/FT^2
VERY SOFT	0.0 TO 0.25
SOFT	0.25 TO 0.50
FIRM	0.50 TO 1.0
STIFF	1.0 TO 2.0
VERY STIFF	2.0 TO 4.0
HARD	> 4.0 OR 4.0+

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

Qp - HAND PENETROMETER
Qt - TORVANE
MV - MINIATURE VANE

Qu - UNCONFINED COMPRESSION TEST
UU - UNCONSOLIDATED UNDRAINED TRAIXIAL
CU - CONSOLIDATED UNDRAINED

▼ GROUNDWATER FIRST ENCOUNTERED

▽ (? HRS) DELAYED GROUNDWATER READING W/ ELAPSED TIME

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

LOG OF BORING B-1

Proposed "The Glen on Ambassador" Apartments
Ambassador Caffery Parkway near Hardware Road
Broussard, Louisiana

TYPE OF BORING: Solid Flight Auger

SITE Project #: 15-G013

DEPTH, FT.	SOIL TYPE	SAMPLE TYPE	SOIL DESCRIPTION **SURFACE ELEVATION:** Existing Grade	N-VALUE, blows per foot	UNCONFINED COMPRESSIVE STRENGTH (Qu), tsf	HAND PENETROMETER (Qp), tsf	TORVANE (Qt), tsf	UNIT DRY WEIGHT pcf	MOISTURE CONTENT, %	LIQUID LIMIT	PLASTICITY INDEX	% PASSING #200 SIEVE
	▒	■	8" Lean Clay topsoil / Very stiff to stiff brown lean CLAY (CL) with silt and ferrous nodules		2.35	3.0		92	26			
	▨	■			1.34	2.0		88	29	49	25	
	▨	■			1.37	2.0		89	29			
5	▨	■										
	▨	■			1.05	1.5		91	27	43	19	
	▨	■	Firm to soft brown lean CLAY (CL) with silt and ferrous nodules		0.76		0.40	89	27			
	▨	■	▽									
10	▨	■					0.40		27			
	▨	□	- becoming soft at 12 feet									
15	▨	■			0.49		0.25	87	29			
	▨	□	Stiff light brown and gray lean CLAY (CL) with silt and ferrous nodules									
20	▨	■			1.64	2.5		100	22			
	▨	□	Very stiff light brown and gray fat CLAY (CH) with ferrous nodules									
25	▨	■			2.57	3.5		100	22			
			Boring terminated at 25 feet below grade									
30												
35												
40												
45												
50												

DEPTH OF BORING: 25 Feet Below Existing Grade

DATE OF BORING: March 9, 2015

DEPTH TO GROUNDWATER: Not Encountered During Drilling

DELAYED GROUNDWATER READING: 8 Feet After 24 Hours

LOG OF BORING B-2

Proposed "The Glen on Ambassador" Apartments

Ambassador Caffery Parkway near Hardware Road

Broussard, Louisiana

TYPE OF BORING: Solid Flight Auger

SITE Project #: 15-G013

DEPTH, FT.	SOIL TYPE	SAMPLE TYPE	SOIL DESCRIPTION **SURFACE ELEVATION:** Existing Grade	N-VALUE, blows per foot	UNCONFINED COMPRESSIVE STRENGTH (Qu), tsf	HAND PENETROMETER (Qp), tsf	TORVANE (Qt), tsf	UNIT DRY WEIGHT pcf	MOISTURE CONTENT, %	LIQUID LIMIT	PLASTICITY INDEX	% PASSING #200 SIEVE
			7" Lean Clay topsoil / Stiff to firm brown lean CLAY (CL) with silt and ferrous nodules		1.54	2.5		91	27			
					1.17	2.0		89	28			
			∇		1.34	2.0		91	27	49	26	
5												
					0.64		0.30	89	29			
			Soft to firm brown lean CLAY (CL) with silt and ferrous nodules		0.32		0.20	87	31			
10					0.42		0.20	86	30			
			- becoming firm at 12 feet									
15					0.73		0.35	88	26			
			Very stiff brown and light brown lean CLAY (CL) with silt and ferrous nodules									
20					2.24	3.5		104	20	37	21	
			Very stiff reddish brown and brown fat CLAY (CH) with ferrous nodules									
25					2.37	3.5		99	22			
			Boring terminated at 25 feet below grade									
30												
35												
40												
45												
50												

DEPTH OF BORING: 25 Feet Below Existing Grade

DATE OF BORING: March 9, 2015

DEPTH TO GROUNDWATER: Not Encountered During Drilling

DELAYED GROUNDWATER READING: 4 Feet After 24 Hours

LOG OF BORING B-3

Proposed "The Glen on Ambassador" Apartments

Ambassador Caffery Parkway near Hardware Road

Broussard, Louisiana

TYPE OF BORING: Solid Flight Auger

SITE Project #: 15-G013

DEPTH, FT.	SOIL TYPE	SAMPLE TYPE	SOIL DESCRIPTION **SURFACE ELEVATION:** Existing Grade	N-VALUE, blows per foot	UNCONFINED COMPRESSIVE STRENGTH (Qu), tsf	HAND PENETROMETER (Qp), tsf	TORVANE (Qt), tsf	UNIT DRY WEIGHT pcf	MOISTURE CONTENT, %	LIQUID LIMIT	PLASTICITY INDEX	% PASSING #200 SIEVE
			8" Lean Clay topsoil / Stiff to firm brown lean CLAY (CL)		1.78	2.5		93	25			
			with silt and ferrous nodules		1.83	2.5		89	28			
					1.27	2.0		87	29	49	25	
5			- becoming firm at 4 feet									
					0.97	1.5		89	29			
			∇		0.58		0.30	88	29	45	22	
10					0.65		0.30	88	29			
15					0.72		0.35	86	29			
20					0.86		0.45	97	22			
			Stiff brown lean CLAY (CL) with silt and ferrous nodules									
25					1.56	2.5		100	22			
			Boring terminated at 25 feet below grade									
30												
35												
40												
45												
50												

