CROSBY & ASSOCIATES

Architecture + Planning + Interiors + Community Engagement

NEW BERLIN POLICE STATION

Decatur Street, Berlin, MD 21643

May 23, 2016

The following document provides additional information and/or clarifications to bidders for the referenced project. Each Bidder MUST acknowledge receipt of this addendum on the Bid Forms. Failure to do so will invalidate the Bidder's proposal.

A D D E N D U M #2

1. The Geotechnical Report prepared for the site is distributed via this Addendum.
2. Requests for Clarification / Requests for Information:
    a. QUESTION: "AIA Document A305 (Contractor's Qualification Statement) is included within the specifications, but the Instructions do not mention its inclusion with the bid form. Should this be completed and submitted with the bid?"
    RESPONSE: Yes, the AIA Document A305 shall be completed and included with the bid. This was addressed at the pre-bid meeting.
    b. QUESTION: "Is the General Contractor to carry Builder's Risk Insurance for the project?"
    RESPONSE: No. Builder's Risk Insurance, if any, will be carried by the Owner.
    c. QUESTION: "[It appears] the Limit of Disturbance is being staked out. Are we to include stake out for the site work or is that being handled by others?"
    RESPONSE: Bidders shall include stake out in their bids.
    d. QUESTION: "What size are the roof drain pipes?"
    RESPONSE: Gutter and downspout sizes are shown on the drawings. See 4/A102 notes 1 and 2.
    e. QUESTION: "HPU-1F and HPU-1G do not have any condensate drain piping indicated. Both are vertical units and will require condensate pumps and an electrical outlet."

513 Court Lane
The Highcourt Center
Cambridge, MD 21613
Tel. 410.221.6508
Cell 410.476.1133

CROSBY & ASSOCIATES

RESPONSE: Condensate from HPU-1F and HPU-1G shall connect to a 1" condensate drain pipe that will run along Mechanical Room 49 wall and spill onto grade near gas meter. No condensate pumps shall be provided.

BY:

Alan J. Brock
Project Architect

GEO-TECHNOLOGY ASSOCIATES, INC.

GEOTECHNICAL AND
ENVIRONMENTAL CONSULTANTS

A Practicing Geoprofessional Business Association Member Firm

October 23, 2015

Crosby & Associates
PO Box 1089
Easton, Maryland 21601

Attn: Mr. Timothy F. Crosby, A.I.A.

Re: Report of Geotechnical Exploration
Berlin Police Department
109 Decatur Street, Lot 2
Berlin
Worcester County, Maryland

Ladies & Gentlemen:

In accordance with our agreement dated August 18, 2015, Geo-Technology Associates, Incorporated (GTA) has completed a geotechnical exploration for the Berlin Police Department project at 109 Decatur Street in Berlin, Maryland. The exploration consisted of performing borings at four locations, visually classifying the soils, and performing limited laboratory testing. Transmitted herein is a report of our findings and conclusions regarding preliminary recommendations for foundation support, slab support and pavement construction.

Unless Crosby & Associates specifies otherwise, the samples collected as a part of the subsurface exploration will be disposed of after a period of 60 days from the date of this report. Thank you for the opportunity to be of assistance. If you have any questions or require additional information, please do not hesitate to contact our office.

Sincerely,
GEO-TECHNOLOGY ASSOCIATES, INC.

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland. License No.: 19923, Expiration Date: 01/20/2017. GS

Gregory R. Sauter, P.E.
Vice President

GRS/grs
31151894

REPORT OF GEOTECHNICAL EXPLORATION

Berlin Police Department

109 Decatur Street, Lot 2
Berlin
Worcester County, Maryland

October 23, 2015

Prepared For:

Crosby & Associates
PO Box 1089
Easton, Maryland 21601

Attn: Mr. Timothy F. Crosby, A.I.A.

Prepared By:

GEO-TECHNOLOGY ASSOCIATES, INC.
Geotechnical and Environmental Consultants
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Georgetown, Delaware 19947
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GTA Job No: 31151894

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REPORT OF GEOTECHNICAL EXPLORATION
BERLIN POLICE DEPARTMENT
109 DECATUR STREET, LOT 2
BERLIN
WORCESTER COUNTY, MARYLAND
OCTOBER 2015

INTRODUCTION

The Town of Berlin is considering developing an approximately 2.42-acre parcel for a new police department facility including a building and parking lot located in Worcester County, Maryland. Geo-Technology Associates, Inc. (GTA) was retained by Crosby & Associates to perform a geotechnical exploration of the site. The scope of this study included field exploration, review of a plot plan, limited laboratory testing, and engineering analysis. The field exploration consisted of four Standard Penetration Test (SPT) borings located throughout the property. Conclusions and recommendations about site development were derived from engineering analyses of field data, and a plan titled REVISED & RE-ASSEMBLED LANDS OF WILLIAM P. PHILLIPS AND FREDERICK W. BRUECKMANN, EXECUTORS, prepared by L. E. Bunting Surveys, Inc. and dated April 26, 1999. GTA is also preparing a Phase I Environmental Site Assessment (ESA) report that will be submitted under a separate cover.

SITE CONDITIONS

Referring to the Site Location Plan and the Exploration Location Plan included as Figures 1 and 2, respectively in Appendix A, the project site is located along the east side of Decatur Street at a distance of approximately 400 to 700 feet south of the intersection between Bay Street and Decatur Street in Berlin, Maryland. The project site is comprised of a relatively flat, rectangular parcel with several trees and lawn, former building remnants, and remains of a circular driveway. The ground surface ranges between approximate Elevation 28 and 32 Mean Sea Level (MSL) as estimated from Google Earth.

PROPOSED CONSTRUCTION

The proposed construction will consist of a low-rise, slab-on-grade building and parking lot. The building will be served by public water and sewer. GTA has assumed preliminary building loads of 2 to 3 kips per foot for wall loads and 50 kips for column loads. GTA should review the

final building loads when available to allow for additional recommendations, if required, based upon the actual loads. It is anticipated that proposed building finish floor and parking lot grades will closely match existing grades.

