GEOTECHNICAL INVESTIGATION

PROPOSED BUILDING AND POND

LOUISIANA HIGHWAY 3125

GALLIANO, LOUISIANA

TBG PROJECT NO. 3906G

Prepared for:

MCMATH CONSTRUCTION.

MANDEVILLE, LOUISIANA

TheBetaGroup
engineering and construction services

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September 22, 2014

McMath Construction
1125 N. Causeway Blvd., Ste. 2
Mandeville, La. 70471

Attn: Mr. Andrew McIver

Reference: Report of Geotechnical Investigation
Proposed RV Building and Pond
La. Hwy 3235
Galliano, LA.
TBG Report No. 3906G

Dear Mr. McIver:

The Beta Group, LLC (TBG) has performed a Geotechnical Investigation for the above referenced site in Chalmette, Louisiana as outlined in our geotechnical proposal dated July 29, 2014. The attached report presents our understanding of the project, reviews our exploration procedures, describes existing site and general subsurface conditions, and presents our evaluations and recommendations.

We have enjoyed working with you on this project and look forward to assisting you during the continuing design and construction activities. Please contact us at anytime if you have any questions regarding this report or need further service.

Sincerely,
THE BETA GROUP, LLC

STATE OF LOUISIANA
Alexander Jaramillo
License No 36324
PROFESSIONAL ENGINEER
IN
CIVIL ENGINEERING

Alex Jaramillo, P.E.
Senior Project Engineer

Mark A. Cheek, P.E., FACI
Vice President

TABLE OF CONTENTS

PURPOSE AND SCOPE OF SERVICES

PURPOSE OF SERVICES

The purpose of the Geotechnical Investigation was to explore the subsurface conditions at the site and to provide geotechnical design recommendations for the proposed Building and Pond, site preparation, earthwork and quality control measures related to these design aspects.

SCOPE OF SERVICES

To accomplish the stated purpose, we executed the following:

1. Documented existing surface conditions and features at the project site and the marked boring location.

2. Performed a subsurface exploration consisting of one (1) undisturbed soil test boring to a depth of 50 feet below the existing ground surface in an area adjacent to the existing parking lot.

3. Performed laboratory testing on selected soil samples to ascertain soil properties for engineering purposes.

4. Evaluated the findings of the subsurface exploration and laboratory data relative to general subsurface characterization, support, and other geotechnical aspects of the project.

Our scope of services did not include a survey of the boring location and elevation, quantity estimates, preparation of plans or specifications, or the identification and evaluation of environmental aspects of the project site.

PROPOSED PROJECT DESCRIPTION

The project site is located at 16816 La. Hwy 3235 in the rear of Pelican Truck Plaza in Galliano, Louisiana. The proposed Building will be approximately 3,000 sq. ft. in plan dimension and will incorporate a maximum of 3 ft. of fill to raise the site grade elevation. Also, a 1.25 acre pond will be constructed at the rear of the property.

SUBSURFACE EXPLORATION

FIELD EXPLORATION

The subsurface exploration consisted of one (1) undisturbed soil test boring (designated as B-1) performed on August 12, 2014 at the referenced site at the approximate location shown on the attached Boring Location Plan (Figure No. 1).

The soil test boring location was located in the field by a TBG representative. The boring location was plotted and topographical information was estimated. The methods used in the determination of the boring location shown on the Boring Location Plan should be considered approximate.

The soil test boring was drilled utilizing a truck mounted drill rig at the designated location shown on the Boring Location Plan. Undisturbed sampling was performed continuously in the upper 10 feet and on 5 ft. centers thereafter, with a 3-inch diameter thin-walled tube sampler. Representative samples were removed from the tubes and placed in moisture-proof containers for laboratory testing.

The soil test boring was advanced through the soil overburden to the assigned termination depth of 50 feet below the existing ground surface.

Subsurface water level readings were obtained at the soil test boring immediately upon completion of the drilling process and after a period of 10 minutes. Upon completion of the drilling activities, the borehole was backfilled with auger cuttings (soil) and/or high-strength concrete as per LADOTD requirements.