DEPTH OF BORING: 25 Feet Below Existing Grade

DATE OF BORING: March 9, 2015

DEPTH TO GROUNDWATER: Not Encountered During Drilling

DELAYED GROUNDWATER READING: 7 Feet After 24 Hours

LOG OF BORING B-4

Proposed "The Glen on Ambassador" Apartments

Ambassador Caffery Parkway near Hardware Road

Broussard, Louisiana

TYPE OF BORING: Solid Flight Auger

SITE Project #: 15-G013

DEPTH, FT.	SOIL TYPE	SAMPLE TYPE	SOIL DESCRIPTION	N-VALUE, blows per foot	UNCONFINED COMPRESSIVE STRENGTH (Qu), tsf	HAND PENETROMETER (Qp), tsf	TORVANE (Qt), tsf	UNIT DRY WEIGHT pcf	MOISTURE CONTENT, %	LIQUID LIMIT	PLASTICITY INDEX	% PASSING #200 SIEVE
			SURFACE ELEVATION: Existing Grade									
			10" Lean Clay topsoil / Very stiff to stiff brown and gray lean		2.95	4.0		93	25			
			CLAY (CL) with silt and ferrous nodules		1.55	2.5		93	25	46	25	
			Firm to soft brown lean CLAY (CL) with silt and ferrous nodules		0.92	1.5		91	27			
5			∇									
					0.44		0.20	86	29	36	12	
					0.28		0.15	81	32			
10					0.31		0.15	79	37			
			Firm to stiff brown and light brown lean CLAY (CL) with silt and ferrous nodules									
15					0.58		0.30	85	33			
20					0.95	1.5		94	25			
			- becoming stiff at 22 feet									
25						2.0			28			
			Boring terminated at 25 feet below grade									
30												
35												
40												
45												
50												

DEPTH OF BORING: 25 Feet Below Existing Grade

DATE OF BORING: March 10, 2015

DEPTH TO GROUNDWATER: Not Encountered During Drilling

DELAYED GROUNDWATER READING: 5 Feet After 24 Hours

SITE Engineering, Inc.

LOG OF BORING B-5

Proposed "The Glen on Ambassador" Apartments

Ambassador Caffery Parkway near Hardware Road

Broussard, Louisiana

TYPE OF BORING: Solid Flight Auger

SITE Project #: 15-G013

SURFACE ELEVATION: Existing Grade

DEPTH, FT.	SOIL TYPE	SAMPLE TYPE	SOIL DESCRIPTION	N-VALUE, blows per foot	UNCONFINED COMPRESSIVE STRENGTH (Qu), tsf	HAND PENETROMETER (Qp), tsf	TORVANE (Qt), tsf	UNIT DRY WEIGHT pcf	MOISTURE CONTENT, %	LIQUID LIMIT	PLASTICITY INDEX	% PASSING #200 SIEVE
			9" Lean Clay topsoil / Very stiff to stiff brown and gray lean CLAY (CL) with silt and ferrous nodules		2.17	3.0		87	30			
					2.18	3.0		91	28			
					1.38	2.0		90	27	45	22	
5			Firm to soft brown lean CLAY (CL) with silt and ferrous nodules ▽		0.76		0.40	92	28			
					0.58		0.30	91	29			
10					0.29		0.15	87	34			
15					0.34		0.15	88	29			
			Firm light brown and gray lean CLAY (CL) with silt and ferrous nodules									
20					0.69		0.35	97	24			
			Very stiff light brown and gray fat CLAY (CH) with ferrous nodules									
25					2.19	3.0		101	21			
			Boring terminated at 25 feet below grade									
30												
35												
40												
45												
50												

DEPTH OF BORING: 25 Feet Below Existing Grade

DATE OF BORING: March 9, 2015

DEPTH TO GROUNDWATER: Not Encountered During Drilling

DELAYED GROUNDWATER READING: 6 Feet After 24 Hours

LOG OF BORING B-6

Proposed "The Glen on Ambassador" Apartments
Ambassador Caffery Parkway near Hardware Road
Broussard, Louisiana

