EXHIBIT 16
PRELIMINARY GEOTECHNICAL INVESTIGATION SERVICES REPORT

September 16, 2015

England Economic and Industrial Development District
1611 Arnold Drive
Alexandria, Louisiana 71303

Attention: Mr. Jon Grafton
Executive Director

Pan American Engineers, LLC
P.O. Box 89
Alexandria, Louisiana 71309-0089

Attention: Mr. Kyle Randall, P.E.

RE: Preliminary Geotechnical Investigation Services
England Airpark Heavy Industrial Site E2
Alexandria, Rapides Parish, Louisiana
Report No. 09-15-131

Dear Mr. Grafton:

Geotechnical Testing Laboratory, Inc. is pleased to submit this preliminary report of subsurface exploration for the above referenced project. Included in the report are the results of the exploration and general recommendations concerning the potential design and construction of the foundations.

We appreciate the opportunity to have provided you with our geotechnical engineering services and look forward to assisting you by providing additional investigation services for individual projects during the development of the subject tract. If you have any questions concerning this report, or if we may be of further service, please contact our office.

Respectfully submitted,
Geotechnical Testing Laboratory, Inc.

N. J. Gorsha, P.E.
Louisiana Registration No. 20082

Ken Gorsha
President

9/16/15
STATE OF LOUISIANA
N.J. GORSHA
REG. No. 20082
REGISTERED
PROFESSIONAL ENGINEER
CIVIL ENGINEERING

Distribution: (1) EEIDD
(2) Pan American Engineers, LLC

NJG/krg

Preliminary Geotechnical Investigation Services
England Airpark Heavy Industrial Site E2
Alexandria, Rapides Parish, Louisiana
Report No. 09-15-131

Prepared For:

England Economic and Industrial Development District
1611 Arnold Drive
Alexandria, Louisiana 71303

Pan American Engineers, LLC
P.O. Box 89
Alexandria, Louisiana 71309-0089

Prepared By:

Geotechnical Testing Laboratory, Inc.
226 Parkwood Drive
Alexandria, Louisiana 71301

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APPENDICES

Preliminary Geotechnical Investigation Services
England Airpark Heavy Industrial Site E2
Alexandria, Rapides Parish, Louisiana
Report No. 09-15-131

Introduction:

This report transmits the findings of a geotechnical investigation performed for the above-referenced project. The purpose of this investigation was to define and evaluate the general subsurface conditions in the general vicinity of a planned new heavy industrial complex. Specifically, the study was planned to determine the following:

- Subsurface stratigraphy within the limits of our exploratory borings.
- Classification, strength, and compressibility characteristics of the foundation strata.
- Suitable foundation systems and allowable soil bearing pressures.
- Preliminary recommendations for rigid and flexible pavements below unspecified traffic.

The purpose of this report is to provide the owner, structural engineer, civil engineer, and other design team professionals with preliminary recommendations to consider for the design and construction of the proposed project. This report should not be used by the contractor in lieu of project plans and specifications.

Project Authorization:

Formal authorization to perform the work was provided by Mr. Jon Grafton, Executive Director with the England Economic and Industrial Development District (Client), by accepting our July 10, 2015 written proposal. Authorization to proceed was provided on July 17, 2015. Field procedures were conducted on September 1st and 3rd, 2015. To accomplish the intended purposes, a three-phase study program was conducted which included:

- a field investigation consisting of three exploratory test borings with samples obtained at selected intervals;
- a lab testing program designed to evaluate the expansive and strength characteristics of the subsurface soils; and,
- an engineering analysis of the field and laboratory test data for preliminary foundation design recommendations.

No additional analysis was requested. A brief description of the field and laboratory test procedures are provided in the Appendix.

Project Description:

The project will be the development of an industrial park site. We understand that the industrial park could consist of a number of structures varying from one (1) story to four (4) stories in height. Preliminary structural information was not available at the time this report was prepared. The proposed buildings should consist of either steel or wood framing and could be supported on either shallow foundations, or on drilled shafts bearing at depths sufficient to resist the anticipated loadings. The pavements will most likely consist of light duty pavements for passenger cars and pickup trucks and heavy duty pavements for tractor-trailer trucks.

For the purpose of this report, we have assumed that column loads could be between 25 and 150 kips, and that maximum continuous wall loads will be between one (1) and four (4) kips per linear foot. Maximum uniform and isolated concentrated floor loads are expected to be 125 psf

and five (5) kips, respectively. Grade changes are expected to be nominal with no more than two (2) to three (3) feet of cut or fill.

Information pertaining to anticipated traffic loads and volumes was not available. For the purpose of our preliminary pavement analysis, we assume that the industrial traffic could consist of up to 250 repetitions of light passenger cars and pick-up trucks, 50 medium-sized delivery trucks and vans, and up to 100 heavy tractor-trailer trucks per day.

If any of this information should change significantly or be in error, it should be brought to our attention so that we may review recommendations made in this report.