SITE GEOLOGY

According to the Geologic Map of Worcester County (1978), published by the Maryland Geologic Survey, the site is within the Coastal Plain Physiographic Province. Coastal Plain sediments were deposited in an estuarine environment during times of high water. More specifically, the site lies within the soils mapped as part of the Omar Formation of Quaternary geologic age. These deposits are characterized as, "…upper light-colored sandy beds overlying dark-colored sandy clay silt or silty clay beds." Man-made fills are also expected to occur on the site. Please review the referenced publication for further details regarding this geologic unit.

SUBSURFACE EXPLORATION

The field exploration consisted of drilling Standard Penetration Test (SPT) borings at four locations, designated as B-1 through B-4, throughout the property. The borings were drilled at the approximate locations shown on the Exploration Location Plan, presented as Figure 2 in Appendix A. The exploration locations were selected and field located by GTA horizontally tape measuring from existing site feature. The exploration locations indicated on the plan should be considered approximate. Ground surface elevations were estimated from Google Earth.

The test borings were drilled on October 12, 2015 to depths of 15 feet below the ground surface using an ATV-mounted CME 550 drill rig. Standard Penetration Testing was performed in the boreholes, with soil samples obtained at approximately 2-foot intervals in the upper 10 feet and then at 5-foot intervals thereafter. Standard Penetration Testing involves driving a 2-inch O.D., 1⅜-inch I.D. split-spoon sampler with a 140-pound hammer free-falling 30 inches. The SPT N-value, given as blows per foot (bpf), is defined as the total number of blows required to drive the sampler from 6 to 18 inches below the sampling depth.

Samples obtained from the borings were returned to GTA's office for visual classification by GTA personnel. Selected samples recovered from the field exploration were submitted for limited laboratory analysis. The soil layers were classified in accordance with the Unified Soil Classification System (USCS). Classifications provided on the logs are visual descriptions, supplemented by available laboratory data. The exploration logs are presented in Appendix B. The logs represent our interpretation of the field data based on observation and limited soil classification tests. The interfaces indicated on the logs may be gradual.

SUBSURFACE CONDITIONS

The explorations generally confirm the description of subsurface conditions provided in the *SITE GEOLOGY* section of this report. A 3 to 8-inch thick topsoil layer was encountered at the borings. Borings B-1 and B-2 also encountered fill extending to depths of 2 feet below the ground surface. The fill consisted of Silty SAND (USCS SM; AASHTO A-2-4). The relative density of the fill was loose based upon SPT N-values of 5 and 7 blows per foot (bpf).

Underlying the fill at Borings B-1 and B-2 and the surface topsoil at B-3 and B-4, the borings encountered native soils predominately consisting of Silty SAND (SM; A-2) and Clayey SAND (SC; A-2). The relative density of the soils was very loose to medium dense based upon SPT N-values of 2 to 12 bpf.

A Lean CLAY (CL; A-7-6) layer was encountered at depths of 8 feet and extended to depths of 9 feet at B-4, 11.5 feet at B-3, 13.5 feet at B-1 and to the boring termination depth of 15 feet at B-2. The consistency of the clay layer was medium stiff based upon SPT N-values of 5 to 8 bpf.

Water levels encountered during the exploration program were at depths of 5 to 13.5 feet below the ground surface when logged at completion. Longer term readings (one day after completion) indicated water levels at approximate depths of 5.3 and 5.8 feet below the ground surface at B-3 and B-4 and corresponding to average Elevation 25 MSL. Borings B-1 and B-2 were dry and caved to a depth of 2 feet when logged one day after completion.

Groundwater levels can be expected to fluctuate with bay and ocean tides, seasonal changes, precipitation, and other factors such as development activity. Additionally, perched water conditions develop in granular soils such as sands overlying clays and clayey sands during the "wet season" and during heavy periods of precipitation. Please refer to the exploration logs and Table 1, Exploration Data Summary provided in Appendix B for further information. An idealized subsurface profile is shown on the attached Figure 3, Subsurface Profile.

LABORATORY TESTING

Selected samples obtained from the borings were tested for grain-size analysis, Atterberg Limits, moisture density relationships, California Bearing Ratio (CBR) and/or natural moisture content. The grain-size analysis and Atterberg Limits tests were performed to determine the Unified Soil Classification System (USCS), and the American Association of State Highway and Transportation Officials (AASHTO) designations for the soil. The results of testing are as follows:

SUMMARY OF CLASSIFICATION TESTING

BORING NO.	DEPTH (ft)	USCS CLASSIFICATION	AASHTO CLASSIFICATION	LL %	PI %
B-1	1 – 4	Silty SAND (SM)	A-2-4(0)	NP	NP
B-2	8 - 10	Lean CLAY (CL)	A-7-6(20)	43	17

Note: LL=Liquid Limit PI=Plastic IndexNP=Non-plastic

One bulk, near-surface sample from Boring B-1, was tested for moisture-density relationships in accordance with the Modified Proctor (ASTM D-1557, AASHTO T-180) for use in evaluating the suitability of these soils for reuse as fill. The bulk sample was also subjected to California Bearing Ratio (CBR) testing for use in evaluation of pavement subgrade supporting quality. Results of these tests are summarized in the following table.

SUMMARY OF COMPACTION and CBR DATA
(ASTM D-1557/AASHTO T-180, the Modified Proctor; ASTM D-1883, CBR)

BORING NO.	DEPTH (FT)	MAXIMUM DRY DENSITY (PCF)	OPTIMUM MOISTURE (%)	NATURAL MOISTURE (%)	CBR AT 97% COMPACTION (%)
B-1	1 - 4	128.3	8.4	11.5	10.0

Please refer to the laboratory test results included within Appendix C for additional information.

