

Exhibit AA.

North Schaefer Site

Preliminary Geotechnical Engineering Report



**North Schaefer Site
Preliminary Geotechnical
Engineering Report**

December 1, 2023

One Acadiana
804 East St. Mary Boulevard
Lafayette, Louisiana 70503

Attn: Mr. Emile Lege

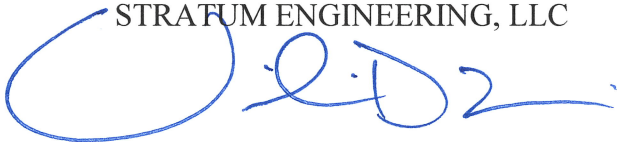
Re: Preliminary Geotechnical Engineering Report
LED Site Characterization
North Schaefer Site
St. Martin Parish, Louisiana
SE Project No. G23-097

Dear Ms. Lege:

Stratum Engineering, LLC (SE) is pleased to submit our Preliminary Geotechnical Engineering Report for the above referenced project. The report includes the results of field and laboratory testing, as well as preliminary recommendations regarding the suitability of the site for future industrial developments.

We appreciate the opportunity to perform this geotechnical study and look forward to the development of the property and our continued involvement with this project. If you have any questions pertaining to this report, or if we may be of further service, please contact our office.

Respectfully submitted,
STRATUM ENGINEERING, LLC



William "Dean" McInnis, P.E.
Senior Project Manager

WDM/TYM;jkh



Tony Y. Maroun, P.E.
Principal

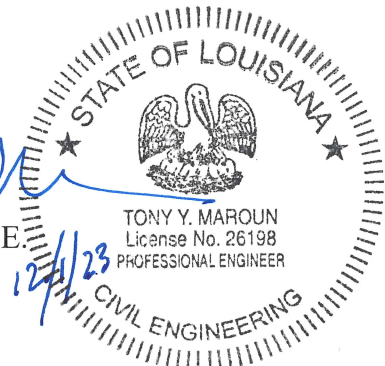


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PROJECT INFORMATION

Project Authorization

Stratum Engineering, LLC (SE) has completed a preliminary geotechnical exploration to characterize the North Schaefer Site for a potential future development in St. Martin Parish, Louisiana in support of the Louisiana Economic Development (LED) Site Certification process. The exploration was accomplished in general accordance with SE Proposal No. G23-084, dated May 1, 2023.

Project Description

The North Schaefer property is located in an area of industrial/business developments. In anticipation of comparable business or industrial development on this property, the site will be characterized to verify the soil conditions and provide preliminary foundation recommendations for typical structures which could be constructed at the site.

Generally, industrial developments could consist of multiple structures with associated light and heavy duty pavements. The buildings may be single or multi-story structures with steel frames and load bearing masonry or tilt up walls, or could be of cast-in-place concrete. Depending on the building spans, maximum interior column load could range from 100 to 300 kips. Maximum wall loads are assumed to be 5 to 10 kips per foot. Floor loads could range between 150 to 700 psf. The structures may be grade supported or dock high, requiring 4 to 5 feet of fill to reach the building finished floor elevation.

Traffic associated with industrial facilities of this size could consist of heavy tractor trailers with an average daily traffic (ADT) of 50 to 100 trucks per day for a design life of 20 years. For these types of facilities, rigid pavements are widely considered for their longevity and ability to support the high volume of traffic.

Purpose and Scope of Services

The purpose of this study was to explore the subsurface conditions at the site in order to enable an evaluation of a suitable foundation system for potential future industrial facilities.

Based on the parcel size and the criteria provided by CSRS, the scope of services included drilling one (1) boring to a depth of 50 feet and one (1) boring to a depth of 30 feet at accessible locations across the site. The borings were located in the field by a Stratum Engineering representative using normal taping from existing landmarks as indicated on the attached Boring Location Plan which is a reproduction of an aerial photograph of the property.

In addition to drilling the soil borings, our scope of services included a reconnaissance of the project site, select laboratory testing, and preparation of this preliminary geotechnical report. The report briefly outlines the testing procedures, presents available project information, describes the site and subsurface conditions, and provides results of analysis and recommendations regarding the following:

- Preliminary foundation types, depths, allowable bearing capacities, allowable pile capacities, and estimate of settlements;
- Seismic site classification;
- Typical soil parameters for flexible and rigid pavements.