Site and Subsurface Conditions:

The project site is north of the intersection of Chanute Drive and Vandenburg Drive in Alexandria, Rapides Parish, Louisiana. The site was noted to be relatively level with estimated elevation differences of no more than one (1) to two (2) feet. The site was vegetated with weeds and grass at the time of drilling. The drilling rig experienced no difficulty moving about the site.

Subsurface Stratigraphy:

The subsurface conditions at the proposed building site were explored by drilling a total of three (3) borings to depths between approximately 30 and 100 feet. The borings were located in the field by the drilling crew as shown on the Plan of Borings included in the Appendix of this report.

The stratification of the soils encountered during field drilling operations is presented on the boring logs in the Appendix. The stratification of the subsurface materials shown on the boring logs represents the subsurface conditions encountered at the actual boring locations and variations may occur across the site. The lines of demarcation represent the approximate boundary between the soil types, but the actual transition may be gradual. The following subsurface descriptions are of a generalized nature to highlight the major stratification features. The boring logs should be reviewed for more detailed information.

In order of increasing depth, the borings generally encountered the following soil strata beneath the surface: lean clay (CL), slightly clayey silt (CL-ML), silty sand (SM), lean to fat clay (CL-CH), fat clay (CH), and poorly graded sand (SP).

Groundwater Conditions:

Seepage was observed only in Borings B-1 and B-2 at depths of 12 and 13.5 feet during advancement of the test borings. Groundwater was measured at depths of 12.5 to 25 feet below existing ground surface upon completion of the borings. The subsurface water regime is subject to change with variations in climatic conditions. Future construction activities may also alter the surface and/or subsurface drainage patterns of this site. Therefore, groundwater conditions should be explored at the start of construction by others. If there is a noticeable variance from the observations reported herein, then GTL should be notified immediately to review the effect, if any, such data may have on the design recommendations. It is not possible to predict future ground water conditions based upon short-term observations.

Foundation Recommendations:

The soil parameters presented below are based on single borings placed at irregular intervals across the site. The deviations between the boring locations indicate variable subsurface conditions across the site and should not be assumed as representative of the entire site. Thus, the findings presented herein should be considered preliminary in nature and should be confirmed through further investigation prior to development of the subject parcel. Prior to

developing any section of the tract, a specific subsurface investigation should be obtained and tailored to the individual project. This report should not be used in lieu of a final geotechnical investigation addressing site specific needs for the intended projects.

Detailed information on structural systems and planned grading is currently unavailable. Based on the size and type of anticipated structures, as well as the findings from this investigation, a system of shallow footings with an on-grade floor slab, in conjunction with the recommended subgrade preparation is believed to be the most practical and economical means of support. However, heavier building loads could result in the use of deep foundations. Recommendations for both foundation types are discusses separately below.

A Potential Vertical Rise (PVR) value of approximately one (1) inch was determined for this site. One (1) inch of PVR is generally accepted as the maximum allowable value for design and construction in the geographical area. The surficial soils encountered by the borings are considered to be moderately expansive.

Shallow Foundations:

Based on the limited information from our preliminary borings, the grading for the building pads should provide not less than 18 inches of density-approved select fill below the finished subgrade elevation for the slabs and should extend at least five (5) feet beyond the perimeter of the buildings. The fill can be used to elevate the building pads so that positive drainage is provided away from the buildings. Where feasible, elevating the building pad with fill is generally desirable because this aids in providing positive drainage away from the floor slabs and foundations and helps prevent water from collecting in the filled areas.

Shallow foundations may utilize individual or continuous footings bearing within the upper five (5) feet of the surficial zone. The provision of at least one (1) to two (2) feet of select fill should be anticipated to provide a suitable subgrade for the floor slabs. Typical bearing capacity values for shallow spread footings may vary from between approximately 1,800 psf to 2,500 psf for soils with consistencies of medium dense or medium stiff. Strip footings for continuous wall loads may be estimated between 1,350 and 2,000 pounds per linear foot.

Select Fill:

After the subgrade has been prepared and inspected, fill placement may begin. Select fill material should be free of organic or other deleterious materials, homogeneous mixture, have a maximum particle size of three (3) inches, have a liquid limit less than 40 and plasticity index between 8 and 20, and consist of silty-clayey sands (SM-SC), low plasticity sandy clays (CL), or clayey sands (SC) as defined by the Unified Soil Classification System. In addition to the above requirements, the material should have a maximum of 70 percent passing the No. 200 sieve. If a fine-grained material is used for fill, very close moisture content control will be required to achieve the recommended degree of compaction.

Deep Foundations:

As previously discussed, consideration may be given to placing heavier structural or special equipment loads on deep foundations consisting of drilled, straight-sided, cast-in-place concrete shafts or driven piles. If drilled shafts are considered, the shafts should be founded at a minimum estimated depth of 25 feet below the existing ground surface. The table below presents the estimated allowable single shaft capacities for 18- and 24-inch diameter shafts founded at depths between 25 and 50 feet below present ground surface.