CONCLUSIONS AND RECOMMENDATIONS

Based upon the results of this study, it is our opinion that construction of the proposed improvements is feasible, given that the geotechnical recommendations are followed and that the standard level of care is maintained during construction. GTA's preliminary recommendations are provided in the following paragraphs.

Earthwork

Earthwork grading of upwards to two feet of fill to cut is assumed within the building pad and pavement areas to achieve grade. Before the placement of compacted fill, areas below proposed foundation, slab and pavement should be stripped to remove existing foundations, slabs and debris remaining from the building and utility demolition, topsoil and soft or very loose materials. Within the building pad area, existing fill, where encountered, should also be removed to expose firm native soils.

Precipitation will result in standing water at low areas. If the water is allowed to pond, the exposed subgrade materials may deteriorate and additional over-excavation or subgrade improvement may be required at the affected areas. Positive drainage should be provided to protect exposed subgrades. After stripping, wet subgrade areas should not be proof-rolled with a loaded tandem-axle dump truck. Instead, the subgrade should be probed (test pits or hand augers) by the Geotechnical Engineer for approval prior to placement of the fill. No fill should be placed until GTA reviews the subgrade. Any soft, wet or otherwise unsuitable materials should be removed to a stable subgrade and replaced with controlled, compacted fill. During wet season construction, GTA anticipates that the existing surficial soils may soften and significant rutting may occur. The affected material will likely require removal prior to placement of fill. GTA recommends a summer season earthwork operation to minimize the economic impact of wet near surface soils.

Most near surface on-site soils, below surficial materials, are considered suitable for reuse as structural fill material. Excavated site materials conforming to SM or SC classifications will be suitable for reuse in structural areas of mass earthwork construction.

The moisture of the bulk sample materials tested was approximately 3 percent above the optimum moisture and will require moisture adjustment to achieve proper compaction. At this moisture, soils similar to these will likely require drying by aeration after spreading over a large surface area to achieve proper compaction. During wet weather, delays and expense will likely be associated with reducing soil moistures to acceptable levels. A contingency should be established for moisture adjustments. If needed, off-site borrow should meet Unified Soil Classification System (USCS) designation SM, SP, SW, GP, GM, or GW and be approved by GTA.

All fills should be constructed in maximum 8-inch thick loose lifts and be compacted to the following specifications:

COMPACTION SPECIFICATIONS

Structure / Fill Location	Compaction / Moisture Specification
Below foundations, floor slabs, pavement and within wall backfill	95% of ASTM D-1557 Moisture: ± 2% of optimum
Top one foot of pavement subgrade	97% of ASTM D-1557 Moisture: ± 2% of optimum

For utility and site earthwork construction, the success of these operations will be largely dependent upon the weather conditions at the time of the earthwork construction. Based on subsurface data, standard excavating techniques should be suitable for utility installation. The natural soils and controlled fill are considered suitable for support of below grade utilities; however, GTA recommends a minimum 6-inch-thick granular bedding to provide uniform support where wet or plastic soils are encountered at the subgrade and as dictated by site conditions. Where HDPE or PVC pipe is used, GTA recommends that stone bedding materials and stone backfill be used up to the springline of the pipe. GTA should be consulted for additional recommendations where HDPE or PVC pipes are used. GTA recommends evaluation and testing of pipe backfill during installation.

Utility installations will likely encounter groundwater. Consideration must be given to dewatering and stability of excavated slopes. Contractors should provide adequate dewatering and earth support systems in utility trench excavations. Utility pipe systems below pavement and other structural areas should be backfilled using controlled, compacted fill. The backfill should be constructed as described in our site grading recommendations. Lift thickness should be reduced to 4 inches when compacting with lightweight equipment around structures.

A soils-technician under the supervision of a geotechnical engineer should monitor fill construction on a fulltime basis. Fill subgrades and each lift of fill should be observed and tested. Compactive effort should be verified by in-place density testing.

Foundations

It is GTA's opinion that the proposed building may be supported on native soils or structural fill using shallow reinforced concrete spread footings preliminarily designed for a maximum net allowable bearing pressure of 2,500 pounds per square foot (psf). Minimum widths for wall footings of 16 inches and column footings of 24 inches are recommended for footing construction. Exterior footings should be founded a minimum of 24 inches below the final exterior grades to provide protection from frost action. If very loose or unsuitable fill materials are encountered, the footing excavations should be undercut and the subgrade should be reestablished with AASHTO No. 57 crushed stone or in accordance with GTA's recommendations in the field at the time of construction.

Detailed foundation evaluations should be performed in each footing excavation prior to the placement of reinforcing steel or concrete. These evaluations should be performed by a representative of the GTA to confirm that the allowable soil bearing capacity is available. The foundation bearing surface evaluations should be performed using a combination of visual observation, comparison with the borings, hand-rod probing, and Dynamic Cone Penetrometer (DCP) testing. Concrete should be placed on the day the footings are excavated.

Floor Slabs

The ground floor slabs should be designed as concrete slab-on-grade. GTA recommends that the concrete floor slabs supported on grade be founded on a four-inch thick, open-graded washed gravel or stone layer covered with a polyethylene vapor retarder to interrupt the rise of moisture through the slab. Natural and compacted fill subgrades for support of the floor slabs should be tested to verify stability and compaction in accordance with GTA's earthwork recommendations prior to placement of concrete. Control joints should be provided to control shrinkage cracking of the concrete floor system. Isolation joints should be present at the location of walls, columns, and footings to allow for differential movement.

Pavements

Limited earthwork grading is anticipated to bring the parking lot and driveways to achieve proposed grade. Pavement sections should be designed based on anticipated subgrade conditions and traffic intensity. Laboratory testing of selected site soils indicated a CBR value of 10 for the silty SAND (A-2-4) sample tested. The CBR value is based upon a relative compaction of 97 percent of maximum dry density (Modified Proctor, ASTM D 1557, and AASHTO T-180). Based upon the CBR value, the site soils tested are considered to be good for supporting standard pavement sections.