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

SITE AND SUBSURFACE CONDITIONS

Site Description and Location

The property is situated in an industrial development area with businesses supporting energy/oil field operations. The North Schaefer site encompasses approximately 30 acres of undeveloped property located on the north side of Forum Drive at Labit Road. The property is flat and covered with short vegetation and was accessible to standard drilling equipment.

Detailed grading information was not available at the time this report was prepared. However, it was assumed that two (2) to 3 feet of fill may be needed to reach the design grades.

Drilling and Sampling

The borings were drilled with an All-Terrain Vehicle (ATV) mounted drilling rig. Auger and wet rotary drilling techniques were used to advance the borings. Samples were generally obtained continuously from the ground surface to a depth of ten feet and at maximum five foot intervals thereafter. Drilling and sampling techniques were accomplished in general accordance with ASTM Standards.

Undisturbed samples of cohesive soils were generally obtained using thin-wall tube sampling procedures in general accordance with the procedures for “Thin-Walled Tube Geotechnical Sampling of Soils” (ASTM D1587). These samples were extruded in the field with a hydraulic ram and were wrapped in aluminum foil prior to placement in a plastic wrapping to preserve moisture. The samples were transported to the laboratory in containers to prevent disturbance.

The laboratory testing program included supplementary visual classification and water content tests on all of the soil samples. In addition, selected samples were subjected to unconfined compression testing, percent passing the #200 sieve and Atterberg Limits determination. Additional estimates of unconfined compressive strength were made using a hand penetrometer. The laboratory testing was performed in general accordance with ASTM Standard Procedures.

Subsurface Conditions

Based on the borings, about 10 inches of silty topsoil with organics covered the surface. The topsoil was generally underlain by very stiff tannish gray silty clay to a depth of 2 feet. The surficial material was followed by alternating layers of very stiff tannish gray lean and fat clay to a depth of at least 50 feet, the maximum depth explored.

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

Groundwater Conditions

Groundwater was initially encountered in the borings at a depth of 14 to 15 feet during drilling and was measured at a depth of 12 ½ to 13 feet upon completion of drilling. However, it should be noted that groundwater levels will fluctuate with seasonal variations in rainfall, extended periods of drought or surface runoff. Therefore, it is recommended that the actual groundwater level at the site be determined by the contractor at the time of the construction activities, if needed.

IBC Site Classification

The International Building Code (IBC), 2021 Edition, was reviewed to determine the site classification for seismic design. Based on the soils encountered in the borings and our experience in the general vicinity, the site can be classified as Site Class “D” as outlined in Section 1613.2.2 of the Building Code.

EVALUATION AND RECOMMENDATIONS

General

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

It is our understanding the site will be marketed for development of potential industrial facilities. Typical structures could be grade supported or dock high facilities requiring 4 to 5 feet of fill to reach the design grade.

The results of the exploration indicate that the soils at the site are fair in bearing quality and suitable for supporting the potential improvements on a shallow foundation system provided the site is prepared as recommended in the report. Details related to foundation recommendations and construction considerations are presented in subsequent sections of this report.

Shallow Foundations

Based on the field data and laboratory test results, the site is suitable to support typical industrial developments on shallow foundations bearing at least two (2) feet below the finished grade. Shallow spread and continuous wall footings bearing in the compacted structural fill or in the naturally occurring stiff clay can be designed for maximum allowable bearing pressures of 2,500 and 2,000 pounds per square foot, respectively. Minimum dimensions of 24 inches for spread footings and 18 inches for continuous footings should be used in the design, even if the resulting bearing pressure is less than the allowable bearing pressure, to minimize the possibility of a local bearing failure. The recommended preliminary bearing capacities include a factor of safety of three (3).

Settlement

Areal settlement under a building is generally caused by the amount of fill placed, the building footprint and the subsurface soil conditions encountered in the building area. Similarly, footing settlement depends on the footing size as well as the soil conditions below the footing. At the time this report was prepared, the type of structures had not been identified and the amount of fill needed to achieve the design grade was not known. However, based on the subsurface conditions encountered at the site, areal settlement is anticipated to be minimal with the addition of two (2) to 3 feet of fill.

Furthermore, based on the assumed structural loads, foundation settlement will be less than one (1) inch provided the footings are designed for the recommended bearing pressures.

Floor Slab

A slab-on-grade may be supported on compacted low plasticity structural fill. While detailed site preparation recommendations were beyond the scope of this study, stripping of at least 12 to 18 inches should be anticipated to remove the topsoil, organics and other deleterious materials. Proofrolling should be accomplished following the stripping to identify any soft or unstable soils which should be removed from the floor slab area prior to fill placement and/or floor slab construction. Any required structural fill should be placed in lifts and be compacted to meet the applicable project specifications.