TYPE OF BORING: Solid Flight Auger

SITE Project #: 15-G013

DEPTH, FT.	SOIL TYPE	SAMPLE TYPE	SOIL DESCRIPTION **SURFACE ELEVATION:** Existing Grade	N-VALUE, blows per foot	UNCONFINED COMPRESSIVE STRENGTH (Qu), tsf	HAND PENETROMETER (Qp), tsf	TORVANE (Qt), tsf	UNIT DRY WEIGHT pcf	MOISTURE CONTENT, %	LIQUID LIMIT	PLASTICITY INDEX	% PASSING #200 SIEVE
	▩	■	10" Lean Clay topsoil / Very stiff to stiff brown and gray lean lean CLAY (CL) with silt and ferrous nodules		2.25	3.0		95	23			
	▨	■				2.0			28	44	19	
	▨	■			1.20	2.0		90	28			
5	▨	■	Firm brown and gray lean CLAY (CL) with silt and ferrous nodules		0.52		0.30	87	29			
	▨	■	∇									
	▨	■			0.56		0.30	88	28			
10	▨	■			0.72		0.35	90	29			
	▨	□										
15	▨	■			0.78		0.40	96	25			
	▨	□	Firm to stiff light brown and brown lean CLAY (CL) with silt and ferrous nodules									
20	▨	■			0.62		0.30	95	25			
	▨	□	- becoming stiff at 22 feet									
25	▨	■			1.67	2.5		100	22			
			Boring terminated at 25 feet below grade									
30												
35												
40												
45												
50												

DEPTH OF BORING: 25 Feet Below Existing Grade

DATE OF BORING: March 9, 2015

DEPTH TO GROUNDWATER: Not Encountered During Drilling

DELAYED GROUNDWATER READING: 7 Feet After 24 Hours

LOG OF BORING B-7

Proposed "The Glen on Ambassador" Apartments

Ambassador Caffery Parkway near Hardware Road

Broussard, Louisiana

TYPE OF BORING: Solid Flight Auger

SITE Project #: 15-G013

DEPTH, FT.	SOIL TYPE	SAMPLE TYPE	SOIL DESCRIPTION	N-VALUE, blows per foot	UNCONFINED COMPRESSIVE STRENGTH (Qu), tsf	HAND PENETROMETER (Qp), tsf	TORVANE (Qt), tsf	UNIT DRY WEIGHT pcf	MOISTURE CONTENT, %	LIQUID LIMIT	PLASTICITY INDEX	% PASSING #200 SIEVE
			SURFACE ELEVATION: Existing Grade									
			8" Lean Clay topsoil / Stiff brown lean CLAY (CL) with silt and ferrous nodules		1.57	2.5		84	25			
						1.5			28			
						1.5			28	43	19	
5												
			▽			2.0			27			
			Soft to firm brown lean CLAY (CL) with silt and ferrous nodules		0.46		0.25	83	29			
10					0.91		0.45	96	24			
			Stiff brown and gray lean CLAY (CL) with silt, sand, and ferrous nodules									
15					1.47	2.0		104	19			80
			- with trace sand from 17 to 22 feet									
20					1.43	2.0		94	25			97
			Stiff brown and gray fat CLAY (CH) with ferrous nodules									
25					1.82	2.5		94	26			
			Boring terminated at 25 feet below grade									
30												
35												
40												
45												
50												

DEPTH OF BORING: 25 Feet Below Existing Grade

DATE OF BORING: March 9, 2015

DEPTH TO GROUNDWATER: Not Encountered During Drilling

DELAYED GROUNDWATER READING: 6 Feet After 24 Hours

SITE Engineering, Inc.

LOG OF BORING B-8

Proposed "The Glen on Ambassador" Apartments

Ambassador Caffery Parkway near Hardware Road

Broussard, Louisiana

TYPE OF BORING: Solid Flight Auger

SITE Project #: 15-G013

DEPTH, FT.	SOIL TYPE	SAMPLE TYPE	SOIL DESCRIPTION	N-VALUE, blows per foot	UNCONFINED COMPRESSIVE STRENGTH (Qu), tsf	HAND PENETROMETER (Qp), tsf	TORVANE (Qt), tsf	UNIT DRY WEIGHT pcf	MOISTURE CONTENT, %	LIQUID LIMIT	PLASTICITY INDEX	% PASSING #200 SIEVE
			SURFACE ELEVATION: Existing Grade									
			8" Lean Clay topsoil / Stiff brown lean CLAY (CL) with silt and ferrous nodules			1.5			29			
					1.25	2.0		88	29	49	25	
					1.11	2.0		91	28			
5			Firm to soft brown lean CLAY (CL) with silt and ferrous nodules ∇		0.51		0.25	86	29	42	18	
					0.38		0.20	88	28			
10					0.32		0.15	85	30			
15			Stiff brown and light brown lean CLAY (CL) with silt and ferrous nodules		1.01	1.5		96	22			
20						2.0			21			
			Firm brown sandy lean CLAY (CL) with silt									
25					0.50		0.25	94	24			51
			Boring terminated at 25 feet below grade									
30												
35												
40												
45												
50												

DEPTH OF BORING: 25 Feet Below Existing Grade

DATE OF BORING: March 10, 2015

DEPTH TO GROUNDWATER: Not Encountered During Drilling

DELAYED GROUNDWATER READING: 7 Feet After 24 Hours

LOG OF BORING B-9

Proposed "The Glen on Ambassador" Apartments

Ambassador Caffery Parkway near Hardware Road

Broussard, Louisiana

TYPE OF BORING: Solid Flight Auger

SITE Project #: 15-G013

DEPTH, FT.	SOIL TYPE	SAMPLE TYPE	SOIL DESCRIPTION	N-VALUE, blows per foot	UNCONFINED COMPRESSIVE STRENGTH (Qu), tsf	HAND PENETROMETER (Qp), tsf	TORVANE (Qt), tsf	UNIT DRY WEIGHT pcf	MOISTURE CONTENT, %	LIQUID LIMIT	PLASTICITY INDEX	% PASSING #200 SIEVE
			SURFACE ELEVATION: Existing Grade									
			10" Lean Clay topsoil / Stiff to firm brown and gray lean CLAY (CL) with silt and ferrous nodules		1.43	2.0		86	30			
					1.44	2.0		89	28	43	20	
					0.69		0.35	88	28			
5			Very soft brown lean CLAY (CL) with silt and ferrous nodules				0.15		32			
					0.10		0.10	69	34			
10			Firm to soft brown lean CLAY (CL) with silt and ferrous nodules ∇		0.68		0.35	84	34			
			- becoming soft at 12 feet									
15							0.15		37			
			Very stiff light brown and gray fat CLAY (CH) with ferrous nodules									
20						3.0			22			
25						3.5			23			
			Boring terminated at 25 feet below grade									
30												
35												
40												
45												
50												

