Dave Rambaran GEOSCIENCES, LLC
P.O. Box 8812 •Shreveport, LA 71148•Ph: (318) 780-8292/ DaveRambaran@DRGeosciences.com

May 30, 2016

PPT Inc.
1040 Hawn Ave.
Shreveport, LA 71107

Attn: Mr. Paul Pattridge

Re: Geotechnical Boring Log
Team C Construction Maple Leaf Drive Desoto Parish LA
Project Number 16062

Dear Mr. Pattridge:

As requested in Dave Rambaran Geosciences, LLC (DRGeo) have performed 3 pavement boring to provide a geotechnical boring log for the above referenced site. No other services were requested or performed.

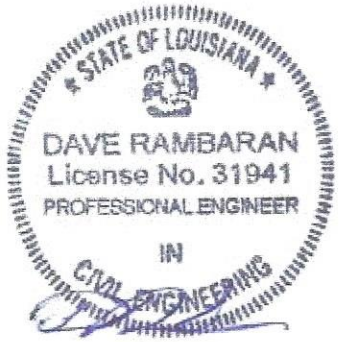
Project Description: The project is expected to consist of the construction of a pavement at the above described location. Some organics were encountered and the area should be checked for buried wood.

Conclusion: The tests results presented are contained in attached boring logs. It is always possible that variations can occur between or away from test locations. The actual subsurface conditions should be confirmed during site grading and foundation installation.

It should be noted that the provision of specific or general engineering recommendations for individual or general residential structures is not part of the scope of our services and is beyond the scope of this boring log. Only a boring logs with soil classification have been provided no other services. It is expected that close inspection of the foundation excavations by the engineer's representative will be performed to confirm the validity of this boring log. It is also expected that additional soil borings and laboratory testing shall be performed if necessary, based on the results of the inspections. It should also be noted that the provision of designs or drawings is beyond the scope of the proposed services. It is expected that the client's civil/structural engineer or architect will be utilizing the information provided for the post tension foundation design. Construction Inspection Services (e.g., earthwork and concrete testing), shall be performed and DRGeo shall be retained to assist the contractor with the soils related aspects of this project and to ensure that the soils encountered are not drastically different form the provided boring logs.

The scope of 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. This report is structured to meet the specific needs of our client (PPT) and only our client should rely on this report. We appreciate the opportunity to perform this limited subsurface investigation. If you have any questions pertaining to this letter, or if we may be of further service, please contact us.

Respectfully submitted,
Dave Rambaran Geosciences, LLC



5.3.16

Dave Rambaran, P.E.

N

Source: Site Map provided by Client.

Estimated Boring Location -----

Dave Rambaran GEOSCIENCES, LLC

Team C Construction
Maple Leaf Drive
Desoto Parish LA

Scale: NTS

Project No: DRGeo 16062

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BORING NUMBER B-2

CLIENT PPT Inc.
PROJECT NUMBER DRG16062
DATE STARTED 5/11/16 **COMPLETED** 5/11/16
DRILLING CONTRACTOR Dave Rambaran Geosciences, LLC
DRILLING METHOD Auger Boring
LOGGED BY RS **CHECKED BY** DRR
NOTES

PROJECT NAME Team C Construction Maple Leaf Drive Desoto Parish LA Soil
PROJECT LOCATION Desoto Parish, LA
GROUND ELEVATION **HOLE SIZE** 4 inches
GROUND WATER LEVELS:
AT TIME OF DRILLING — None Encountered
AT END OF DRILLING —
AFTER DRILLING —

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	TORVANE Su (psf)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	% CL	% ML	ATTERBERG LIMITS LIQUID LIMIT	ATTERBERG LIMITS PLASTICITY INDEX	FINES CONTENT (%)
0.0		6 inches of top soil											
		Clay (CL); Stiff, Tan with Sand	AU 1	1671	2-2-2 (4)			15	45	35			
		VERY STIFF	AU 2	2088	2-3-3 (6)			21					93
2.5		HARD	AU 3	5430	9-9-10 (19)		106	11			39	19	
5.0		Bottom of borehole at 5.5 feet.											

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BORING NUMBER B-1

CLIENT PPT Inc.
PROJECT NAME Team C Construction Maple Leaf Drive Desoto Parish LA Soil
PROJECT NUMBER DRG16062
PROJECT LOCATION Desoto Parish, LA
DATE STARTED 5/11/16 **COMPLETED** 5/11/16
GROUND ELEVATION _____ **HOLE SIZE** 4 inches
DRILLING CONTRACTOR Dave Rambaran Geosciences, LLC
GROUND WATER LEVELS:
DRILLING METHOD Auger Boring
AT TIME OF DRILLING --- None Encountered
LOGGED BY RS **CHECKED BY** DRR
AT END OF DRILLING ---
NOTES _____
AFTER DRILLING ---

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	TORVANE Su (psf)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	% CL	% ML	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0.0		3 inches of top soil											
		Clay (CL); Firm, Red with Sand	AU 1	752	2-2-2 (4)	needs to be 9-15	80	18			33	15	
2.5		STIFF with some Organics	AU 2	2005	2-2-4 (6)			23	55	40			
5.0		STIFF	AU 3	1838	2-2-2 (4)		85	20	50	30			81

Bottom of borehole at 5.5 feet.