Diameter of Shaft (inches)	Depth of Shaft (feet)	Allowable Single Shaft Capacity (kips)	
		Compressive	Uplift
18	25	20	15
	30	35	20
	35	40	25
	40	50	35
	45	85	45
	50	110	60
24	25	30	25
	30	50	30
	35	55	40
	40	70	45
	45	120	60
	50	150	85

The factor of safety for these calculations is estimated to be 2.0. Shafts should have a minimum diameter of 18 inches even if the actual bearing pressure is less than the design value. Groundwater will most likely be encountered in the drilled shafts. Casing for installing drilled shafts is always a possible necessity when dealing with the unknowns inherent with subsurface conditions. It is prudent for contract documents to include this option.

Driven Piles:

The superstructure loads may be supported on Class B creosote treated timber piles founded at a minimum depth of 30 feet below the existing ground surface. The following table presents preliminary allowable pile capacities.

Depth (feet)	Allowable Single Pile Capacity (kips)	
	Compressive	Uplift
30	20	10
35	25	15
40	40	20
45	55	25
50	75	40

If the above allowable timber pile loads are found to be inadequate, consideration may be given to using 12-inch square per-cast, pre-stressed concrete piles. Such piles may be selected from the following table. The factor of safety for these and the above values is 2.0.

Depth (feet)	Allowable Single Pile Capacity (kips)	
	Compressive	Uplift
30	35	20
35	40	25
40	70	40
45	100	60
50	125	70

Total settlement is estimated to be on the order of one (1) inch or less for driven piles. Differential settlements (between adjacent piles or clusters) are estimated to be on the order of 0.5 inch or less.

Seismicity:

Based on Section 1613 of the IBC-2012, a Site Class of E has been estimated for this site. According to the USGS website for Seismic Hazard Design Parameters, the project site has a mapped 0.2 second spectral response acceleration (S_s) of 0.128 g. The project also has a mapped 1.0 second spectral response acceleration (S_l) of 0.060. The design spectral response accelerations, S_{DS} and S_{Dl}, were determined to be 0.213 g and 0.140 g, respectively. Based on Tables 1613.3.5(1) and 1613.3.5(2), the site has an assigned Seismic Design Category of C for structures classified as Risk Categories I, II, and III. For structures classified as Risk Category IV, site has an assigned Seismic Design Category of D.

The presence of medium Dense sands below the water table results in a moderate potential for liquefaction to occur.

Pavements:

Information for this pavement analysis is inferred from the building borings. Our scope of services did not include extensive sampling and CBR testing of existing subgrade or potential sources of imported base material 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. It has been assumed that the constructed pavement subgrade will consist of well compacted soils.

Geogrid

We recommend placing geogrid below all heavy duty drives and heavy duty parking areas. The addition of the geogrid can significantly improve the performance of the pavements and extend the service life. All pavements receiving heavy duty traffic should receive a single layer of Tensar TriAx TX160 geogrid or equal. If a biaxial geogrid is considered, Tensar BX1200 geogrid or equal may be substituted. The placement and lap joints should be in accordance with the manufacturer's suggestions.

Base:

Granular base should meet the requirements for Item 1003.03(b) of the LA SSFRB for crushed stone or Item 1003.03(c) for recycled Portland cement concrete. The material should be compacted to 95 percent of the maximum density defined by the Modified Proctor (ASTM D-1557).

Asphaltic Pavement Materials:

Surface or wearing course asphaltic concrete should consist of a Type 3 Wearing Course Mixture contained in Item 501 of the LA SSFRB. Field density results should be based on the Theoretical Maximum Specific Gravity in accordance with DOTD TR 327. Minimum density requirements should be 89.0 percent for parking lots and shoulders and 92.0 percent for Travel Lane Wearing, Binder and Base Courses. Placement and processes should be in strict accordance with Part V of the above referenced specifications.

Portland Cement Concrete:

Concrete compressive strength should be a minimum of 3,500 psi at 28 days. The concrete should be designed with 5 percent (± 1 percent) entrained air to improve workability and durability. The design of steel reinforcement should be in accordance with local or accepted codes.

Subbase:

Consideration should be given to using a subbase below concrete pavements to provide a consistently firm surface upon which to place the concrete and reduce instability. The table below presents the options to reduce the likelihood of a pumping subgrade below the pavements.

REDUCED PUMPING SUBBASES			
Recommended Thickness	**Type Material**	**LA SSFRB Designation**	**Maximum PI**
4.0"	Crushed Stone	Item 1003.03(b)	4
4.0"	Clean Sand	Item 1003.02(a)	N/P
6.0"	Sand-Clay-Gravel	Item 1003.04(b)	15

Granular base material should be compacted to 95 percent of the maximum density defined by the Modified Proctor (ASTM D-1557). Clean sand and sand-clay-gravel mixtures should be compacted to 95 percent of Standard Proctor density (ASTM D-698).