DEPTH OF BORING: 25 Feet Below Existing Grade

DATE OF BORING: March 10, 2015

DEPTH TO GROUNDWATER: Not Encountered During Drilling

DELAYED GROUNDWATER READING: 9 Feet After 24 Hours

SITE Engineering, Inc.

LOG OF BORING B-10

Proposed "The Glen on Ambassador" Apartments

Ambassador Caffery Parkway near Hardware Road

Broussard, Louisiana

TYPE OF BORING: Solid Flight Auger

SITE Project #: 15-G013

SURFACE ELEVATION: Existing Grade

DEPTH, FT.	SOIL TYPE	SAMPLE TYPE	SOIL DESCRIPTION	N-VALUE, blows per foot	UNCONFINED COMPRESSIVE STRENGTH (Qu), tsf	HAND PENETROMETER (Qp), tsf	TORVANE (Qt), tsf	UNIT DRY WEIGHT pcf	MOISTURE CONTENT, %	LIQUID LIMIT	PLASTICITY INDEX	% PASSING #200 SIEVE
			10" Lean Clay topsoil / Very stiff to stiff brown and gray lean CLAY (CL) with silt and ferrous nodules			3.0			25			
					2.15	3.0		90	28			
					1.26	2.0		89	28	49	25	
5			Firm to soft brown lean CLAY (CL) with silt and ferrous nodules ∇		0.96	1.5		88	29			
					0.31		0.15	81	33			
10			Very soft brown lean CLAY (CL) with silt and ferrous nodules		0.18		0.10	74	36			
15			Firm to stiff brown and light brown lean CLAY (CL) with silt and ferrous nodules		0.51		0.25	84	33	39	16	
			- becoming stiff at 17 feet									
20					1.30	2.0		103	21			
25			Very stiff light brown and gray fat CLAY (CH) with ferrous nodules		2.39	3.5		101	21			
			Boring terminated at 25 feet below grade									
30												
35												
40												
45												
50												

DEPTH OF BORING: 25 Feet Below Existing Grade

DATE OF BORING: March 10, 2015

DEPTH TO GROUNDWATER: Not Encountered During Drilling

DELAYED GROUNDWATER READING: 5 Feet After 24 Hours

LOG OF BORING B-11

Proposed "The Glen on Ambassador" Apartments

Ambassador Caffery Parkway near Hardware Road

Broussard, Louisiana

TYPE OF BORING: Solid Flight Auger

SITE Project #: 15-G013

DEPTH, FT.	SOIL TYPE	SAMPLE TYPE	SOIL DESCRIPTION	N-VALUE, blows per foot	UNCONFINED COMPRESSIVE STRENGTH (Qu), tsf	HAND PENETROMETER (Qp), tsf	TORVANE (Qt), tsf	UNIT DRY WEIGHT pcf	MOISTURE CONTENT, %	LIQUID LIMIT	PLASTICITY INDEX	% PASSING #200 SIEVE
			SURFACE ELEVATION: Existing Grade									
			10" Lean Clay topsoil / Very stiff to stiff brown lean CLAY (CL) with silt and ferrous nodules		2.85	4.0		95	24			
					2.90	4.0		96	23	46	23	
					1.82	2.5		93	23			
5			∇									
					1.46	2.0		91	22	45	24	
			Firm brown lean CLAY (CL) with silt and ferrous nodules									
					0.84		0.40	91	26			
			- soft from 8 to 12 feet									
10					0.43		0.20	83	32			
15					0.64		0.30	87	30			
			- becoming light brown and gray at 17 feet									
20					0.94	1.5		95	25			
			Very stiff light brown and gray fat CLAY (CH) with ferrous nodules									
25					2.46	3.5		100	23			
			Boring terminated at 25 feet below grade									
30												
35												
40												
45												
50												