LABORATORY TESTING

Laboratory tests were conducted on selected samples in general accordance with ASTM standards. The laboratory testing performed for this project consisted of:

- Atterberg Limits
- Moisture Contents
- Unconfined Compression Tests
- Unit Weight Determination
- Natural Moisture Content

- Percent Passing the No. 200 Sieve

The test results are summarized on the individual Boring Log in the Appendix of this report.

SITE AND SUBSURFACE CONDITIONS

SITE CONDITIONS

TBG performed reconnaissance of the site on August 8, 2014. The site is located at 16816 La Hwy 3235 in Galliano, Louisiana. The boring was completed in a grassy covered area adjacent to the existing parking lot of Pelican Truck Plaza. The boring was completed in an area where the drilling equipment could access.

SUBSURFACE CONDITIONS

Boring B-1: Reference to the log of boring B-1 shows that beginning at the ground surface there is 4 ft. of medium stiff brown clay followed by medium stiff brown organic clay to the 6 ft. depth. This is underlain by very soft to soft gray clay to at least the boring's termination depth of 50 ft.

Groundwater Conditions

At the time of making the boring, subsurface water was encountered at the 6 ft. depth below the existing ground surface. After a 10 minute wait period, groundwater was measured at about the 4 ft. depth. It should be noted that groundwater levels tend to fluctuate with seasonal and climatic changes, as well as with some types of construction operations. As such, groundwater levels at other times of the year may be different than those described in this report. These observations were made while completing the borings and may not have become fully static at the time of measurement. If groundwater is important to construction, it should be measured at that time.

ENGINEERING EVALUATION & RECOMMENDATIONS

The following evaluations and recommendations are based on our observations at the site, interpretation of the field and soil laboratory data obtained during this exploration, and our experience with similar subsurface conditions and projects. Subsurface conditions in unexplored locations may vary from those encountered. If the project location changes, we request that we be advised so that we may re-evaluate our recommendations. Design

recommendations for the proposed Building for the given location are dependent on the soil and site conditions. The subsurface exploration aids the geotechnical engineer in determining the necessary geotechnical recommendations needed. In addition, since the method of construction greatly affects the soils intended for the proposed Building, consideration must be given to the implementation of suitable construction methods of site preparation, and other aspects of construction. Based on our analysis, it is our opinion that the proposed site is suitable for the planned construction.

DEEP FOUNDATION

The subsoils below the proposed Building are predominantly clay soils that appear to be poor in bearing quality and are not believed capable of supporting the proposed facility on shallow foundations. Due to these conditions, it is recommended that the proposed Building be supported on a deep foundation system that includes timber piles. Also, the recommendations provided in this report for deep foundations are based on grading fill not exceeding a height of approximately 3 feet above existing grade. This office should be contacted to determine the additional settlement should more than approximately 3 ft. of fill will be placed at the site.

Analyses were made based on the boring and laboratory test data to develop geotechnical related parameters for use in design of the foundations. These include an evaluation of pile capacities for a 6-inch diameter tip and a 7-inch diameter tip timber piles (ASTM D 25), and estimates of settlement. Results of these analyses are given in the following sections. Allowable pile load capacities for driven treated ASTM D 25 quality timber piles are provided in the following table. The allowable pile capacities assume the piles are vertical and do not include the weight of the pile. In addition, the pile tip depths are referenced from top of the imported fill but include a soil cutoff depth of approximately 2 feet. The piles will receive their support through "skin friction" along their embedment length since there is no soil stratum that will provide any additional end bearing support.