Deep Foundations

Generally, deep foundations systems are used to support heavily loaded structures by transferring the structural loads through the surficial soils to more adequate bearing strata and hence minimizing long term settlements.

Typical deep foundation systems used in the area include timber piles and auger cast-in-place piles which will derive their support capabilities mainly from skin friction with minimal end bearing support.

Large timber piles driven to a penetration depth of 40 to 45 feet could yield a maximum allowable compression capacity of about 23 to 25 tons while 14-inch diameter auger cast-in-place piles installed to a penetration depth of 45 to 50 feet could be designed for a maximum allowable compression capacity of 42 to 45 tons, respectively. The preliminary capacities presented in the report include a factor of safety of two (2) in compression.

Parameters for Pavement Design

Parking areas and drives associated with an industrial park are expected to consist generally of light duty pavement for employee parking as well as heavy duty pavement for large truck staging areas, parking areas and drives.

Based on the field data and laboratory test results, the near surface soil consists of silty clay. Typical California Bearing Ratio (CBR) values for the existing silty subgrade or imported clayey sand structural fill were estimated to be on the order of 4 to 5 corresponding to a Modulus of Subgrade Reaction (k) of about 125 pci which may be used for the design of flexible and rigid pavements, respectively. These values may be used along with the frequency and magnitude of anticipated traffic loads associated with the type of facility being constructed to yield adequate pavement sections for the development. Class II Base including crushed limestone or cement treated low plasticity clays for the flexible and/or rigid pavements would be viable options for the pavement.

CONSTRUCTION CONSIDERATIONS

Moisture Sensitive Soils/Weather Related Concerns

The upper silty soils encountered at the site are extremely sensitive to changes in moisture content and may lose significant strength if allowed to become saturated. In addition, soils that become wet may be slow to dry and thus significantly retard the progress of grading and compaction activities. During wet weather periods, increases in the moisture content of the upper soils can cause some reduction in the soil strength and support capabilities. Therefore, it will be advantageous to perform earthwork construction activities during dry weather. The site contractor shall be responsible for maintaining a firm, unyielding and stable subgrade condition. Should the near surface soils become wet, the contractor should be prepared to mitigate these conditions by repeated aeration and exposure to sunlight or by admixture treatment.

REPORT LIMITATIONS

The recommendations submitted in this report are based on the available subsurface information obtained by SE and assumed typical design loads for industrial developments. These recommendations are preliminary and general in nature. They should not be used in the design of a specific structure without conducting a detailed project specific investigation to verify the subsurface soil condition and determine if revisions to the recommendations are necessary.

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.

Once specific plans for a potential development are prepared, Stratum Engineering may be retained and provided the opportunity to conduct a more thorough geotechnical investigation and analysis utilizing project specific plans and specifications under consideration.

This report has been prepared for the exclusive use of One Acadiana for marketing and planning of the North Schaefer Site in St. Martin Parish, Louisiana.

APPENDIX



BORING LOCATION PLAN

SE PROJECT NO. G23-097

GEOTECHNICAL ENGINEERING SERVICES
LED SITE CHARACTERIZATION
NORTH SCHAEFER SITE
 ST. MARY PARISH, LOUISIANA



LOG OF BORING N-1
LED SITE CHARACTERIZATION
NORTH SCHAEFER SITE
ST. MARY PARISH, LOUISIANA

TYPE OF BORING: WET ROTARY

LOCATION: NW CORNER OF SITE

PROJECT NO.: G23-097

[illegible]