DEPTH OF BORING: 25 Feet Below Existing Grade

DATE OF BORING: March 9, 2015

DEPTH TO GROUNDWATER: Not Encountered During Drilling

DELAYED GROUNDWATER READING: 5 Feet After 24 Hours

LOG OF BORING B-12

Proposed "The Glen on Ambassador" Apartments

Ambassador Caffery Parkway near Hardware Road

Broussard, Louisiana

TYPE OF BORING: Solid Flight Auger

SITE Project #: 15-G013

SURFACE ELEVATION: Existing Grade

DEPTH, FT.	SOIL TYPE	SAMPLE TYPE	SOIL DESCRIPTION	N-VALUE, blows per foot	UNCONFINED COMPRESSIVE STRENGTH (Qu), tsf	HAND PENETROMETER (Qp), tsf	TORVANE (Qt), tsf	UNIT DRY WEIGHT pcf	MOISTURE CONTENT, %	LIQUID LIMIT	PLASTICITY INDEX	% PASSING #200 SIEVE
			10" Lean Clay topsoil / Stiff to firm brown lean CLAY (CL)		1.17	2.0		87	30			
			with silt and ferrous nodules		1.20	2.0		88	29			
					1.27	2.0		89	29	48	23	
5			- becoming firm at 4 feet									
			∇		0.92	1.5		89	28			
			Soft brown lean CLAY (CL) with silt and ferrous nodules		0.47		0.25	84	31	39	13	
10					0.34		0.20	87	29			
			Stiff brown lean CLAY (CL) with silt and ferrous nodules									
15					1.72	2.5		100	22			
			Stiff brown sandy lean CLAY (CL) with silt and ferrous nodules									
20					1.31	2.0		100	21			61
25					1.37	2.0		96	23			68
			Boring terminated at 25 feet below grade									
30												
35												
40												
45												
50												

DEPTH OF BORING: 25 Feet Below Existing Grade

DATE OF BORING: March 10, 2015

DEPTH TO GROUNDWATER: Not Encountered During Drilling

DELAYED GROUNDWATER READING: 6 Feet After 24 Hours

SITE Engineering, Inc.

LOG OF BORING B-13

Proposed "The Glen on Ambassador" Apartments

Ambassador Caffery Parkway near Hardware Road

Broussard, Louisiana

TYPE OF BORING: Solid Flight Auger

SITE Project #: 15-G013

SURFACE ELEVATION: Existing Grade

DEPTH, FT.	SOIL TYPE	SAMPLE TYPE	SOIL DESCRIPTION	N-VALUE, blows per foot	UNCONFINED COMPRESSIVE STRENGTH (Qu), tsf	HAND PENETROMETER (Qp), tsf	TORVANE (Qt), tsf	UNIT DRY WEIGHT pcf	MOISTURE CONTENT, %	LIQUID LIMIT	PLASTICITY INDEX	% PASSING #200 SIEVE
			9" Lean Clay topsoil / Very stiff to stiff brown lean CLAY (CL) with silt and ferrous nodules		2.16	4.0		97	23			
					1.51	2.5		88	29			
					1.55	2.5		89	28	49	25	
5												
					1.33	2.0		89	27			
			Firm to soft brown lean CLAY (CL) with silt and ferrous nodules				0.25		28	38	13	
10			∇		0.51		0.25	88	28			
			- becoming soft at 12 feet									
15					0.42		0.20	86	29			
			Stiff light brown and gray lean CLAY (CL) with silt and ferrous nodules									
20						2.0			24			
25					1.24	2.0		98	22			
			Boring terminated at 25 feet below grade									
30												
35												
40												
45												
50												

DEPTH OF BORING: 25 Feet Below Existing Grade

DATE OF BORING: March 10, 2015

DEPTH TO GROUNDWATER: Not Encountered During Drilling

DELAYED GROUNDWATER READING: 9 Feet After 24 Hours

SITE Engineering, Inc.

LOG OF BORING B-14

Proposed "The Glen on Ambassador" Apartments

Ambassador Caffery Parkway near Hardware Road

Broussard, Louisiana

TYPE OF BORING: Solid Flight Auger

SITE Project #: 15-G013

DEPTH, FT.	SOIL TYPE	SAMPLE TYPE	SOIL DESCRIPTION **SURFACE ELEVATION:** Existing Grade	N-VALUE, blows per foot	UNCONFINED COMPRESSIVE STRENGTH (Qu), tsf	HAND PENETROMETER (Qp), tsf	TORVANE (Qt), tsf	UNIT DRY WEIGHT pcf	MOISTURE CONTENT, %	LIQUID LIMIT	PLASTICITY INDEX	% PASSING #200 SIEVE
			9" Lean Clay topsoil / Very stiff to stiff brown lean CLAY (CL) with silt and ferrous nodules		2.25	3.5		93	25			
					1.44	2.0		89	28			
					1.34	2.0		89	28	49	26	
5			Firm to soft brown lean CLAY (CL) with silt and ferrous nodules ∇		0.81		0.40	89	28			
					0.44		0.25	87	28			
10					0.48		0.25	89	29			
15							0.25		29			
20			Stiff brown and light brown lean CLAY (CL) with silt and ferrous nodules		1.65	2.5		99	22			
25			Very stiff brown and light brown fat CLAY (CH) with ferrous nodules		2.39	3.5		101	21			
			Boring terminated at 25 feet below grade									
30												
35												
40												
45												
50												