Based on GTA's experience with similar site improvements, construction traffic is likely to be more significant for the design of the pavements. The pavement section thickness should be designed to reflect construction traffic and the pavement supporting quality of the subgrade materials.

If needed, off-site borrow should meet Unified Soil Classification System (USCS) designation SM, SP, SW, GP, GM, or GW and be approved by GTA. The borrow materials should be suitable for the support of the pavement thickness sections indicated in the following paragraphs. However, subgrade materials should be carefully evaluated prior to graded aggregate base placement and paving. Therefore, GTA recommends that the upper 12 inches of pavement subgrade be constructed of fill with the following characteristics:

PAVEMENT SUBGRADE SPECIFICATIONS

Liquid Limit	35 or less
Plasticity Index	Non-Plastic
Maximum Dry Density	105 pcf or greater
California Bearing Ratio	10 or greater

Prior to construction of pavement sections, the pavement subgrade should be proof-rolled with a loaded tandem-axle dump truck under the observation of GTA to evaluate stability. Unstable or unsuitable soils should be over-excavated to a stable bearing layer. The subgrade may be re-established with approved, controlled, compacted stabilized fill. A contingency for undercutting and replacement of unsuitable materials should be provided.

We have assumed that both flexible and rigid pavement sections will be proposed for the project site. Flexible and rigid pavement is to be divided into "heavy-duty" and "standard-duty" sections. The heavy duty sections will consist of the driveway area entrance and surrounding the building. Light duty sections are to be restricted to parking lot automobile type traffic.

Provided the site preparation and pavement subgrade preparation recommendations have been followed, the following pavement design sections and supporting specifications presented are considered acceptable. The recommended flexible and rigid pavement standard-duty and heavy-duty pavement sections are as follows:

FLEXIBLE PAVEMENT

Pavement Components	Standard-Duty	Heavy-Duty
Hot Mix Asphalt Surface Course (9.5 mm)	1 ½ inches	1 ½ inches
Hot Mix Asphalt Base Course (12.5 mm or 19 mm)	2 ½ inches	3 ½ inches
Aggregate Subbase (Maryland CR-6)	4 inches	6 inches
Approved Subgrade	12 inches	12 inches

RIGID PAVEMENT

Pavement Components	Standard-Duty	Heavy-Duty
Portland Cement Concrete*	5 inches	6 inches
Aggregate Subbase (Maryland CR-6)	4 inches	6 inches
Approved Subgrade	12 inches	12 inches

*f'c= 4,000 psi concrete provided with 7% air-entrainment; control joints, isolation joints, load transfer devices, and reinforcement as required.

All pavement materials and construction should conform to Maryland State Highway Administration (MSHA) STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, latest edition and Town of Berlin requirements, as applicable.

ADDITIONAL SERVICES

We recommended that GTA be retained to provide observation and testing services for the following items.

- Review final plans to evaluate if they conform with the intent of this report.
- Provide observation and testing services during fill placement to evaluate if the work is being performed in accordance with the project specifications and intent of this report.
- Observe the proof-rolling of pad and pavement subgrades prior to placing fill or base course to evaluate stability.
- Review excavated footings for compliance with the project drawings and the intent of this geotechnical report.
- Provide special inspections as required by the project plans and specifications and local jurisdictional officials.

LIMITATIONS

This report, including all supporting boring logs, field data, field notes, laboratory test data, calculations, estimates and other documents prepared by GTA in connection with this project have been prepared for the exclusive use of Crosby & Associates pursuant to agreements between GTA and Crosby & Associates in accordance with generally accepted engineering practice. All terms and conditions set forth in the Agreement and the General Provisions appended thereto are incorporated

herein by reference. No warranty, express or implied, is made herein. Use and reproduction of this report by any other person without the expressed written permission of GTA and Crosby & Associates is unauthorized and such use is at the sole risk of the user.

The analysis and preliminary recommendations contained in this report are based on the data obtained from limited observation and testing of the encountered materials. Test borings indicate soil conditions only at specific locations and times and only at the depths penetrated. They do not necessarily reflect strata or variations that may exist between test boring locations. Consequently, the analysis and recommendations must be considered preliminary until the subsurface conditions can be verified by direct observation at the time of construction. If variations of subsurface conditions from those described in this report are noted during construction, recommendations in this report may need to be re-evaluated.

In the event that any changes in the nature, design, or location of the facilities are planned, the conclusions and recommendations contained in this report should not be considered valid unless the changes are reviewed and conclusions of this report are verified in writing. Geo-Technology Associates, Inc. is not responsible for any claims, damages, or liability associated with interpretation of subsurface data or reuse of the subsurface data or engineering analysis without the expressed written authorization of Geo-Technology Associates, Inc. The scope of our services for this geotechnical exploration did not include any environmental assessment or investigation 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 logs regarding odors or unusual or suspicious items or conditions observed are strictly for the information of our Client.

This report and the attached logs are instruments of service. The subject matter of this report is limited to the facts and matters stated herein. Absence of a reference to any other conditions or subject matter shall not be construed by the reader to imply approval by the writer.

Important Information About Your

Geotechnical Engineering Report

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

The following information is provided to help you manage your risks.

Geotechnical Services Are Performed for 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 engineer 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-Specific 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 otherwise, 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 reports 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 report* whose 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 fluctuations. *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 engineers 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 pertinent 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 contractors 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 contractors 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' responsibilities begin and end, to help 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 management 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 comprehensive 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 number 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 performed in connection with the geotechnical engineer's study were designed or conducted for the purpose of mold prevention. 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.***

Rely, on Your ASFE-Member Geotechncial Engineer for Additional Assistance

Membership in ASFE/The Best People on Earth exposes geotechnical engineers to a wide array of risk management techniques that can be of genuine benefit for everyone involved with a construction project. Confer with you ASFE-member geotechnical engineer for more information.