ALLOWABLE PILE LOAD CAPACITIES
TREATED ASTM D 25 QUALITY TIMBER PILES

SIZE OF TREATED ASTM D 25 QUALITY TIMBER PILE	PILE TIP EMBEDMENT BELOW EXISTING GROUND SURFACE IN FEET	ESTIMATED ALLOWABLE SINGLE PILE LOAD CAPACITIES IN TONS COMPRESSION FACTOR OF SAFETY = 2 TENSION FACTOR OF SAFETY = 3	
		COMPRESSION	TENSION
6-In. Dia. Tip and 8-In. Dia Butt	20 25 30 35 40	3 4 5 6 7	2 2½ 3 4 4½
7-In. Dia. Tip and 12-In. Dia Butt	30 35 40 45 50	7 8 9 10 11	4½ 5 6 6½ 7

The provided compression capacities contain an estimated factor of safety of two (2) against failure of a single pile through the soil. The provided tension capacities contain an estimated factor of safety of three (3) against failure of a pile through soil. The analyses for pile capacities are based on a soil-pile relationship only. The structural capacities of the piles and their connections to transmit these loads should be determined by a structural engineer.

Estimated Settlement of Pile Foundations

No detailed settlement analyses were made since the design structural loads, pile length, pile layout, etc. are not known at this time. However, settlement of the pile supported structure using the recommended pile load capacities in single widely spaced rows or in clusters of up to 4 to 6 piles are estimated to be on the order of ½ to 1 inch. Settlements will increase with the size of the pile cluster and, if larger clusters of closely spaced piles are needed for support, detailed settlement analyses should be made. Our estimates do not include the elastic deformation of the piles, which should be added to the settlement estimates. Elastic deformation of the piles may be estimated at 67% of the static column strain of a pile acting as a column. It is

recommended that all of the piles be the same type of pile driven to the same tip penetration. This is important to minimize the potential for differential settlements. In any case, consideration should be given to these estimated movements at sensitive locations. In the event any of our assumptions are not valid, TBG should be contacted to evaluate the potential effects on settlement of pile foundations.

Pile Driving

Driving of timber piles having a 6 inch diameter tip and an 8 inch diameter butt should be limited to the rate of 10 to 12 blows per foot using a maximum of 5,000 to 7,500 ft-lbs of energy. Driving of timber piles having a 7 inch diameter tip and a 12 inch diameter butt should be limited to the rate of 25 blows per foot also using a maximum of 12,000 to 15,000 ft-lbs of energy. These recommendations are given in order to minimize possible damage to the piles.

It is important that logging of piles be performed during pile driving operations by a qualified soil technician so as to detect unexpected conditions indicated by the driving resistance (hammer blows per foot) as well as any potential problems with breakage or driving difficulties.

Drag Load

When fill is placed on the site, the underlying compressible soils consolidate, resulting in surface settlement. As the compressible soils consolidate, "negative skin friction" or downdrag may be imparted on piles. This could result in an extraneous load, additive to any structural load, on the piles and could increase settlement of the structure. It is our opinion that drag load is dependent on the fill thickness, compressibility of the soils, time-rate of consolidation and pile length.

In order to minimize the effects of drag load, it is recommended that a minimum pile length of 40 ft. (below the natural ground surface) be used if the fill thickness needed to raise the site grade in the area of the structure is limited to 2 to 3 ft. If the fill thickness is between 3 and 4 ft., then a minimum pile length of 50 ft. (below the natural ground surface) is recommended for design. If the fill thickness is between 4 and 5 ft., then a minimum pile length of 60 ft. (below the natural ground surface) is recommended for design. If more than 5 ft. of fill is needed, further consideration should be given to drag load.

While the foregoing pile lengths would not totally eliminate settlements due to drag load, they should limit them to tolerable values. It is also recommended that all fill needed to raise the site grade be placed as soon as practical. In general, limiting the total amount of fill needed to raise the site grade would also minimize drag load effects on piles. It is also recommended to strengthen the structure foundation above normal design to increase its rigidity and ability to withstand the estimated settlements. While this would not reduce settlements with regard to drag load, it should minimize any detrimental effects due to differential settlements.