Traffic and Design Data:

The general pavement design information presented in this report is based on subsurface conditions inferred by the test borings, information published by The Asphalt Institute, the Portland Cement Association, and past experience in the locale. The published information was utilized in conjunction with the available field and laboratory test data to develop general pavement designs based on the AASHTO structural numbering system.

The sections shown below are not based upon anticipated traffic loads as these were not available at the time this report was prepared. For the purpose of this pavement analysis, we assume that the industrial traffic could consist of up to 250 repetitions of light passenger cars and pick-up trucks, 50 medium-sized delivery trucks and vans, and up to 100 heavy tractor-trailer trucks per day.

Recommended Pavement Sections:

The table below presents a summary of both rigid and flexible pavement sections for light and heavy duty applications. It should be noted that the pavement sections as presented below are minimums. If it is desired to reduce potential cracking, greater thickness of select fill and/or greater pavement section thickness could be utilized. In addition, long term pavement performance requires good drainage and performance of periodic maintenance activities.

MINIMUM PAVEMENT RECOMMENDATIONS *		
Pavement Type	**Light Duty (Parking Stalls)**	**Heavy Duty (Entries, Drives & Parking)**
Portland Cement Concrete	5.0" Portland Cement Concrete 4.0" Item 1003.03 (b) Base 8.0" Density-Approved Subgrade or Imported Fill	8.0" Portland Cement Concrete 6.0" Item 1003.03 (b) Base One Layer Tensar TriAx TX160 Geogrid 8.0" Density-Approved Subgrade or Imported Fill
Asphalt Over Crushed Stone Base	2.0" Item 501 Type 3 Surface 6.0" Item 1003.03 (b) Base 8.0" Density-Approved Subgrade or Imported Fill	4.0" Item 501 Type 3 Surface 12.0" Item 1003.03 (b) Base One Layer Tensar TriAx TX160 Geogrid 8.0" Density-Approved Subgrade or Imported Fill
*Materials should meet general requirements of the Louisiana DOTD Standard Specifications for Construction of Roads & Bridges, and specific requirements listed herein.		

Concrete thickness at trash receptacles should be a minimum of seven (7) inches. All paving recommendations are based on stable subgrade. Subgrade areas which are unstable should be over-excavated and replaced, or otherwise rendered stable prior to proceeding with base material placement.

Geotechnical Risk:

The concept of risk is an important aspect of the geotechnical evaluation. The primary reason for this is that the analytical methods used to develop geotechnical recommendations do not comprise an exact science. The analytical tools which geotechnical engineers use are generally empirical and must be used in conjunction with engineering judgment and experience. Therefore, the solutions and recommendations presented in the geotechnical evaluation should not be considered risk-free and, more importantly, are not a guarantee that the interaction between the soils and the proposed structure will perform as planned. The engineering recommendations presented in the preceding sections constitutes GTL's professional estimate of those measures that are necessary for the proposed structure to perform according to the proposed design based on the information generated and referenced during this evaluation, and GTL's experience in working with these conditions.

Limitations:

The exploration and analysis of the site conditions reported herein are considered preliminary in detail and scope and are not intended to form a basis for pavement and foundation design. The information submitted is based on the available soil information only and not on design details for the intended projects.

The findings, recommendations or professional advice contained herein have been made after being prepared in accordance with generally accepted professional engineering practice in the fields of foundation engineering, soil mechanics, and engineering geology. No other warranties are implied or expressed.

The scope of services did not include any environmental assessment for 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, or unusual or suspicious items or conditions are strictly for the information of the client. Prior to purchase or development of this site, an environmental assessment is advisable.

The scope of services did not include a geologic investigation to address any faults, large scale subsidence, or other macro geologic features not specifically addressed in this report or the agreement between GTL and the client.

After plans are more complete, it is recommended that the soils and foundation engineer be retained to provided a subsurface investigation tailored to meet the specific needs of the project.

This report has been prepared for the exclusive use of our client for the general application for the referenced project. GTL cannot be responsible for interpretations, opinions, or recommendations made by others based on the data contained in this report.

This report was prepared for general purposes only and should not be considered sufficient for purposes of preparing accurate plans for construction. Contractors reviewing this report are advised that the discussions and recommendations contained herein were provided exclusively to and for use by the project owner.

END OF REPORT TEXT

APPENDIX A

FIELD AND LABORATORY PROCEDURES

Field And Laboratory Procedures
England Airpark Heavy Industrial Site E2
Alexandria, Rapides Parish, Louisiana
Report Number 09-15-131

I. Field Operations:

Subsurface conditions were evaluated by advancing three (3) intermittent sample borings on September 1st and 3rd, 2015 within the project area. Boring locations were selected and staked in the field by representatives of Geotechnical Testing Laboratory, Inc. An illustration of the approximate project locations and boring locations with respect to the areas investigated is provided on the attached Project Location Map and Plan of Borings, respectively. Descriptive terms and symbols used on the logs are in accordance with the Unified Soil (USCS) Classification System.