ASFE
The Best People on Earth

8811 Colesville Road/Suite G106, Silver Spring, MD 20910
Telephone: 301/565-2733 Facsimile: 301/589-2017
e-mail: info@asfe.org www.asfe.org

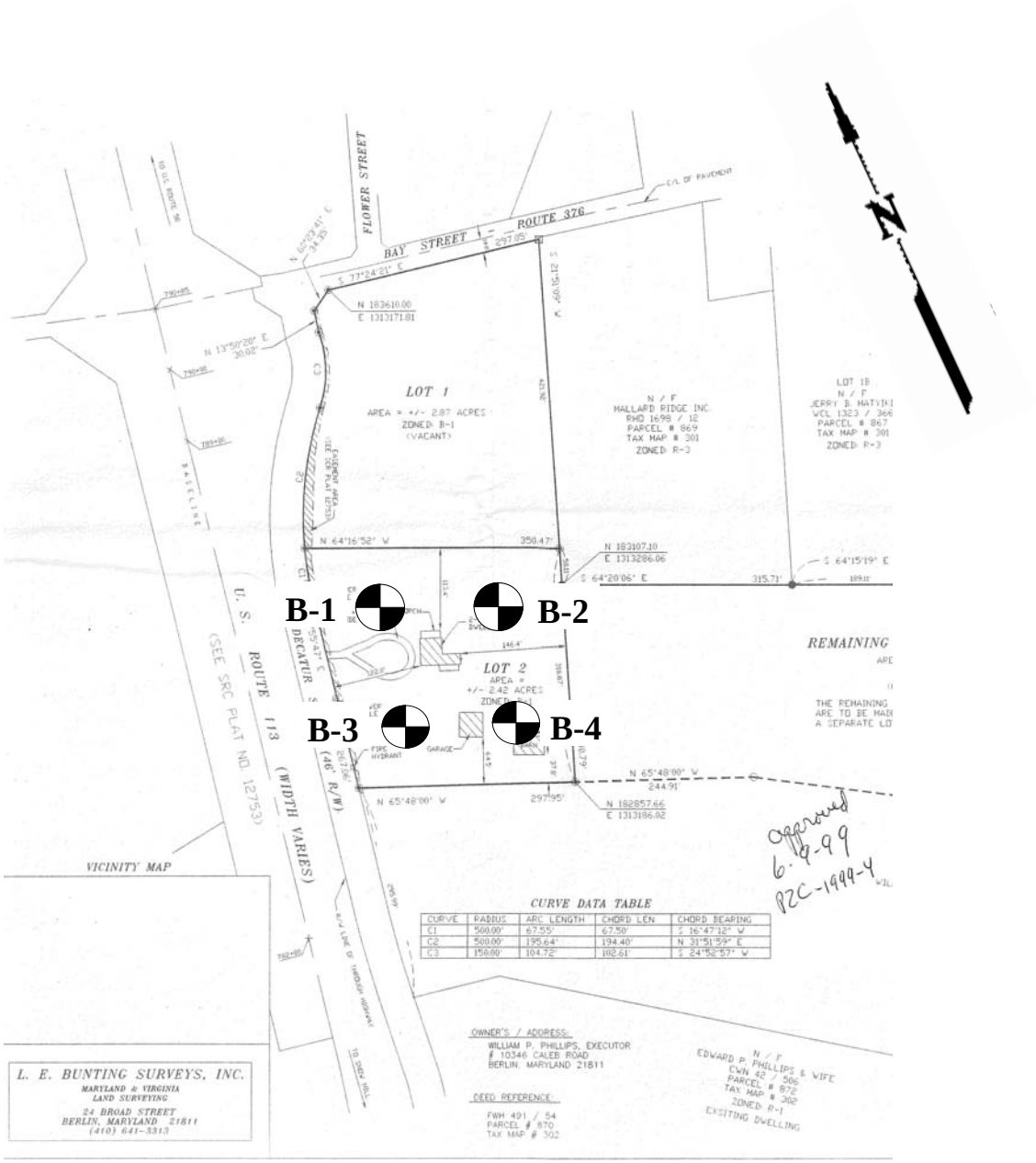
IIGER06045.0M

APPENDIX A

FIGURES

Site Location Plan taken from Google Earth.

	GEO-TECHNOLOGY ASSOCIATES, INC. *Geotechnical and Environmental Consultants* 21133 Sterling Square, Unit 7 Georgetown, Delaware 19947 Phone: 302-855-9761 Fax: 302-856-3388		**Site Location Plan** **Berlin Police Department** **Berlin, Maryland**		
SCALE	DATE	DRAWN BY	REVIEW BY	FIGURE	JOB NO.
NTS	October 2015	Google	GRS	1	31151894