Fill Settlement

It should be recognized that fill settlement will probably occur due to the load imposed by the fill that will be used to raise the site grade. These settlements should be considered in design, particularly where unsupported appurtenances (driveways, walkways, paved areas, etc.) adjoin the pile supported structure. At these vulnerable locations, it may be desirable to structurally tie such unsupported elements into the pile supported structure to minimize abrupt differential settlements. Also, the effect of fill settlement should be considered in design where utilities lines connect to, and underlie, the pile supported structure. Results of these analyses are given in the following table.

FILL THICKNESS (FT.)	ESTIMATED AREAL SETTLEMENT (INCHES)
2	2 to 3
3	3 to 4

The estimated settlements given above are based on a uniform fill thickness over a large area and a unit weight of fill of about 110 lbs. per cubic ft. These estimates are ultimate values due to fill loads and should be added to settlements due to structural loads. Additional settlements could also occur due to lowering of groundwater with improved drainage. The estimated areal settlements are total consolidation settlements and will take a long time to completely occur. Detailed soil properties to determine time-rate of settlement were not developed. However, it is estimated that about 30 to 40 percent may occur within the first 1 to 2 years after fill placement. The remaining 60 to 70 percent would take a long time to completely occur and on the order of 20 to 30 years. In any event, the fill should be placed as soon as possible to induce some of the settlement due to fill load.

Group Effect

The effect of pile grouping on the single pile load capacities is dependent on pile spacing, pile length and soil characteristics throughout the pile length and below the pile tips. Assuming a minimum center to center spacing of 3 ft., group effect should be unimportant for pile clusters of up to 6 piles. Group effect could become important for larger clusters and should be evaluated when actual pile layouts are known.

Minimum Pile Spacing

$$SPAC = 0.05\ L_1 + 0.025\ L_2 + 0.0125\ L_3$$

SPAC(ft.) = Center to center spacing of piles = (Min. 3.0 ft.)
L_1 = Pile penetration in ft. up to 100 ft.
L_2 = Pile penetration in ft. from 101 to 200 ft.
L_3 = Pile penetration in ft. from 201 to 300 ft.

Allowable Group Capacity*

$$Q_a = \frac{P \times L \times c}{FSF} + \frac{2.6 \times q_u \times (1 + 0.2\ {}^{w}/_{b}) \times A}{FSB}$$

P = Perimeter distance of pile group (ft.)
L = Length of pile (ft.)
c = Average (weighted) shear strength (½ q_u) of soil throughout pile length (lbs./sq. ft.)
q_u = Unconfined compressive strength of soils below pile tips (lbs./sq.ft.)
w = Width of base of pile group (ft.)
b = Length of base of pile group (ft.)
A = Base area of pile group (sq. ft.)
FSF = Factor of safety for friction area = 2
FSB = Factor of safety for base area = 3

*In no case should the recommended single pile load capacity be exceeded.

Vibration Monitoring

Pile driving operations will cause vibrations that may affect nearby structures, pavement or utilities. Pile driving operations should be monitored at any structure of concern during the driving of the job piles to record the magnitude of vibrations. Sustained peak particle velocities of 0.5 inches per second measured at a structure may induce damage to the structure.

Therefore, for sustained peak particle velocities in excess of 0.5 inches per second pile driving operations should be terminated and consideration given to altering the pile installation criteria.

EARTHWORK CONSIDERATIONS

At a minimum, the site will require earthwork associated with grading and preparation for the new structure. The following paragraphs provide pertinent recommendations associated with potential earthwork activities.

Site Preparation

Significant site preparation problems will develop unless good drainage is provided throughout the project duration. In order to prepare the building area for fill, the site should first be stripped of all vegetation; soft or loose surface soils, deleterious material, etc.

Proper site drainage should be maintained during and after construction to divert the flow of surface waters from the area of the structure foundation. Providing drainage during the construction process will facilitate construction by reducing the potential for volumetric change in the near surface soils. In this regard, good roof and surface drainage should be assured with positive collection and runoff of these waters.

Maintaining drainage after construction will improve the life of the structure by avoiding water softening of the foundation soils. Also, a distance of at least one-half (1/2) the expected height of fully-grown trees should be maintained between any trees and the structure foundation.