DEPTH OF BORING: 50 Feet
DATE: 10/20/2023

GROUNDWATER: Measured at 13 Feet Upon Completion of Drilling



STRATUM
ENGINEERING, LLC

LOG OF BORING N-2
LED SITE CHARACTERIZATION
NORTH SCHAEFER SITE
ST. MARY PARISH, LOUISIANA

TYPE OF BORING: WET ROTARY

LOCATION: SE CORNER OF SITE

PROJECT NO.: G23-097

DEPTH, FT.	SOIL TYPE	SAMPLES	DESCRIPTION	N-BLOWS/FT.	UNCONFINED COMPRESSIVE STRENGTH tsf	HAND PENTROMETER tsf	TORVANE tsf	UNIT DRY WEIGHT pcf	MOISTURE CONTENT %	LIQUID LIMIT	PLASTICITY INDEX	% PASSING #200 SIEVE
			10" Silty Topsoil with organics			4.50			7			
			Very stiff tannish gray Silty Clay									
			Very stiff tannish gray Fat Clay		4.16	4.50		106	18	52	29	97
5						4.50			21			
			Stiff to very stiff tannish gray Lean Clay with silt seams		1.21	2.75		99	23			
			- grayish brown at 8'			1.25			27			
10												
			▼									
			- becomes reddish tan at 13'		1.07	1.50		104	25			
15			▼									
			- with ferrous nodules at 13'									
						1.75			23			
20												
			- becomes firm to stiff tannish gray with sand and silt seams at 23'		0.54	1.00		101	27			
25												
						0.75			28			74
30												
			Boring Terminated at 30 Feet									
35												
40												
45												
50												

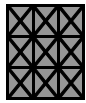
DEPTH OF BORING: 30 Feet
DATE: 10/20/2023

GROUNDWATER: Measured at 12 ½ Feet Upon Completion of Drilling

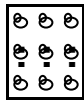


KEY TO TERMS AND SYMBOLS USED ON LOGS

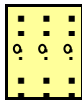
SOIL TYPE



ROCK



GRAVEL



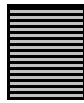
SAND



SILT

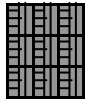


CLAY

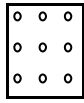


PEAT

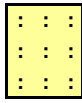
MODIFIERS



STONE



GRAVELY



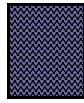
SANDY



SILTY

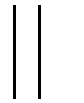


CLAYEY

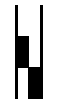


FILL

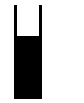
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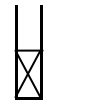
NO
SAMPLE



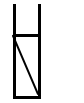
AUGER
SAMPLE



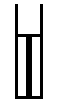
SHELBY
TUBE



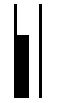
SPLIT
SPOON



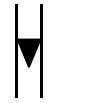
NO
RECOVERY



ROCK
CORE



2" SHELBY
TUBE



TxDOT
CONE

UNIFIED SOIL CLASSIFICATION SYSTEM - ASTM D 2487 (1980)

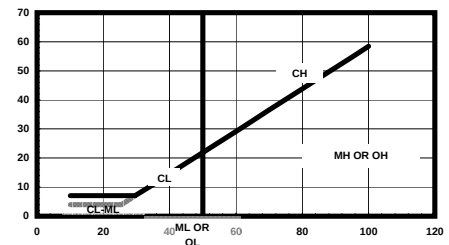
MAJOR DIVISIONS			LETTER SYMBOL	TYPICAL DESCRIPTIONS
COARSE GRAINED SOILS LESS THAN 50% PASSING NO. 4 SIEVE	GRAVEL & GRAVELLY SOILS	CLEAN GRAVEL	GW	WELL GRADED GRAVEL, GRAVEL-SAND MIXTURES WITH LITTLE OR NO FINES
		(LITTLE OR NO FINES	GP	POORLY GRADED GRAVEL, GRAVEL-SAND MIXTURES WITH LITTLE OR NO FINES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

CONSISTENCY OF COHESIVE SOILS

CONSISTENCY	SHEAR STRENGTH IN TONS/FT ²
VERY SOFT	0. TO 0.125
SOFT	0.125 TO 0.25
FIRM	0.25 TO 0.5
STIFF	0.5 TO 1.0
VERY STIFF	1.0 TO 2.0
HARD	> 2.0 OR 2.0+

RELATIVE DENSITY - GRANULAR SOILS

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



ABBREVIATIONS

HP - HAND PENETROMETER

TV - TORVANE

MV - MINIATURE VANE

UC - UNCONFINED COMPRESSION TEST

UU - UNCONSOLIDATED UNDRAINED TRIAXIAL

CU - CONSOLIDATED UNDRAINED

NOTE: PLOT INDICATES SHEAR STRENGTH AS OBTAINED BY ABOVE TESTS

CLASSIFICATION OF GRANULAR SOILS

U.S. STANDARD SIEVE SIZE(S)

BOUL- -DERS	COBBLES	GRAVEL		SAND			SILT	CLAY
		COARSE	FINE	COARSE	MEDIUM	FINE		
152	76.2	19.1	4.76	2.0	0.42	0.075		0.002

GRAIN SIZE IN MM

— DELAYED GROUNDWATER LVL
— LEVEL GROUNDWATER ENCOUNTERED