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BORING NUMBER B-3

CLIENT PPT Inc.
PROJECT NUMBER DRG16062
DATE STARTED 5/11/16 **COMPLETED** 5/11/16
DRILLING CONTRACTOR Dave Rambaran Geosciences, LLC
DRILLING METHOD Auger Boring
LOGGED BY RS **CHECKED BY** DRR
NOTES

PROJECT NAME Team C Construction Maple Leaf Drive Desoto Parish LA Soil
PROJECT LOCATION Desoto Parish, LA
GROUND ELEVATION **HOLE SIZE** 4 inches
GROUND WATER LEVELS:
AT TIME OF DRILLING --- None Encountered
AT END OF DRILLING ---
AFTER DRILLING ---

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	TORVANE Su (psf)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	% CL	% ML	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0.0		3 inches of top soil											
		Clay (CL); Firm, Red with Sand	AU 1	668	2-2-2 (4)			18					80
		VERY STIFF	AU 2	3342	4-6-6 (12)			17			28	10	
2.5													
		HARD	AU 3	5430	6-9-9 (18)			14	65	15			
5.0													

Bottom of borehole at 5.5 feet.

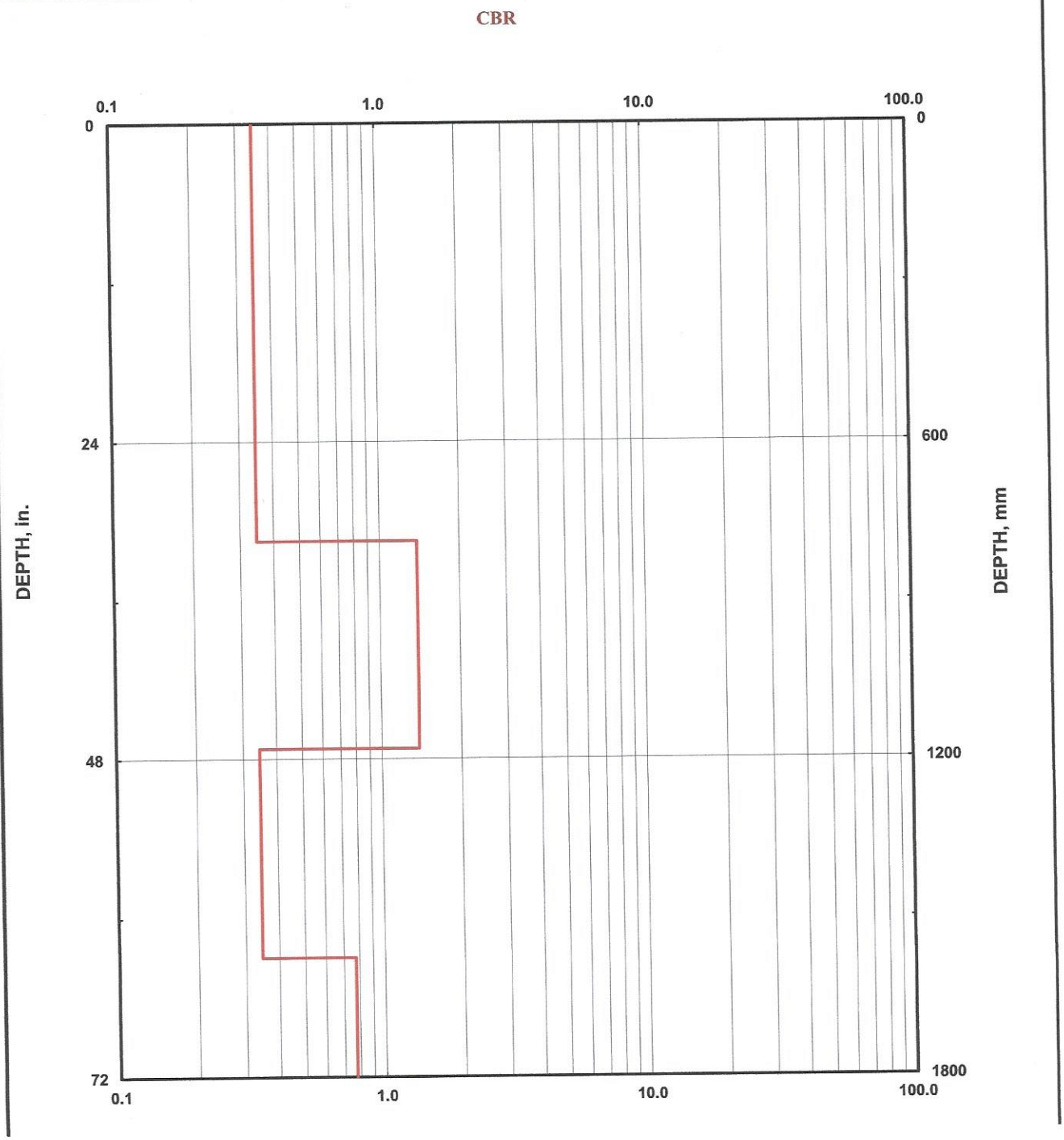
DCP TEST DATA B-1

Project: Maple Leaf Drive
Location: Desoto Parish, LA

Date: 12-May-16
Soil Type(s): Clay & Silt

Hammer
- ○ 10.1 lbs.
- ◉ 17.6 lbs.
- ○ Both hammers used

Soil Type
- ○ CH
- ◉ CL
- ○ All other soils