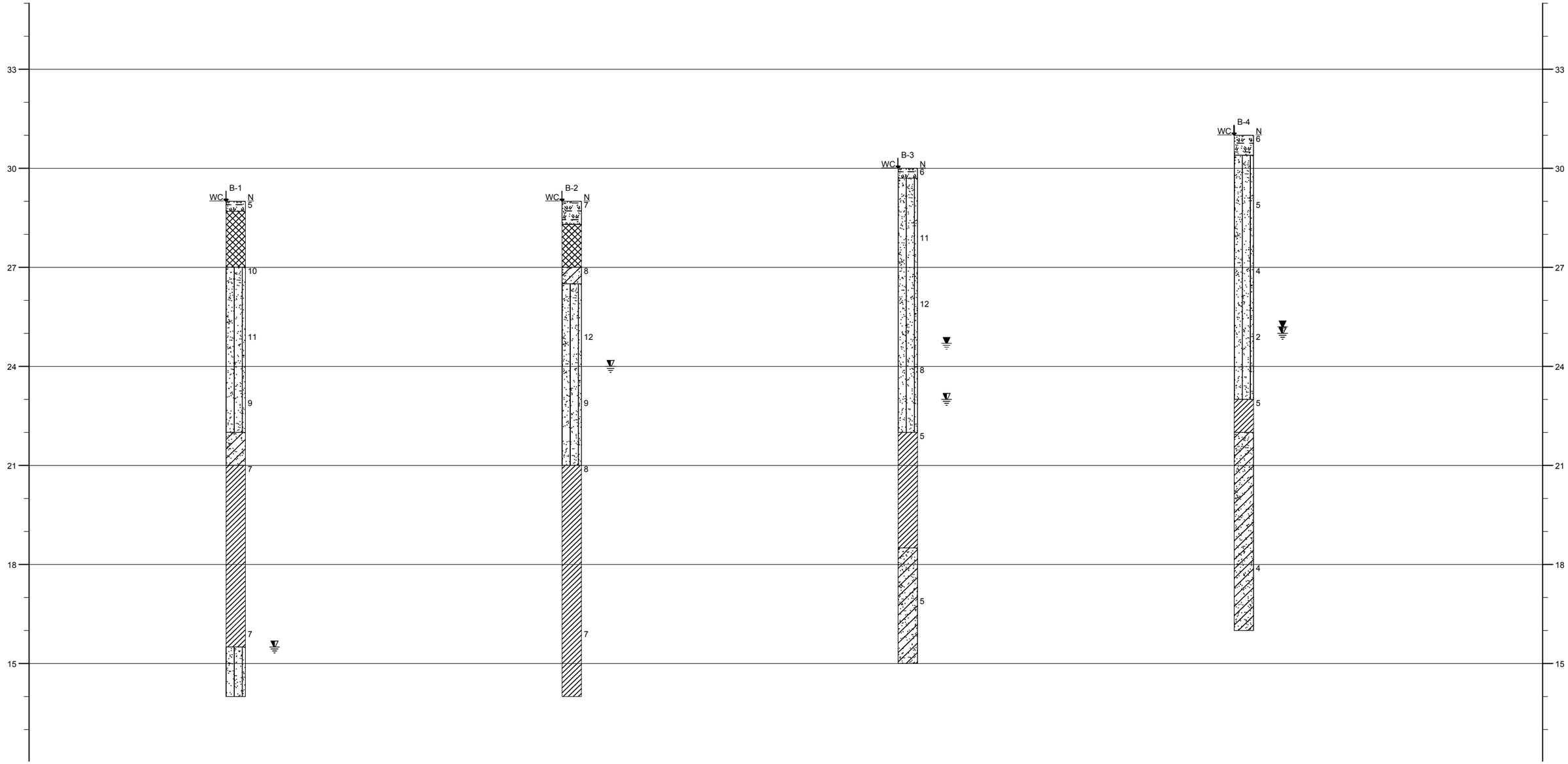
- GTA Boring Locations

Exploration Location Plan taken from a plan titled *Revised & Re-assembled Lands Of William P. Phillips & Frederick W. Brueckmann Executor* , dated April 26, 1999 and prepared by L.E. Bunting Surveys, Inc. The location of borings should be considered approximate.

GEO-TECHNOLOGY ASSOCIATES, INC.
Geotechnical and Environmental Consultants
21133 Sterling Square, Unit 7
Georgetown, Delaware 19947
Phone: 302-855-9761
Fax: 302-856-3388

Exploration Location Plan
Berlin Police Department
Berlin, Maryland

SCALE	DATE	DRAWN BY	REVIEW BY	FIGURE	JOB NO.
1" ~ 260'	October 2015	Google	GRS	2	31151894



Symbol Description

- Topsoil
- Existing Fill
- SM - Silty Sand
- SC - Clayey Sand
- CL - Lean Clay
- Approximate horizontal location of exploration
- Water table during drilling
- Water table at completion
- Water table at 3rd check

Geo-Technology Associates, Inc.

SUBSURFACE PROFILE

VERTICAL SCALE: 1"=3'	DRAWN BY: MM	APPROVED BY: GS	DATE: 10/23/2015

Berlin Police Department
Worcester County, Maryland

PROJECT NO. 31151894 | FIGURE NO. 3

APPENDIX B
EXPLORATION DATA

GEO-TECHNOLOGY ASSOCIATES, INC.

GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS

21133 Sterling Avenue, Suite 7 Georgetown, Delaware 19947
302-855-9761 302-856-3388 FAX

TABLE 1
Exploration Data Summary
Berlin Police Department
Worcester County, Maryland
GTA Project No.: 31151894

Exploration No.	Total Depth of Exploration (ft.)	Topsoil Thickness (In.)	Extent of Fill From - To (ft.)	Extent of USCS SM or SC Soils From - To (ft.)	Extent of USCS CL Soils From - To (ft.)	Depth to Groundwater At Completion (ft.)	Depth to Groundwater at 1 day after Completion of Exploration (ft.)
B-1	15	4	0.3 – 2	2 – 8; 13.5 - 15	8 – 13.5	13.5	Dry and caved to 2 ft.
B-2	15	8	0.3 – 2	2 – 8	8 – 15	5.0	Dry and caved to 2 ft.
B-3	15	3	*NE	0.3 – 8; 11.5 - 15	8 – 11.5	7.0	5.3
B-4	15	7	NE	0.6 – 8; 9 - 15	8 - 9	6.0	5.8