DEPTH OF BORING: 25 Feet Below Existing Grade

DATE OF BORING: March 9, 2015

DEPTH TO GROUNDWATER: Not Encountered During Drilling

DELAYED GROUNDWATER READING: 6 Feet After 24 Hours

LOG OF BORING B-15

Proposed "The Glen on Ambassador" Apartments

Ambassador Caffery Parkway near Hardware Road

Broussard, Louisiana

TYPE OF BORING: Solid Flight Auger

SITE Project #: 15-G013

DEPTH, FT.	SOIL TYPE	SAMPLE TYPE	SOIL DESCRIPTION	N-VALUE, blows per foot	UNCONFINED COMPRESSIVE STRENGTH (Qu), tsf	HAND PENETROMETER (Qp), tsf	TORVANE (Qt), tsf	UNIT DRY WEIGHT pcf	MOISTURE CONTENT, %	LIQUID LIMIT	PLASTICITY INDEX	% PASSING #200 SIEVE
			SURFACE ELEVATION: Existing Grade									
			8" Lean Clay topsoil / Very stiff to stiff brown and gray lean CLAY (CL) with silt and ferrous nodules		2.14	3.0		89	29			
					1.20	2.0		86	30			
					1.34	2.0		90	28			
5			Firm brown lean CLAY (CL) with silt and ferrous nodules									
					0.81		0.40	86	30	46	21	
					0.61		0.30	91	29			
			- soft from 8 to 12 feet									
10					0.40		0.20	86	30			
			∇									
15					0.61		0.30	86	31			
			Very stiff light brown and gray lean CLAY (CL) with silt, trace sand, and ferrous nodules									
20					2.09	3.0		103	19			91
			Firm brown lean CLAY (CL) with silt and ferrous nodules									
25							0.25		27			
			Boring terminated at 25 feet below grade									
30												
35												
40												
45												
50												

DEPTH OF BORING: 25 Feet Below Existing Grade

DATE OF BORING: March 9, 2015

DEPTH TO GROUNDWATER: Not Encountered During Drilling

DELAYED GROUNDWATER READING: 10 Feet After 24 Hours

SITE Engineering, Inc.

LOG OF BORING B-16

Proposed "The Glen on Ambassador" Apartments

Ambassador Caffery Parkway near Hardware Road

Broussard, Louisiana

TYPE OF BORING: Solid Flight Auger

SITE Project #: 15-G013

SURFACE ELEVATION: Existing Grade

DEPTH, FT.	SOIL TYPE	SAMPLE TYPE	SOIL DESCRIPTION	N-VALUE, blows per foot	UNCONFINED COMPRESSIVE STRENGTH (Qu), tsf	HAND PENETROMETER (Qp), tsf	TORVANE (Qt), tsf	UNIT DRY WEIGHT pcf	MOISTURE CONTENT, %	LIQUID LIMIT	PLASTICITY INDEX	% PASSING #200 SIEVE
			10" Lean Clay topsoil / Stiff brown lean CLAY (CL) with silt and ferrous nodules			1.5			28			
					1.65	2.5		89	28	49	24	
					1.64	2.5		88	29			
5												
						2.0			28	49	24	
						1.5			27			
			Firm brown lean CLAY (CL) with silt and ferrous nodules									
10					0.57		0.30	88	29			
			- soft from 12 to 17 feet									
			∇									
15					0.31		0.15	84	32			
20					0.91		0.45	99	23			
25							0.35		29			
			Boring terminated at 25 feet below grade									
30												
35												
40												
45												
50												

DEPTH OF BORING: 25 Feet Below Existing Grade

DATE OF BORING: March 9, 2015

DEPTH TO GROUNDWATER: Not Encountered During Drilling

DELAYED GROUNDWATER READING: 14 Feet After 24 Hours

LOG OF BORING B-17

Proposed "The Glen on Ambassador" Apartments

Ambassador Caffery Parkway near Hardware Road

Broussard, Louisiana

TYPE OF BORING: Solid Flight Auger

SITE Project #: 15-G013

DEPTH, FT.	SOIL TYPE	SAMPLE TYPE	SOIL DESCRIPTION **SURFACE ELEVATION:** Existing Grade	N-VALUE, blows per foot	UNCONFINED COMPRESSIVE STRENGTH (Qu), tsf	HAND PENETROMETER (Qp), tsf	TORVANE (Qt), tsf	UNIT DRY WEIGHT pcf	MOISTURE CONTENT, %	LIQUID LIMIT	PLASTICITY INDEX	% PASSING #200 SIEVE
			7" Lean Clay topsoil / Stiff to firm brown lean CLAY (CL)		1.75	2.5		90	27			
			with silt and ferrous nodules		1.49	2.5		88	29			
					0.94	1.5		88	29	48	23	
5			∇		0.83		0.40	91	28			
					0.52		0.25	87	30			
10			Soft to firm brown lean CLAY (CL) with silt and ferrous nodules		0.30		0.15	88	32			
			- beocming firm at 12 feet									
15					0.77		0.35	98	22			
20			Very stiff to stiff brown and gray lean CLAY (CL) with silt and ferrous nodules		2.29	3.0		103	20			
			- becoming stiff at 22 feet									
25						1.5			29			
			Boring terminated at 25 feet below grade									
30												
35												
40												
45												
50												

DEPTH OF BORING: 25 Feet Below Existing Grade

DATE OF BORING: March 9, 2015

DEPTH TO GROUNDWATER: Not Encountered During Drilling

DELAYED GROUNDWATER READING: 5 Feet After 24 Hours

LOG OF BORING B-18

Proposed "The Glen on Ambassador" Apartments

Ambassador Caffery Parkway near Hardware Road

Broussard, Louisiana

TYPE OF BORING: Solid Flight Auger

SITE Project #: 15-G013

DEPTH, FT.	SOIL TYPE	SAMPLE TYPE	SOIL DESCRIPTION	N-VALUE, blows per foot	UNCONFINED COMPRESSIVE STRENGTH (Qu), tsf	HAND PENETROMETER (Qp), tsf	TORVANE (Qt), tsf	UNIT DRY WEIGHT pcf	MOISTURE CONTENT, %	LIQUID LIMIT	PLASTICITY INDEX	% PASSING #200 SIEVE
			SURFACE ELEVATION: Existing Grade									
			9" Lean Clay topsoil / Very stiff to stiff brown and gray lean CLAY (CL) with silt and ferrous nodules		2.00	3.0		93	26			
					1.78	2.5		92	27			
					1.78	2.5		92	28	43	21	
5												
					1.37	2.0		94	26			
			Firm to soft brown lean CLAY (CL) with silt and ferrous nodules									
							0.30		27	36	12	
10					0.47		0.25	92	27			
			∇									
15							0.25		30			
			Stiff light brown and gray lean CLAY (CL) with silt and ferrous nodules									
20					1.10	1.5		97	24			
			Boring terminated at 20 feet below grade									
25												
30												
35												
40												
45												
50												