An all-terrain track-mounted rotary drill rig was used to make the test borings. Each boring was rotary washed using flight auger drilling techniques. Intermittent undisturbed samples were obtained in the following manner.

Standard penetration tests were performed in accordance with ASTM D-1586 procedures. This test is conducted by recording the number of blows required for a 140-pound hammer falling 30 inches to drive a split-spoon sampler eighteen inches into the substrata. Depths at which split-spoon samples were taken are indicated by two crossed lines in the "Samples" column on the Log of Boring. The number of blows required to drive the sampler for each 6-inch increment were recorded. The penetration resistance is the number of blows required to drive the split-spoon sampler the final 12-inches of penetration. Information related to the penetration resistance is presented under the "Field Data" heading of the Log of Boring as the Standard Penetration (Blows/Foot). These samples were visually examined, logged, and packaged for transport to our laboratory.

Cohesive strata were sampled in accordance with ASTM D-1587 procedures by means of pushing a thin walled Shelby tube a distance of two feet into the substrata. Consistency of the sample was measured in the field by means of a calibrated hand penetrometer. Such values, in tons per square foot, are provided under the "Field Data" heading on the Log of Boring. Depths which these undisturbed samples were obtained are indicated by a shaded portion in the "Samples" column of the Log of Boring. All samples were prudently extruded in the field were sealed to maintain "in-situ" conditions, labeled, and packaged for transport to our laboratory.

The presence of ground water was monitored during drilling operations. Initial water seepage readings are provided under "Groundwater Information" in the right hand column of the Log of Boring. After boring completion, water levels were allowed to rise and stabilize for several minutes prior to final water readings. These readings are also found under "Groundwater Information". Soil sloughing from the walls of the boring are also recorded here as depth of cave-in.

II. Laboratory Studies:

Upon return to the laboratory, all samples were visually examined and representative samples were selected for testing. Tests were performed on selected samples recovered from the test borings to verify classification and to determine pertinent engineering properties of the substrata. Individual test and designations are provided on the following page.

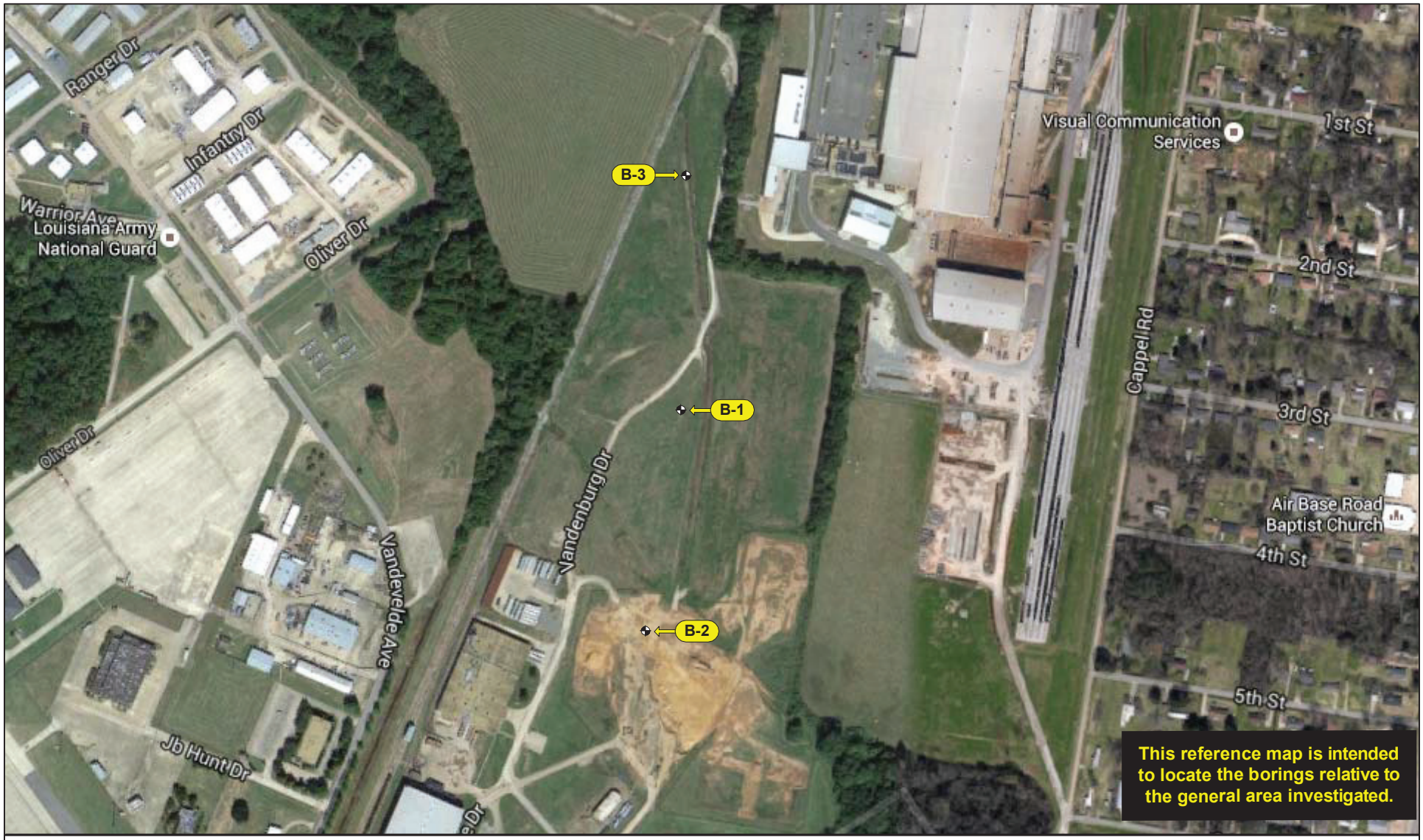
Test	Designations
Atterberg Limits	ASTM D4318
Moisture Content	ASTM D2216
Partial Gradation	ASTM D1140
Unconfined Compression Tests	ASTM D2166