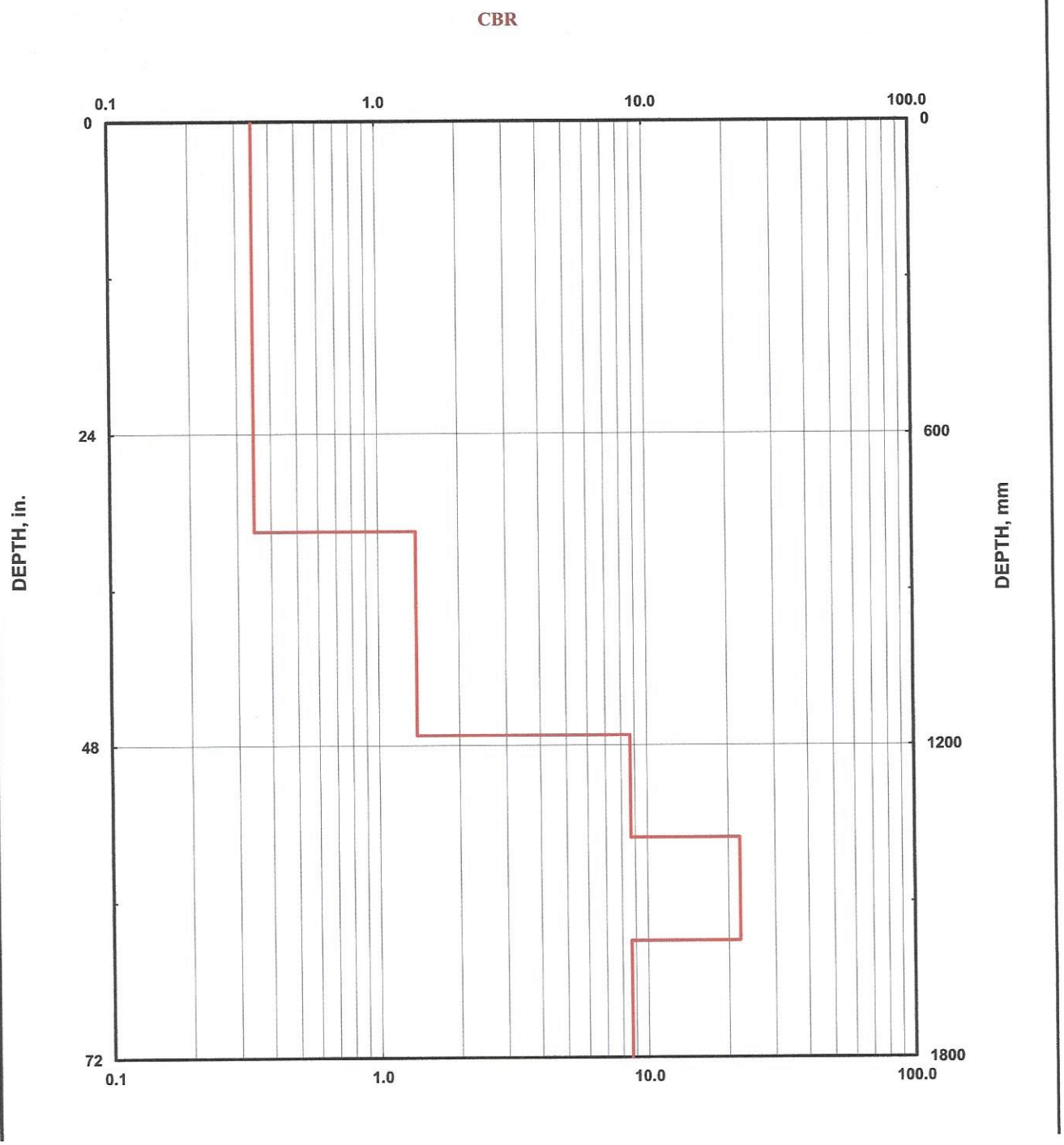
DCP TEST DATA B-2

Project: Maple Leaf Drive
Location: Desoto Parish, LA

Date: 12-May-16
Soil Type(s): Clay & Silt

Hammer
- ○ 10.1 lbs.
- ◉ 17.6 lbs.
- ○ Both hammers used

Soil Type
- ○ CH
- ◉ CL
- ○ All other soils



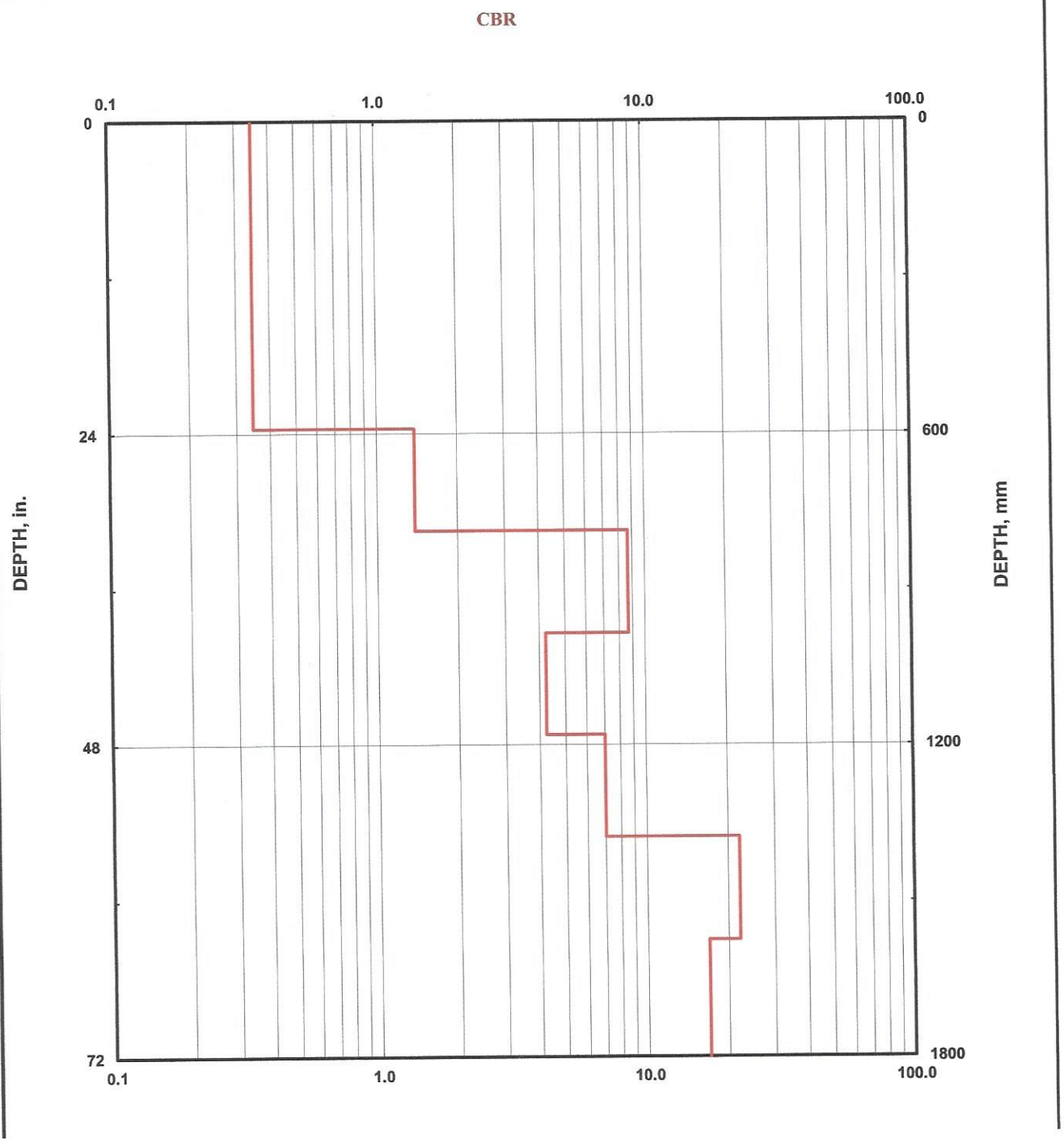
DCP TEST DATA B-3

Project: Maple Leaf Drive
Location: Desoto Parish, LA

Date: 12-May-16
Soil Type(s): Clay & Silt

Hammer
- ○ 10.1 lbs.
- ◉ 17.6 lbs.
- ○ Both hammers used

Soil Type
- ○ CH
- ◉ CL
- ○ All other soils



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INDEX PROPERTIES VERSUS DEPTH