DEPTH OF BORING: 20 Feet Below Existing Grade

DATE OF BORING: March 9, 2015

DEPTH TO GROUNDWATER: Not Encountered During Drilling

DELAYED GROUNDWATER READING: 13 Feet After 24 Hours

SITE Engineering, Inc.

LOG OF BORING B-19

Proposed "The Glen on Ambassador" Apartments

Ambassador Caffery Parkway near Hardware Road

Broussard, Louisiana

TYPE OF BORING: Solid Flight Auger

SITE Project #: 15-G013

DEPTH, FT.	SOIL TYPE	SAMPLE TYPE	SOIL DESCRIPTION	N-VALUE, blows per foot	UNCONFINED COMPRESSIVE STRENGTH (Qu), tsf	HAND PENETROMETER (Qp), tsf	TORVANE (Qt), tsf	UNIT DRY WEIGHT pcf	MOISTURE CONTENT, %	LIQUID LIMIT	PLASTICITY INDEX	% PASSING #200 SIEVE
			SURFACE ELEVATION: Existing Grade									
			8" Lean Clay topsoil / Very stiff to stiff brown lean CLAY (CL) with silt and ferrous nodules		2.27	3.0		91	27			
					1.50	2.5		88	29	49	25	
					1.08	1.5		90	23			
5												
			∇			1.5			29	46	21	
			Firm to soft brown lean CLAY (CL) with silt and ferrous nodules		0.53		0.25	88	29			
10							0.25		29	42	17	
			- becoming soft at 12 feet									
15					0.27		0.15	87	31			
			Boring terminated at 15 feet below grade									
20												
25												
30												
35												
40												
45												
50												

DEPTH OF BORING: 15 Feet Below Existing Grade

DATE OF BORING: March 9, 2015

DEPTH TO GROUNDWATER: Not Encountered During Drilling

DELAYED GROUNDWATER READING: 6 Feet After 24 Hours

LOG OF BORING B-20

Proposed "The Glen on Ambassador" Apartments
Ambassador Caffery Parkway near Hardware Road
Broussard, Louisiana

TYPE OF BORING: Solid Flight Auger

SITE Project #: 15-G013

SURFACE ELEVATION: Existing Grade

DEPTH, FT.	SOIL TYPE	SAMPLE TYPE	SOIL DESCRIPTION	N-VALUE, blows per foot	UNCONFINED COMPRESSIVE STRENGTH (Qu), tsf	HAND PENETROMETER (Qp), tsf	TORVANE (Qt), tsf	UNIT DRY WEIGHT pcf	MOISTURE CONTENT, %	LIQUID LIMIT	PLASTICITY INDEX	% PASSING #200 SIEVE
			7" Lean Clay topsoil / Very stiff to stiff brown lean CLAY (CL)		2.04	3.0		89	30			
			with silt and ferrous nodules		1.69	2.5		88	29			
					1.74	2.5		91	27	49	25	
5												
			∇		1.67	2.5		92	26			
					1.02	1.5		91	27	42	17	
			Firm brown lean CLAY (CL) with silt and ferrous nodules									
10					0.60		0.30	87	29			
15							0.45		25	38	18	
			Boring terminated at 15 feet below grade									
20												
25												
30												
35												
40												
45												
50												

DEPTH OF BORING: 15 Feet Below Existing Grade

DATE OF BORING: March 9, 2015

DEPTH TO GROUNDWATER: Not Encountered During Drilling

DELAYED GROUNDWATER READING: 6 Feet After 24 Hours

LOG OF BORING B-21

Proposed "The Glen on Ambassador" Apartments

Ambassador Caffery Parkway near Hardware Road

Broussard, Louisiana

TYPE OF BORING: Solid Flight Auger

SITE Project #: 15-G013

DEPTH, FT.	SOIL TYPE	SAMPLE TYPE	SOIL DESCRIPTION **SURFACE ELEVATION:** Existing Grade	N-VALUE, blows per foot	UNCONFINED COMPRESSIVE STRENGTH (Qu), tsf	HAND PENETROMETER (Qp), tsf	TORVANE (Qt), tsf	UNIT DRY WEIGHT pcf	MOISTURE CONTENT, %	LIQUID LIMIT	PLASTICITY INDEX	% PASSING #200 SIEVE
			9" Lean Clay topsoil / Stiff brown and dark brown lean CLAY (CL) with silt and ferrous nodules		1.29	2.0		88	27			
						2.0			28	40	19	
5					1.63	2.5		92	26			
			Boring terminated at 5 feet below grade									
10												
15												
20												
25												
30												
35												
40												
45												
50												