*NE: Not Encountered

NOTES FOR EXPLORATION LOGS

KEY TO USCS TERMINOLOGY AND GRAPHIC SYMBOLS

MAJOR DIVISIONS (BASED UPON ASTM D 2488)				SYMBOLS GRAPHIC	SYMBOLS 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 (LESS THAN 15% PASSING THE NO. 200 SIEVE)			GW
					GP
		GRAVELS WITH FINES (MORE THAN 15% PASSING THE NO. 200 SIEVE)			GM
					GC
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	CLEAN SANDS (LESS THAN 15% PASSING THE NO. 200 SIEVE)			SW
					SP
		SANDS WITH FINES (MORE THAN 15% PASSING THE NO. 200 SIEVE)			SM
					SC
FINE-GRAINED SOILS MORE THAN 50% OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	SILT OR CLAY (<15% RETAINED ON THE NO. 200 SIEVE) SILT OR CLAY WITH SAND OR GRAVEL (15% TO 30% RETAINED ON THE NO. 200 SIEVE) SANDY OR GRAVELLY SILT OR CLAY (>30% RETAINED ON THE NO. 200 SIEVE)	SILTS AND LEAN CLAYS LIQUID LIMIT LESS THAN 50			ML
					CL
					OL
		ELASTIC SILTS AND FAT CLAYS LIQUID LIMIT GREATER THAN 50			MH
					CH
					OH
HIGHLY ORGANIC SOILS					PT

NOTE: DUAL SYMBOLS ARE USED TO INDICATE COARSE-GRAINED SOILS WHICH CONTAIN AN ESTIMATED 5 TO 15% FINES BASED ON VISUAL CLASSIFICATION OR BETWEEN 5 AND 12% FINES BASED ON LABORATORY TESTING; AND FINE-GRAINED SOILS WHEN THE PLOT OF LIQUID LIMIT & PLASTICITY INDEX VALUES FALLS IN THE PLASTICITY CHART'S CROSS-HATCHED AREA. FINE-GRAINED SOILS ARE CLASSIFIED AS ORGANIC (OL OR OH) WHEN ENOUGH ORGANIC PARTICLES ARE PRESENT TO INFLUENCE ITS PROPERTIES. LABORATORY TEST RESULTS ARE USED TO SUPPLEMENT SOIL CLASSIFICATION BY THE VISUAL-MANUAL PROCEDURES OF ASTM D 2488.

ADDITIONAL TERMINOLOGY AND GRAPHIC SYMBOLS

	DESCRIPTION		GRAPHIC SYMBOLS
ADDITIONAL DESIGNATIONS	TOPSOIL		
	MAN MADE FILL		
	GLACIAL TILL		
	COBBLES AND BOULDERS		
RESIDUAL SOIL DESIGNATIONS	DESCRIPTION	"N" VALUE	
	HIGHLY WEATHERED ROCK	50 TO 50/1"	
	PARTIALLY WEATHERED ROCK	MORE THAN 50 BLOWS FOR 1" OF PENETRATION OR LESS, AUGER PENETRABLE	

COARSE-GRAINED SOILS
(GRAVEL AND SAND)

DESIGNATION	BLOWS PER FOOT (BPF) "N"
VERY LOOSE	0 - 4
LOOSE	5 - 10
MEDIUM DENSE	11 - 30
DENSE	31 - 50
VERY DENSE	>50

NOTE: "N" VALUE DETERMINED AS PER ASTM D 1586

FINE-GRAINED SOILS
(SILT AND CLAY)

CONSISTENCY	BPF "N"
VERY SOFT	<2
SOFT	2 - 4
MEDIUM STIFF	5 - 8
STIFF	9 - 15
VERY STIFF	16 - 30
HARD	>30

NOTE: ADDITIONAL DESIGNATIONS TO ADVANCE SAMPLER INDICATED IN BLOW COUNT COLUMN:
WOH = WEIGHT OF HAMMER
WOR = WEIGHT OF ROD(S)

SAMPLE TYPE

DESIGNATION	SYMBOL
SOIL SAMPLE	S-
SHELBY TUBE	U-
ROCK CORE	R-

WATER DESIGNATION

DESCRIPTION	SYMBOL
ENCOUNTERED DURING DRILLING	▽
UPON COMPLETION OF DRILLING	▼
24 HOURS AFTER COMPLETION	▼

NOTE: WATER OBSERVATIONS WERE MADE AT THE TIME INDICATED. POROSITY OF SOIL STRATA, WEATHER CONDITIONS, SITE TOPOGRAPHY, ETC. MAY CAUSE WATER LEVEL CHANGES.

LOG OF EXPLORATION NO. B-1

PROJECT: **Berlin Police Department**
PROJECT NO.: **31151894**
PROJECT LOCATION: **Worcester County, Maryland**

WATER LEVEL (ft):	13.5		DRY
DATE:	10/12/15		10/13/15
CAVED (ft):			2.0

DATE STARTED: **10/12/15**
DATE COMPLETED: **10/12/15**
DRILLING CONTRACTOR: **GTA**
DRILLER: **D. Hans**
DRILLING METHOD: **HSA**
SAMPLING METHOD: **Split Spoon**

WATER ENCOUNTERED DURING DRILLING (ft): **13.5 ft.**
GROUND SURFACE ELEVATION: **29**
DATUM: **Google Earth**
EQUIPMENT: **CME-550**
LOGGED BY: **MM**
CHECKED BY: **GS**

SAMPLE NUMBER	SAMPLE DEPTH (ft.)	SAMPLE RECOVERY (in.)	SAMPLE BLOWS/6 inches	N (blows/ft.)	ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
					29.0	0	TS		Topsoil	Topsoil: 4 in.
1	0.0	7	3-3-2-2	5	28.7		FILL		Dark brown- gray, moist, loose, Silty SAND (Fill)	
					27.0		SM		Light brown, moist, loose to medium dense, Silty SAND	
2	2.0	13	2-4-6-6	10		3				
3	4.0	16	3-5-6-6	11						
						6				
4	6.0	22	4-4-5-5	9	22.0		SC		Gray, moist, loose, Clayey SAND	
					21.0		CL		Gray, moist, medium stiff, Lean CLAY	
5	8.0	20	2-3-4-6	7		9				
						12				
					15.5		SM		Gray, wet, loose, Silty SAND	
6	13.0	24	1-2-5-9	7	14.0	15			Bottom of Hole at 15 ft.	
						18				