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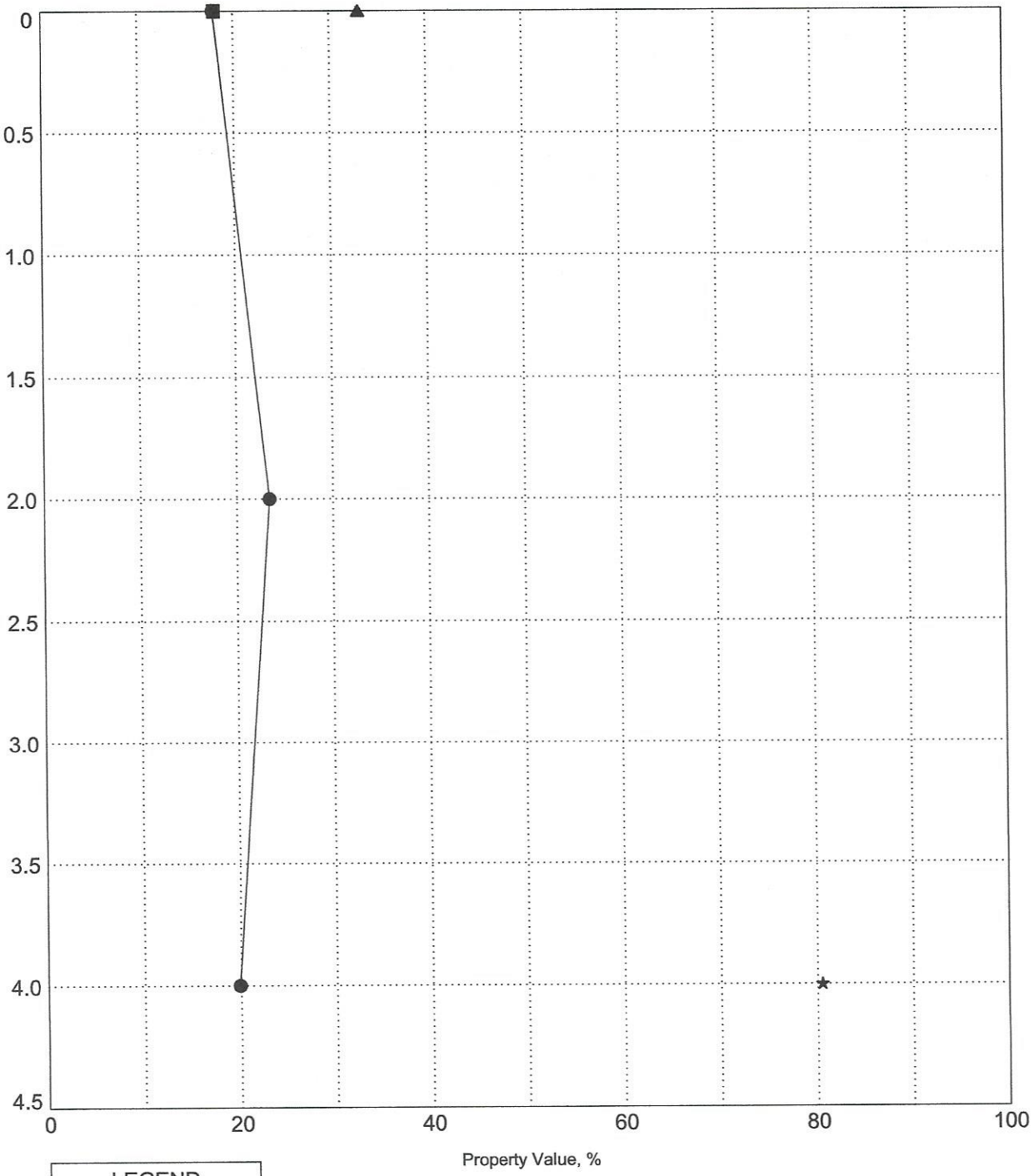
PROJECT NUMBER DRG16062

PROJECT LOCATION Desoto Parish, LA

BORING B-1



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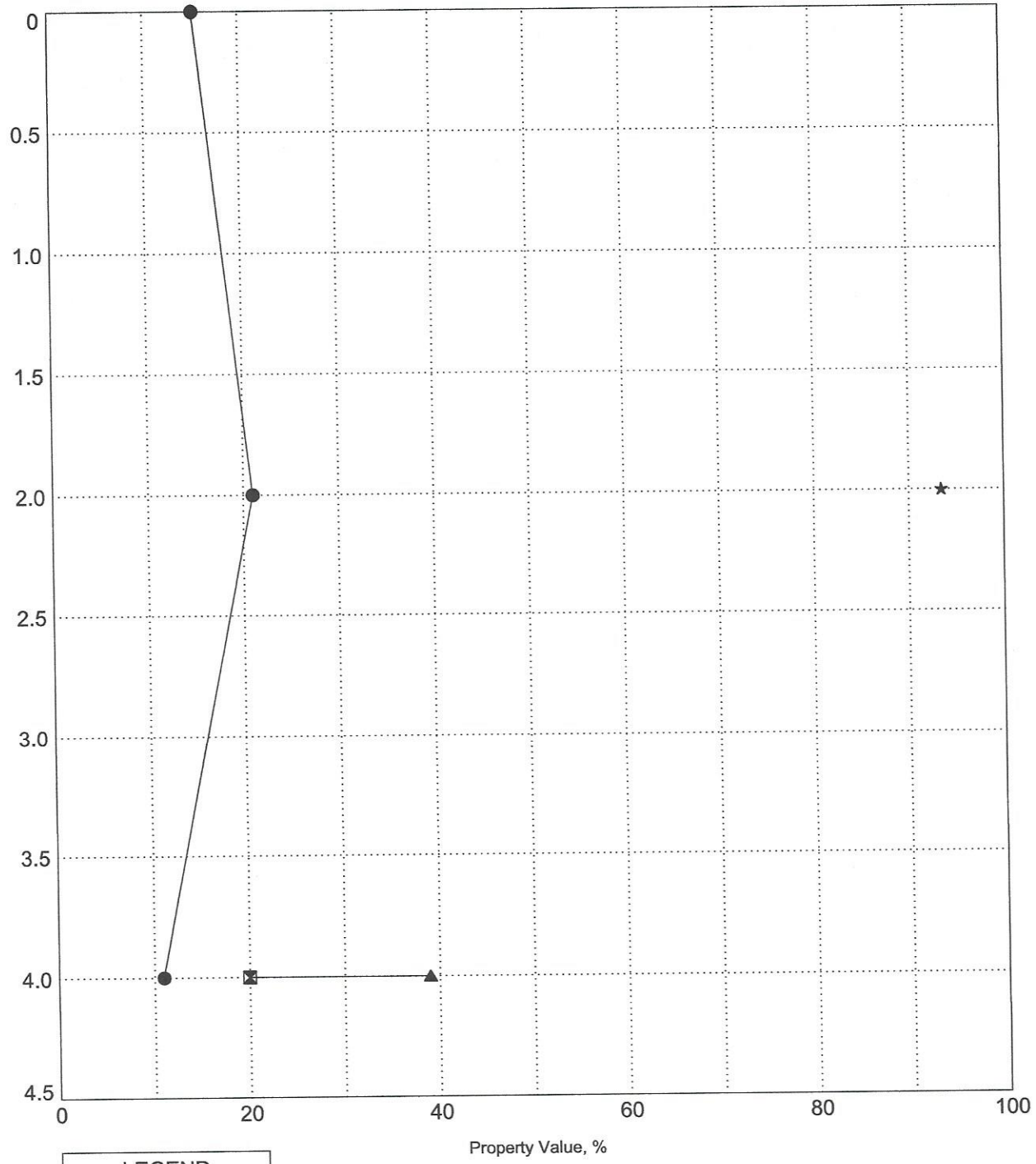
PROJECT LOCATION Desoto Parish, LA