Results for soil classifications are tabulated on the Log of Boring in their respective columns under "Laboratory Data."

Samples obtained during our field studies and not consumed by laboratory testing procedures will be retained free of charge for a period of 30 days. Arrangements for storage beyond that period of time must be made in writing to ***Geotechnical Testing Laboratory, Inc.***

APPENDIX B

PLAN OF BORINGS



Plan of Borings

PROJECT			
England Airport Heavy Industrial Site E2, Alexandria, Rapides Parish, Louisiana			
SCALE	DATE	FILE NUMBER	CLIENT
Not to Scale	9/8/2015	09-15-131	*England Economic and Industrial Development District*

N

APPENDIX C

BORING LOGS AND SOIL CLASSIFICATION CHART

LOG OF BORING B-1

Geotechnical Testing Laboratory, Inc.
226 Parkwood Drive
Alexandria, LA 71301
Telephone: (318) 443-7429

CLIENT: England Economic and Industrial Development District
PROJECT: England Airpark Heavy Industrial Site E2
LOCATION: Alexandria, Rapides Parish, Louisiana
FILE NO.: 09-15-131
DRILL DATE: 9/3/15

DRILLING METHOD(S):
Diedrich D-50, Rotary Drill

LOGGED BY: R. Leggett CHECKED BY: H. Carroll, E.I.

GROUNDWATER INFORMATION:
Water Seepage Noted @ 13.5 Feet While Drilling
Water Observed @ 25.0 feet Upon Completion
Boring Walls Collapsed @ 37.0 Feet

SURFACE ELEVATION: Not Determined

SOIL SYMBOL	DEPTH (FT)	SAMPLES	N: BLOWS/FT P: TONS/SQ FT	MOISTURE CONTENT (%)	ATTERBERG LIMITS LIQUID LIMIT LL	ATTERBERG LIMITS PLASTIC LIMIT PL	ATTERBERG LIMITS PLASTICITY INDEX PI	MINUS NO. 200 SIEVE (%)	DRY DENSITY (Lbs./Cu.Ft.)	COMPRESSIVE STRENGTH (Lb./Sq. Ft.)	DESCRIPTION OF STRATUM
			N = 13	11	40	22	18	96			Stiff Yellowish Brown LEAN CLAY (CL) w/silt
			N = 19	10							- very stiff @ 2.0 feet
											3.0'
			N = 17	15	27	23	4	91			Medium Dense Yellowish Brown, Slightly Clayey, SILT (CL-ML)
	5										5.0'
			N = 4	27							Firm Yellowish Red LEAN CLAY (CL) w/silt
			N = 3	31	32	22	10	95			- soft @ 7.0 feet
			N = 4	24							- firm @ 9.0 feet
	10										13.0'
			N = 6	27	61	24	37	98			Firm Yellowish Red FAT CLAY (CH)
	15										
			P = 1.75	30					92	2222	- stiff @ 19.0 feet
	20										
			P = 0.75	24					100	1847	- firm @ 24.0 feet
	25										26.0'
			P = 1.75	22	38	22	16	95	105	2760	Stiff Yellowish Red LEAN CLAY (CL) w/silt
	30										
			P = 1.25	22					105	1759	- firm @ 34.0 feet
	35										37.0'
			N = 10	23	NP	NP	NP	5			Medium Dense Yellowish Red, Poorly Graded, SAND (SP)
	40										
			N = 31	22							- dense @ 44.0 feet
	45										
			N = 36	23							
	50										
			N = 26	22	NP	NP	NP	6			- medium dense @ 54.0 feet
	55										
			N = 35	22							- dense @ 58.5 feet
	60										