DEPTH OF BORING: 5 Feet Below Existing Grade

DEPTH TO GROUNDWATER: Not Encountered During Drilling

DATE OF BORING: March 10, 2015

LOG OF BORING B-22

Proposed "The Glen on Ambassador" Apartments

Ambassador Caffery Parkway near Hardware Road

Broussard, Louisiana

TYPE OF BORING: Solid Flight Auger

SITE Project #: 15-G013

DEPTH, FT.	SOIL TYPE	SAMPLE TYPE	SOIL DESCRIPTION **SURFACE ELEVATION:** Existing Grade	N-VALUE, blows per foot	UNCONFINED COMPRESSIVE STRENGTH (Qu), tsf	HAND PENETROMETER (Qp), tsf	TORVANE (Qt), tsf	UNIT DRY WEIGHT pcf	MOISTURE CONTENT, %	LIQUID LIMIT	PLASTICITY INDEX	% PASSING #200 SIEVE
	▒	■	8" Lean Clay topsoil / Stiff brown lean CLAY (CL) with silt and ferrous nodules		1.34	2.0		92	26			
	▨	■			1.77	2.5		88	30	49	23	
5	▨	■			1.62	2.5		88	29			
			Boring terminated at 5 feet below grade									
10												
15												
20												
25												
30												
35												
40												
45												
50												

DEPTH OF BORING: 5 Feet Below Existing Grade

DEPTH TO GROUNDWATER: Not Encountered During Drilling

DATE OF BORING: March 10, 2015

LOG OF BORING B-23

Proposed "The Glen on Ambassador" Apartments

Ambassador Caffery Parkway near Hardware Road

Broussard, Louisiana

TYPE OF BORING: Solid Flight Auger

SITE Project #: 15-G013

DEPTH, FT.	SOIL TYPE	SAMPLE TYPE	SOIL DESCRIPTION **SURFACE ELEVATION:** Existing Grade	N-VALUE, blows per foot	UNCONFINED COMPRESSIVE STRENGTH (Qu), tsf	HAND PENETROMETER (Qp), tsf	TORVANE (Qt), tsf	UNIT DRY WEIGHT pcf	MOISTURE CONTENT, %	LIQUID LIMIT	PLASTICITY INDEX	% PASSING #200 SIEVE
	▒	■	6" Lean Clay topsoil / Stiff brown lean CLAY (CL) with silt and ferrous nodules		1.77	2.5		90	28			
	▨	■			1.59	2.5		89	29	49	24	
5	▨	■			1.52	2.5		90	28			
			Boring terminated at 5 feet below grade									
10												
15												
20												
25												
30												
35												
40												
45												
50												

DEPTH OF BORING: 5 Feet Below Existing Grade

DEPTH TO GROUNDWATER: Not Encountered During Drilling

DATE OF BORING: March 10, 2015

LOG OF BORING B-24

Proposed "The Glen on Ambassador" Apartments

Ambassador Caffery Parkway near Hardware Road

Broussard, Louisiana

TYPE OF BORING: Solid Flight Auger

SITE Project #: 15-G013

SURFACE ELEVATION: Existing Grade

DEPTH, FT.	SOIL TYPE	SAMPLE TYPE	SOIL DESCRIPTION	N-VALUE, blows per foot	UNCONFINED COMPRESSIVE STRENGTH (Qu), tsf	HAND PENETROMETER (Qp), tsf	TORVANE (Qt), tsf	UNIT DRY WEIGHT pcf	MOISTURE CONTENT, %	LIQUID LIMIT	PLASTICITY INDEX	% PASSING #200 SIEVE
	▒	■	10" Lean Clay topsoil / Stiff brown lean CLAY (CL) with silt and ferrous nodules		1.52	2.5		88	29			
	▨	■			1.46	2.5		87	29	49	24	
5	▨	■			1.77	2.5		90	27			
			Boring terminated at 5 feet below grade									
10												
15												
20												
25												
30												
35												
40												
45												
50												

DEPTH OF BORING: 5 Feet Below Existing Grade

DEPTH TO GROUNDWATER: Not Encountered During Drilling

DATE OF BORING: March 10, 2015

LOG OF BORING B-25

Proposed "The Glen on Ambassador" Apartments

Ambassador Caffery Parkway near Hardware Road

Broussard, Louisiana

TYPE OF BORING: Solid Flight Auger

SITE Project #: 15-G013

DEPTH, FT.	SOIL TYPE	SAMPLE TYPE	SOIL DESCRIPTION	N-VALUE, blows per foot	UNCONFINED COMPRESSIVE STRENGTH (Qu), tsf	HAND PENETROMETER (Qp), tsf	TORVANE (Qt), tsf	UNIT DRY WEIGHT pcf	MOISTURE CONTENT, %	LIQUID LIMIT	PLASTICITY INDEX	% PASSING #200 SIEVE
			SURFACE ELEVATION: Existing Grade									
	░	■	7" Lean Clay topsoil / Stiff brown lean CLAY (CL) with silt and ferrous nodules		1.75	2.5		89	28			
	▨	■			1.50	2.5		90	28	48	23	
5	▨	■			1.43	2.0		90	27			
			Boring terminated at 5 feet below grade									
10												
15												
20												
25												
30												
35												
40												
45												
50												

DEPTH OF BORING: 5 Feet Below Existing Grade

DEPTH TO GROUNDWATER: Not Encountered During Drilling

DATE OF BORING: March 10, 2015