BORING B-2



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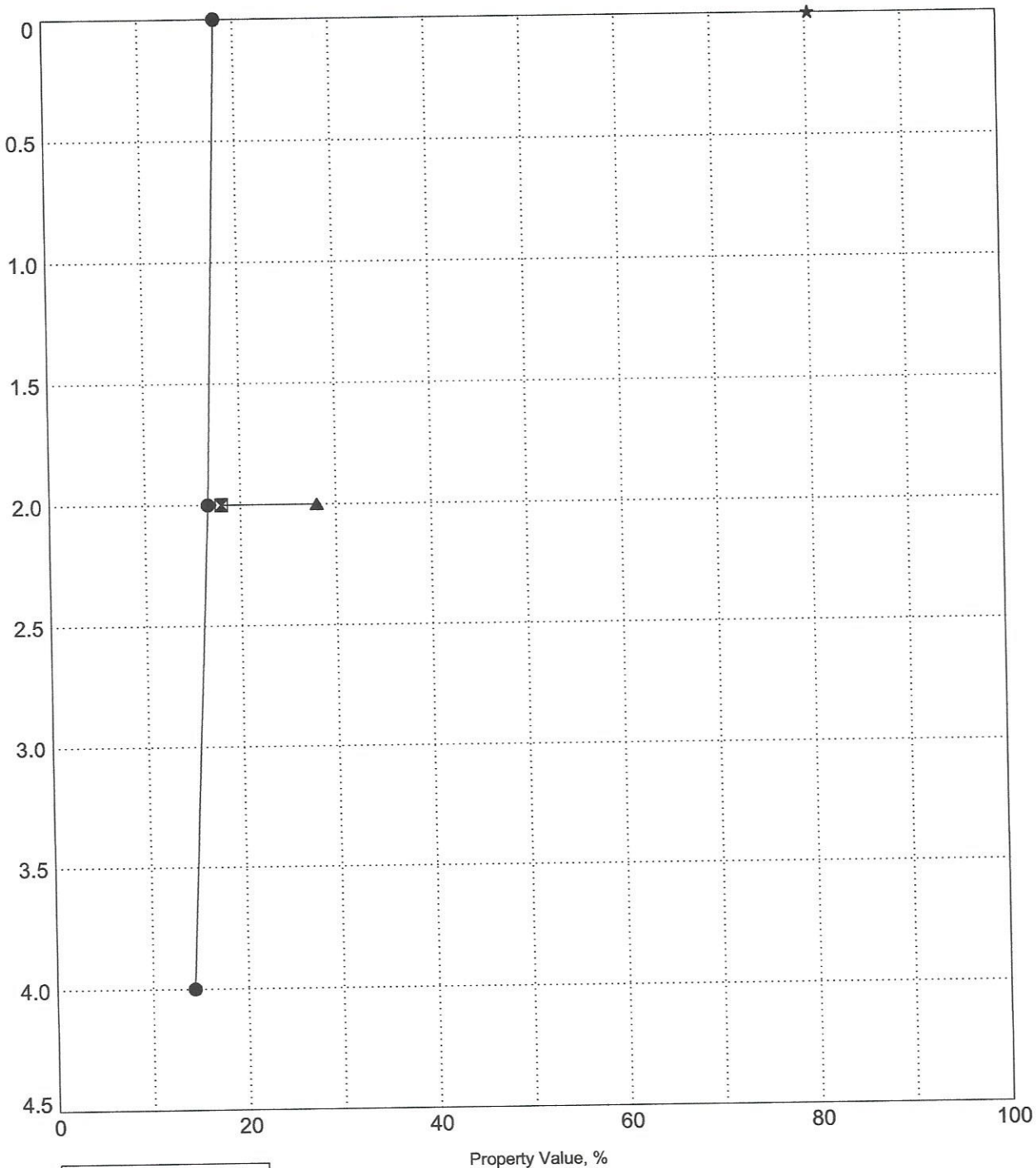
BORING B-3



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KEY TO SYMBOLS

CLIENT PPT Inc.