N - STANDARD PENETRATION TEST RESISTANCE
P - POCKET PENETROMETER RESISTANCE

NOTES:
See Plan of Borings for Location
GPS Coordinates: 31°20'3.4" N / -92°31'49.1" W
Stratification and Groundwater Depths Are Not Exact

LOG OF BORING B-1

Geotechnical Testing Laboratory, Inc.
226 Parkwood Drive
Alexandria, LA 71301
Telephone: (318) 443-7429

CLIENT: England Economic and Industrial Development District
PROJECT: England Airpark Heavy Industrial Site E2
LOCATION: Alexandria, Rapides Parish, Louisiana
FILE NO.: 09-15-131
DRILL DATE: 9/3/15

DRILLING METHOD(S):
Diedrich D-50, Rotary Drill

LOGGED BY: R. Leggett CHECKED BY: H. Carroll, E.I.

GROUNDWATER INFORMATION:
Water Seepage Noted @ 13.5 Feet While Drilling
Water Observed @ 25.0 feet Upon Completion
Boring Walls Collapsed @ 37.0 Feet

SOIL SYMBOL	DEPTH (FT)	SAMPLES	N: BLOWS/FT P: TONS/SQ FT	MOISTURE CONTENT (%)	ATTERBERG LIMITS LL	ATTERBERG LIMITS PL	ATTERBERG LIMITS PI	MINUS NO. 200 SIEVE (%)	DRY DENSITY (Lbs./Cu.Ft.)	COMPRESSIVE STRENGTH (Lb./Sq. Ft.)	DESCRIPTION OF STRATUM
											Medium Dense Yellowish Red, Poorly Graded, SAND (SP) *(continued)*
											63.0'
	65		N = 7	33							Firm Yellowish Red FAT CLAY (CH)
	70		P = 0.75	39	61	24	37	98	83	1614	
	75		P = 1.25	47					76	2993	- stiff below 74.0 feet
	80		P = 1.50	45					79	3601	
	85		N = 11	27							
											88.5'
	90		N = 6	26	24	18	6	58			Loose Brown, Slightly Clayey, Sandy SILT (CL-ML)s
	95		N = 15	28							- medium dense below 94.0 feet
	100		N = 17	28							100.0'
											Boring Terminated @ 100.0 Feet

N - STANDARD PENETRATION TEST RESISTANCE
P - POCKET PENETROMETER RESISTANCE

NOTES:
See Plan of Borings for Location
GPS Coordinates: 31°20'3.4" N / -92°31'49.1" W
Stratification and Groundwater Depths Are Not Exact

LOG OF BORING B-2

Geotechnical Testing Laboratory, Inc.
226 Parkwood Drive
Alexandria, LA 71301
Telephone: (318) 443-7429

CLIENT: England Economic and Industrial Development District
PROJECT: England Airpark Heavy Industrial Site E2
LOCATION: Alexandria, Rapides Parish, Louisiana
FILE NO.: 09-15-131
DRILL DATE: 9/1/15

DRILLING METHOD(S):
CME 45B, 4.5" I.D. Hollow Stem Auger

LOGGED BY: R. Leggett CHECKED BY: H. Carroll, E.I.

GROUNDWATER INFORMATION:
No Water Seepage Noted While Drilling
No Water Observed Upon Completion
Boring Walls Remained Un-caved

SURFACE ELEVATION: Not Determined

SOIL SYMBOL	DEPTH (FT)	SAMPLES	N: BLOWS/FT P: TONS/SQ FT	MOISTURE CONTENT (%)	ATTERBERG LIMITS LL	ATTERBERG LIMITS PL	ATTERBERG LIMITS PI	MINUS NO. 200 SIEVE (%)	DRY DENSITY (Lbs./Cu.Ft.)	COMPRESSIVE STRENGTH (Lb./Sq. Ft.)	DESCRIPTION OF STRATUM
			N = 26	8							Medium Dense Dark Brown Silty Sand (SM)
											1.5'
			N = 5	25	31	20	11	96			Firm Yellowish Red LEAN CLAY (CL)
			N = 4	27							
	5		N = 4	28							
											6.5'
			N = 5	38	63	24	39	98			Firm Yellowish Red FAT CLAY (CH)
			N = 3	27							- w/clayey silt (CL-ML) layer @ 9.0 feet
	10										
			P = 3.00	34					89	2339	- stiff @ 14.0 feet
	15										
			P = 3.00	28	61	24	37	99	95	2058	
	20										
			P = 1.75	29					93	2120	
	25										
											- firm @ 28.0 feet
			P = 1.50	27					93	1823	
	30										30.0'
											Boring Terminated @ 30.0 Feet

N - STANDARD PENETRATION TEST RESISTANCE
P - POCKET PENETROMETER RESISTANCE

NOTES:
See Plan of Borings for Location
GPS Coordinates: 31°19'56.0" N / -92°31'50.9" W
Stratification and Groundwater Depths Are Not Exact

LOG OF BORING B-3

Geotechnical Testing Laboratory, Inc.
226 Parkwood Drive
Alexandria, LA 71301
Telephone: (318) 443-7429

CLIENT: England Economic and Industrial Development District
PROJECT: England Airpark Heavy Industrial Site E2
LOCATION: Alexandria, Rapides Parish, Louisiana
FILE NO.: 09-15-131
DRILL DATE: 9/1/15

DRILLING METHOD(S):
CME 45B, 4.5" I.D. Hollow Stem Auger

LOGGED BY: R. Leggett CHECKED BY: H. Carroll, E.I.