Fill Materials

Subsequent to the site preparation activities, the area should be brought to grade using a clean, select fill material free from debris or organic matter. A cohesionless soil described as clean sand or pumped "river" sand with less than 10% passing the U.S. No. 200 Sieve and less than 60% passing the U.S. No. 60 Sieve should be used as fill.

Fill Placement and Compaction

Cohensionless fill should be placed in 10 to 12 inch loose lifts. This fill should be compacted to a dry density equal to at least 95% of its maximum as determined by the Standard Proctor compaction test (ASTM D 698A).

POND RECOMMENDATIONS

The organic clays present from the approximate 4 to 6 foot depths are not adequate fill material to construct the embankment of the new Pond. The other clays to from the 2 ft. to 4 ft. depth and 6 ft. to 50 ft. depth is a CL or CH material, as classified by the Unified Soil Classification System (USCS) and should be adequate for embankment material to construct the side slopes of the pond. Inspection of the pond excavations by a qualified geotechnical engineer should be performed during construction to assist in evaluating the soils present on the side slopes of the ponds. In addition, a test pit may be useful in determining the soils' ability to hold water.

CLASSIFICATION TESTS

In order to classify the soils more definitively than can be done by visual methods, two (2) Atterberg limits, thirteen (13) moisture content determinations were made. The results of these tests are shown on the boring log.

Quality Control

The use of the correct fill materials and the proper placement and compaction are critical in any earthwork where subsequent construction of the Building and Pond is planned. Construction monitoring by a qualified geotechnical engineer or technician is recommended to document that proper fill construction has been accomplished.

The responsibilities of the quality control representative generally include observation of excavations, proof rolling operations, documentation of material types, and fill placement and compaction techniques. The geotechnical engineer or technician should make sure the fill is the proper material type, and is placed in the correct manner. Any deviation from the design should be reported to the design engineer.

CONSTRUCTION QUALITY CONTROL

The Geotechnical Engineer of record should be retained to monitor and test earthwork activities, pile driving activities, subgrade preparations, as well as any additional construction activities. We recommend that TBG be employed to monitor the earthwork construction, and to report that the recommendations contained in this report are completed in a satisfactory manner. Our

continued involvement on the project will aid in the proper implementation of the recommendations discussed herein. The following is a recommended scope of services:

- Review of project plans and construction specifications to verify that the recommendations presented in this report have been properly interpreted and implemented.
- Observe the earthwork process to document that subsurface conditions encountered during construction are consistent with the conditions anticipated in this report.
- Observe the subgrade conditions before placing structural materials.
- Observe the placement and compaction of all structural materials, and perform laboratory and field compaction testing.

CONSULTATION

TBG offers various construction material testing services such as non-destructive testing, plastic concrete testing, welding and coating inspection, pile logging, vibration monitoring, pile load tests, subgrade preparation testing, as well as other testing services. At your request, TBG would be pleased to discuss these services with you at your convenience.

LIMITATIONS

This report has been prepared for the exclusive use of McMath Construction, Inc., and their assigns for specific application to the referenced property in accordance with generally accepted geotechnical engineering practices.

No other warranty, expressed or implied, is made. These recommendations do not reflect variations in subsurface conditions that may be intermediate of the boring locations or in unexplored areas of the site. Should such variations become apparent during construction, we reserve the right to re-evaluate our recommendations based upon on-site observations of the conditions.

In the event changes are made in the proposed construction plans, the recommendations presented in this report shall not be considered valid unless reviewed by our firm and modified or verified in writing.