PROJECT NAME Team C Construction Maple Leaf Drive Desoto Parish LA Soil Bc

PROJECT NUMBER DRG16062

PROJECT LOCATION Desoto Parish, LA

LITHOLOGIC SYMBOLS
(Unified Soil Classification System)

CL: USCS Low Plasticity Clay

TOPSOIL: Topsoil

SAMPLER SYMBOLS

Auger Cuttings

WELL CONSTRUCTION SYMBOLS

ABBREVIATIONS

LL - LIQUID LIMIT (%)
PI - PLASTIC INDEX (%)
W - MOISTURE CONTENT (%)
DD - DRY DENSITY (PCF)
NP - NON PLASTIC
-200 - PERCENT PASSING NO. 200 SIEVE
PP - POCKET PENETROMETER (TSF)

TV - TORVANE
PID - PHOTOIONIZATION DETECTOR
UC - UNCONFINED COMPRESSION
ppm - PARTS PER MILLION

▽ Water Level at Time Drilling, or as Shown

▼ Water Level at End of Drilling, or as Shown

▼ Water Level After 24 Hours, or as Shown

LABORATORY ANALYSIS

After the soil samples are visually classified, specific samples are selected by the geotechnical engineer for laboratory analysis. The laboratory analysis may consisted of moisture profiles of the natural moisture content, #200 washes, and Atterberg limits tests determinations. The results of the laboratory analysis are presented on the boring logs in the Appendix of this report. A brief description of the laboratory tests performed is provided in the following sections. Tests follow the general procedures of ASTM.

DESCRIPTION OF SOILS (VISUAL-MANUAL PROCEDURE) (ASTM D 2488)

The soil samples were visually examined by our engineer and soil descriptions were provided. Representative samples were then selected and tested in accordance with the aforementioned laboratory-testing program to determine soil classifications and engineering properties. This data was used to correlate our visual descriptions with the Unified Soil Classification System (USCS).

NATURAL MOISTURE CONTENT (ASTM D 2216)

Natural moisture content (M%) was determined on selected samples. The natural moisture content is the ratio, expressed as a percentage, of the weight of water in a given amount of soil to the weight of solid particles. The results are indicated on the boring logs and table in the Appendix of this report.

ATTERBERG LIMITS (ASTM D-4318)

The Atterberg Limits test was performed to evaluate the soil's plasticity characteristics. The soil Plasticity Index (PI) is representative of this characteristic and is bracketed by the Liquid Limit (LL) and the Plastic Limit (PL). The Liquid Limit is the moisture content at which the soil will flow as a heavy viscous fluid. The Plastic Limit is the moisture content at which the soil is between "plastic" and the semi-solid stage. The Plasticity Index (PI = LL - PL) is a frequently used indicator for a soil's potential for volume change. Typically, a soil's potential for volume change increases with higher plasticity indices. The results of Atterberg limit testing are presented on the boring logs and summary table in the Appendix of this report.

WASH #200 TEST (ASTM D 422)

Grain-size tests were performed to determine the partial soil particle size distribution. The amount of material finer than the openings on the No. 200 sieve (0.074 mm) was determined by washing soil over the No. 200 sieve. The results of wash #200 tests are presented on the boring logs included in the Appendix of this report.

POCKET PENETROMETER

Pocket penetrometer tests were performed on cohesive soil samples. The pocket penetrometer provides a consistency classification and an estimate of the soil's unconfined compressive strength. The pocket penetrometer data are presented as Qp in units of tons per square foot (tsf) on the logs in the Appendix.

STANDARD TEST METHOD FOR FIELD VANE SHEAR TEST ASTM D4767 – 04 ASTM D2573 - 08

The vane shear test is an in-situ geotechnical testing methods used to estimate the undrained shear strength of fully saturated clays without disturbance. The test is relatively simple, quick, and provides a cost effective way of estimating the soil shear strength; therefore, it is widely used in geotechnical investigations. Under special condition, the vane shear test can be also carried out in the laboratory on undisturbed soil specimens; however, the use of the vane shear test in in-situ testing is much more common.

IMPORTANT INFORMATION ABOUT YOUR

Geotechnical Engineering Report

Subsurface problems are a principal cause of construction delays, cost overruns, claims, and disputes.

While you cannot eliminate all such risks, you can manage them. The following information is provided to help.

Geotechnical Services Are Performed Ior Specific Purposes, Persons, and Projects

Geotechnical engineers structure their services to meet the specific needs of their clients. A geotechnical engineering study conducted for a civil engi- neer may not fulfill the needs of a construction contractor or even another civil engineer. Because each geotechnical engineering study is unique, each geotechnical engineering report is unique, prepared *solely* for the client. No one except you should rely on your geotechnical engineering report without first conferring with the geotechnical engineer who prepared it. *And no one -not even you-* should apply the report for any purpose or project except the one originally contemplated.

Read the Full Report

Serious problems have occurred because those relying on a geotechnical engineering report did not read it all. Do not rely on an executive summary. Do not read selected elements only.

A Geotechnical Engineering Report Is Based on A Unique Set of Project-Specilfc Factors

Geotechnical engineers consider a number of unique, project-specific factors when establishing the scope of a study. Typical factors include: the client's goals, objectives, and risk management preferences; the general nature of the structure involved, its size, and configuration; the location of the structure on the site; and other planned or existing site improvements, such as access roads, parking lots, and underground utilities. Unless the geotechnical engineer who conducted the study specifically indicates oth- erwise, do not rely on a geotechnical engineering report that was:

- not prepared for you,
- not prepared for your project,
- not prepared for the specific site explored, or
- completed before important project changes were made.

Typical changes that can erode the reliability of an existing geotechnical engineering report include those that affect:

- the function of the proposed structure, as when it's changed from a parking garage to an office building, or from a light industrial plant to a refrigerated warehouse,
- elevation, configuration, location, orientation, or weight of the proposed structure,
- composition of the design team, or
- project ownership.