GROUNDWATER INFORMATION:
Water Seepage Noted @ 12.0 Feet While Drilling
Water Observed @ 12.5 feet Upon Completion
Boring Walls Collapsed @ 12.5 Feet

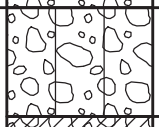
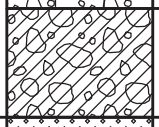
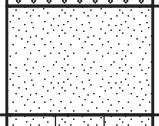
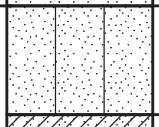
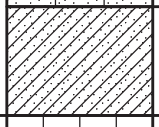
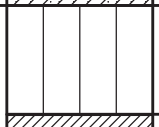
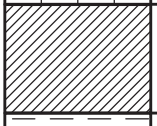
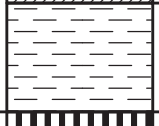
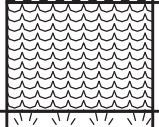
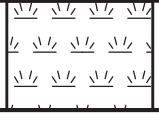
SURFACE ELEVATION: Not Determined

SOIL SYMBOL	DEPTH (FT)	SAMPLES	FIELD DATA N: BLOWS/FT P: TONS/SQ FT	MOISTURE CONTENT (%)	ATTERBERG LIMITS LIQUID LIMIT LL	ATTERBERG LIMITS PLASTIC LIMIT PL	ATTERBERG LIMITS PLASTICITY INDEX PI	MINUS NO. 200 SIEVE (%)	DRY DENSITY (Lbs./Cu.Ft.)	COMPRESSIVE STRENGTH (Lb./Sq. Ft.)	DESCRIPTION OF STRATUM
			N = 18	8	36	22	14	95			Very Stiff Brown LEAN CLAY (CL) w/silt
											1.5'
			N = 12	17							Stiff Yellowish Red LEAN to FAT CLAY (CL-CH)
			P = 4.00	18	49	24	25	98	106	8887	- hard @ 4.0 feet
	5										5.0'
			P = 0.50	22							Firm Yellowish Red LEAN CLAY (CL) w/silt
			N = 4	24	38	23	15	96			
			N = 5	24							
	10										
											12.5'
											Stiff Yellowish Red FAT CLAY (CH)
	15		P = 1.75	29	59	25	34	99	95	3134	
			P = 1.25	37					85	2502	
	20										
			P = 1.25	34	64	26	38	99	88	1955	- firm below 24.0 feet
	25										
			P = 1.00	32					90	1652	
	30										30.0'
											Boring Terminated @ 30.0 Feet

N - STANDARD PENETRATION TEST RESISTANCE
P - POCKET PENETROMETER RESISTANCE

NOTES:
See Plan of Borings for Location
GPS Coordinates: 31°20'10.7" N / -92°31'49.3" W
Stratification and Groundwater Depths Are Not Exact

SOIL CLASSIFICATION CHART

MAJOR DIVISIONS			SYMBOLS		TYPICAL DESCRIPTIONS
			GRAPH	LETTER	
COARSE GRAINED SOILS MORE THAN 50% OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	CLEAN GRAVELS (LITTLE OR NO FINES)		GW	WELL-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
				GP	POORLY-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
		GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES)		GM	SILTY GRAVELS, GRAVEL - SAND - SILT MIXTURES
				GC	CLAYEY GRAVELS, GRAVEL - SAND - CLAY MIXTURES
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	CLEAN SANDS (LITTLE OR NO FINES)		SW	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
				SP	POORLY-GRADED SANDS, GRAVELLY SAND, LITTLE OR NO FINES
		SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)		SM	SILTY SANDS, SAND - SILT MIXTURES
				SC	CLAYEY SANDS, SAND - CLAY MIXTURES
FINE GRAINED SOILS MORE THAN 50% OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	SILTS AND CLAYS	LIQUID LIMIT LESS THAN 50		ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
				OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS	LIQUID LIMIT GREATER THAN 50		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS
				CH	INORGANIC CLAYS OF HIGH PLASTICITY
				OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS				PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

NOTE: DUAL SYMBOLS ARE USED TO INDICATE BORDERLINE SOIL CLASSIFICATIONS