Appendix

BORING LOCATION PLAN ● **BORING LOCATION** | **North** ▲

THE BETA GROUP, LLC.
1428½ Claire Ave, Gretna, Louisiana, 70053
504-227-2273 fax: 504-227-2274
Betagroupgc.com

Client:	McMath Construction
Project:	Proposed Building and Pond
Location:	Galliano (S. Lafourche Parish), LA
TBG Project No:	3906G
Date:	9/23/14
	Scale: Not To Scale — Figure 1

Proposed Building and Pond
Galliano (S. Lafourche Parish),
Louisiana

LOG OF SOIL BORING B-1

TheBetaGroup
engineering and construction services

Sheet 1 of 1

File: 3906G
Date: 8/12/14
Logged by: B. Kempton
Driller: E.J. Laizer
Rig: Truck

McMath Construction
Mandeville, La. 70471

Location: Lat. 29° 28' 4.17"
Long. 90° 19' 36.58"
Surface Elevation:

Ground Water Level	Depth (feet)	Samples	Field Test Results	Compressive Strength (tsf)	Water Content (%)	Wet Unit Weight (pcf)	Atterberg Limits LL	Atterberg Limits PL	Atterberg Limits PI	Percent Passing #200 Sieve	Organic Content	Soil Type	Description
			3.25 (P)	0.89	29	116							Medium stiff brown CLAY (CH) w/ organics
▽			1.5 (P)	0.72	47	102	84	16	68				
▽	5		1.75 (P)	0.52	107	87							Medium stiff brown ORGANIC CLAY (OH)
			1.0 (P)	0.40	31	127				60			Soft gray SANDY CLAY (CL)
	10		1.0 (P)	0.35	27	130							
			0.5 (P)	0.19	43	112	53	15	38				Very soft to soft gray CLAY (CH) w/ sand
	15												
			0.5 (P)	0.26	75	98							
	20												Soft gray CLAY (CH) w/ silt seams
			0.5 (P)		56								
	25												
			0.5 (P)	0.29	69	100							
	30												
			0.75 (P)		65								
	35												
			0.5 (P)	0.28	42	113							
	40												
			0.5 (P)		55								
	45												
			0.5 (P)	0.45	55	106							
	50												Boring completed at 50 ft.

Ground Water Level Data

▽ Free water first encountered

▽ Water level after 10 mins.

Boring Advancement Method

4" Nom. Dia. Short Flight Auger:
0 to 10 ft.
4" Dia. Rotary Wash:
10 to 50 ft.

Boring Abandonment Method

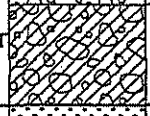
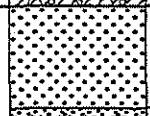
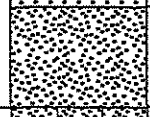
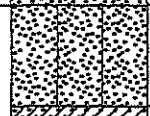
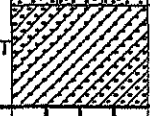
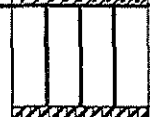
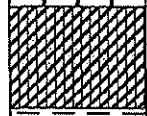
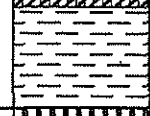
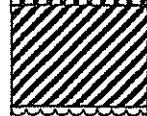
Tremie grout with cement/ bentonite