As a general rule, *always* inform your geotechnical engineer of project changes- even minor ones-and request an assessment of their impact. *Geotechnical engineers cannot accept responsibility or liability for problems that occur because their repotts do not consider developments of which they were not informed.*

Subsurface Conditions Can Change

A geotechnical engineering report is based on conditions that existed at the time the study was performed. *Do not rely on a geotechnical engineering repottwhose* adequacy may have been affected by: the passage of time; by man-made events, such as construction on or adjacent to the site; or by natural events, such as floods, earthquakes, or groundwater fluctua- tions. *Always* contact the geotechnical engineer before applying the report to determine if it is still reliable. A minor amount of additional testing or analysis could prevent major problems.

Most Geotechnical Findings Are Professional Opinions

Site exploration identifies subsurface conditions only at those points where subsurface tests are conducted or samples are taken. Geotechnical engineers review field and laboratory data and then apply their professional judgment to render an opinion about subsurface conditions throughout the site. Actual subsurface conditions may differ-sometimes significantly- from those indicated in your report. Retaining the geotechnical engineer who developed your report to provide construction observation is the most effective method of managing the risks associated with unanticipated conditions.

A Report's Recommendations Are *Not* Final

Do not overrely on the construction recommendations included in your report. *Those recommendations are not final,* because geotechnical engi- neers develop them principally from judgment and opinion. Geotechnical engineers can finalize their recommendations only by observing actual

subsurface conditions revealed during construction. *The geotechnical engineer who developed your report cannot assume responsibility or liability for the report's recommendations if that engineer does not perform construction observation.*

A Geotechnical Engineering Report Is Subject to Misinterpretation

Other design team members' misinterpretation of geotechnical engineering reports has resulted in costly problems. Lower that risk by having your geotechnical engineer confer with appropriate members of the design team after submitting the report. Also retain your geotechnical engineer to review perti- nent elements of the design team's plans and specifications. Contractors can also misinterpret a geotechnical engineering report. Reduce that risk by having your geotechnical engineer participate in prebid and preconstruction conferences, and by providing construction observation.

Do Not Redraw the Engineer•s Logs

Geotechnical engineers prepare final boring and testing logs based upon their interpretation of field logs and laboratory data. To prevent errors or omissions, the logs included in a geotechnical engineering report should *never* be redrawn for inclusion in architectural or other design drawings. Only photographic or electronic reproduction is acceptable, *but recognize that separating logs from the report can elevate risk.*

Give Contractors a Complete Report and Guidance

Some owners and design professionals mistakenly believe they can make contractors liable for unanticipated subsurface conditions by limiting what they provide for bid preparation. To help prevent costly problems, give con- tractors the complete geotechnical engineering report, *but* preface it with a clearly written letter of transmittal. In that letter, advise contractors that the report was not prepared for purposes of bid development and that the report's accuracy is limited; encourage them to confer with the geotechnical engineer who prepared the report (a modest fee may be required) and/or to conduct additional study to obtain the specific types of information they need or prefer. A prebid conference can also be valuable. *Be sure contrac- tors have sufficient time* to perform additional study. Only then might you be in a position to give contractors the best information available to you, while requiring them to at least share some of the financial responsibilities stemming from unanticipated conditions.

Read Responsibility Provisions Closely

Some clients, design professionals, and contractors do not recognize that geotechnical engineering is far less exact than other engineering disciplines. This lack of understanding has created unrealistic expectations that have led to disappointments, claims, and disputes. To help reduce the risk of such outcomes, geotechnical engineers commonly include a variety of explanatory provisions in their reports. Sometimes labeled "limitations" many of these provisions indicate where geotechnical engineers' responsi- bilities begin and end, to elp others recognize their own responsibilities and risks. *Read these provisions closely.* Ask questions. Your geotechnical engineer should respond fully and frankly.

Geoenvironmental Concerns Are Not Covered

The equipment, techniques, and personnel used to perform a *geoenvironmental* study differ significantly from those used to perform a *geotechnical* study. For that reason, a geotechnical engineering report does not usually relate any geoenvironmental findings, conclusions, or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. *Unanticipated environmental problems have led to numerous project failures.* If you have not yet obtained your own geoenvironmental information, ask your geotechnical consultant for risk man- agement guidance. *Do not rely on an environmental report prepared for someone else.*

Obtain Professional Assistance To Deal with Mold

Diverse strategies can be applied during building design, construction, operation, and maintenance to prevent significant amounts of mold from growing on indoor surfaces. To be effective, all such strategies should be devised for the *express purpose* of mold prevention, integrated into a com- prehensive plan, and executed with diligent oversight by a professional mold prevention consultant. Because just a small amount of water or moisture can lead to the development of severe mold infestations, a num- ber of mold prevention strategies focus on keeping building surfaces dry. While groundwater, water infiltration, and similar issues may have been addressed as part of the geotechnical engineering study whose findings are conveyed in this report, the geotechnical engineer in charge of this project is not a mold prevention consultant; ***none of the services per- formed in connection with the geotechnical engineer's study were designed or conducted for the purpose of mold preven- tion. Proper implementation of the recommendations conveyed in this report will not of itself be sufficient to prevent mold from growing in or on the structure involved.***

Maple Leaf Subdivision