Notes

Strata Boundaries May Not Be Exact

ARD LOG01 01R 3906G.GPJ LOG01R.GDT 8/19/14

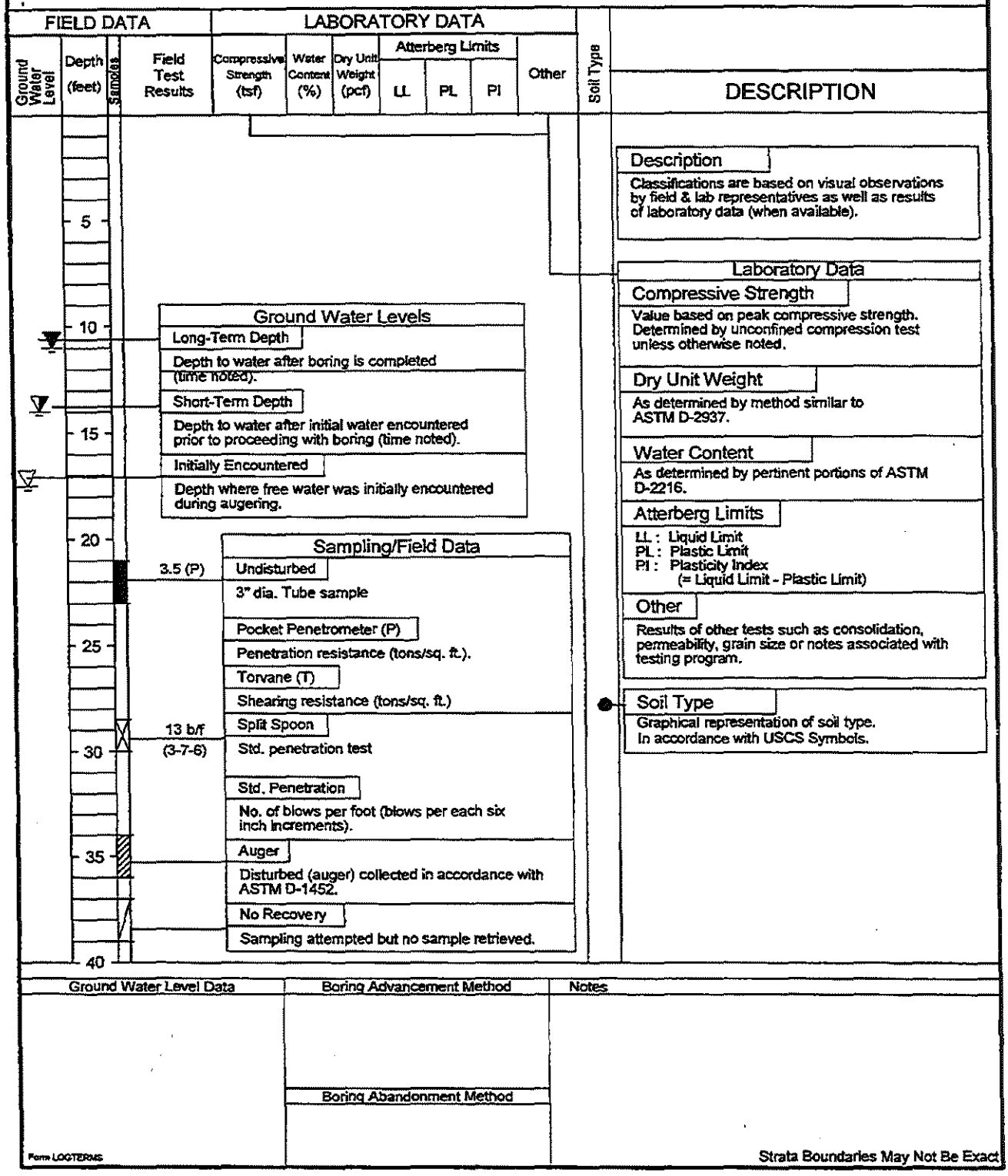
SOIL CLASSIFICATION CHART

MAJOR DIVISIONS			SYMBOLS		TYPICAL DESCRIPTIONS
			GRAPH	LETTER	
COARSE GRAINED SOILS	GRAVEL AND GRAVELLY SOILS	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
	MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES)		GM	SILTY GRAVELS, GRAVEL - SAND - SILT MIXTURES
				GC	CLAYEY GRAVELS, GRAVEL - SAND - CLAY MIXTURES
MORE THAN 50% OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	SAND AND SANDY SOILS	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
	MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)		SM	SILTY SANDS, SAND - SILT MIXTURES
				SC	CLAYEY SANDS, SAND - CLAY MIXTURES
FINE GRAINED SOILS	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
MORE THAN 50% OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	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

USCS_LEGEND 7/13/11

NOTE: DUAL SYMBOLS ARE USED TO INDICATE BORDERLINE SOIL CLASSIFICATIONS

DESCRIPTION OF TERMS AND SYMBOLS USED ON SOIL BORING LOG



Ground Water Level Data	Boring Advancement Method	Notes
	Boring Abandonment Method	

Form LOGTERMS

Strata Boundaries May Not Be Exact