NOTES: **Automatic Hammer.**

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LOG OF EXPLORATION NO. B-1

LOG OF EXPLORATION NO. B-2

PROJECT: **Berlin Police Department**
PROJECT NO.: **31151894**
PROJECT LOCATION: **Worcester County, Maryland**

WATER LEVEL (ft):	5.0		DRY
DATE:	10/12/15		10/13/15
CAVED (ft):			2.0

DATE STARTED: **10/12/15**
DATE COMPLETED: **10/12/15**
DRILLING CONTRACTOR: **GTA**
DRILLER: **D. Hans**
DRILLING METHOD: **HSA**
SAMPLING METHOD: **Split Spoon**

WATER ENCOUNTERED DURING DRILLING (ft) ▽ **5.0**
GROUND SURFACE ELEVATION: **29**
DATUM: **Google Earth**
EQUIPMENT: **CME-550**
LOGGED BY: **MM**
CHECKED BY: **GS**

SAMPLE NUMBER	SAMPLE DEPTH (ft.)	SAMPLE RECOVERY (in.)	SAMPLE BLOWS/6 inches	N (blows/ft.)	ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
					29.0	0	TS		Topsoil	Topsoil: 8 in.
1	0.0	10	1-4-3-4	7	28.3		FILL		Dark gray-brown, moist, loose, Silty SAND (Fill)	
					27.0		SC		Brown, moist, loose, Clayey SAND	
2	2.0	11	3-3-5-6	8	26.5	3	SM		Light brown, moist to wet, loose to medium dense, Silty SAND	
3	4.0	15	2-6-6-9	12						▽
4	6.0	13	4-4-5-5	9		6				
5	8.0	18	2-3-5-7	8	21.0	9	CL		Gray, moist, medium stiff, Lean CLAY	
						12				
6	13.0	24	1-3-4-5	7						
					14.0	15			Bottom of Hole at 15 ft.	
						18				

NOTES: **Automatic Hammer.**

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LOG OF EXPLORATION NO. B-2

LOG OF EXPLORATION NO. B-3

PROJECT: **Berlin Police Department**
PROJECT NO.: **31151894**
PROJECT LOCATION: **Worcester County, Maryland**

WATER LEVEL (ft):	7.0		5.3
DATE:	10/12/15		10/13/15
CAVED (ft):			6.4

DATE STARTED: **10/12/15**
DATE COMPLETED: **10/12/15**
DRILLING CONTRACTOR: **GTA**
DRILLER: **D. Hans**
DRILLING METHOD: **HSA**
SAMPLING METHOD: **Split Spoon**

WATER ENCOUNTERED DURING DRILLING (ft) ▽ **7.0**
GROUND SURFACE ELEVATION: **30**
DATUM: **Google Earth**
EQUIPMENT: **CME-550**
LOGGED BY: **MM**
CHECKED BY: **GS**

SAMPLE NUMBER	SAMPLE DEPTH (ft.)	SAMPLE RECOVERY (in.)	SAMPLE BLOWS/6 inches	N (blows/ft.)	ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
					30.0	0	TS		Topsoil	Topsoil: 3 in.
1	0.0	13	4-3-3-3	6	29.7		SM		Light brown, moist to wet, loose to medium dense, Silty SAND	
2	2.0	16	3-4-7-7	11		3				Light mottling 3 ft.
3	4.0	15	2-5-7-7	12						▽
4	6.0	17	6-4-4-3	8		6				▽
5	8.0	22	2-2-3-4	5	22.0	9	CL		Gray, moist, medium stiff, Lean CLAY	
					18.5	12	SC		Gray, wet, medium loose, Clayey SAND	
6	13.0	24	1-2-3-3	5						
					15.0	15	SM		Bottom of Hole at 15 ft.	
						18				

NOTES: **Automatic Hammer.**

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LOG OF EXPLORATION NO. B-3

LOG OF EXPLORATION NO. B-4

PROJECT: **Berlin Police Department**
PROJECT NO.: **31151894**
PROJECT LOCATION: **Worcester County, Maryland**

WATER LEVEL (ft):	6.0		5.8
DATE:	10/12/15		10/13/15
CAVED (ft):			6.0

DATE STARTED: **10/12/15**
DATE COMPLETED: **10/12/15**
DRILLING CONTRACTOR: **GTA**
DRILLER: **D. Hans**
DRILLING METHOD: **HSA**
SAMPLING METHOD: **Split Spoon**

WATER ENCOUNTERED DURING DRILLING (ft) ▽ **6.0**
GROUND SURFACE ELEVATION: **31**
DATUM: **Google Earth**
EQUIPMENT: **CME-550**
LOGGED BY: **MM**
CHECKED BY: **GS**

SAMPLE NUMBER	SAMPLE DEPTH (ft.)	SAMPLE RECOVERY (in.)	SAMPLE BLOWS/6 inches	N (blows/ft.)	ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
					31.0	0	TS		Topsoil	Topsoil: 7 in.
1	0.0	11	1-3-3-2	6	30.4		SM		Light brown, moist to wet, very loose to loose, Silty SAND	
2	2.0	10	1-2-3-4	5		3				
3	4.0	16	1-2-2-1	4						▽
4	6.0	8	1-1-1-1	2		6				
					23.0		CL		Gray, moist, medium stiff, Lean CLAY	
5	8.0	19	2-2-3-3	5	22.0	9	SC		Gray, wet, very loose to loose, Clayey SAND	
						12				
6	13.0	24	1-1-3-4	4						
					16.0	15			Bottom of Hole	
						18				

NOTES: **Automatic Hammer.**

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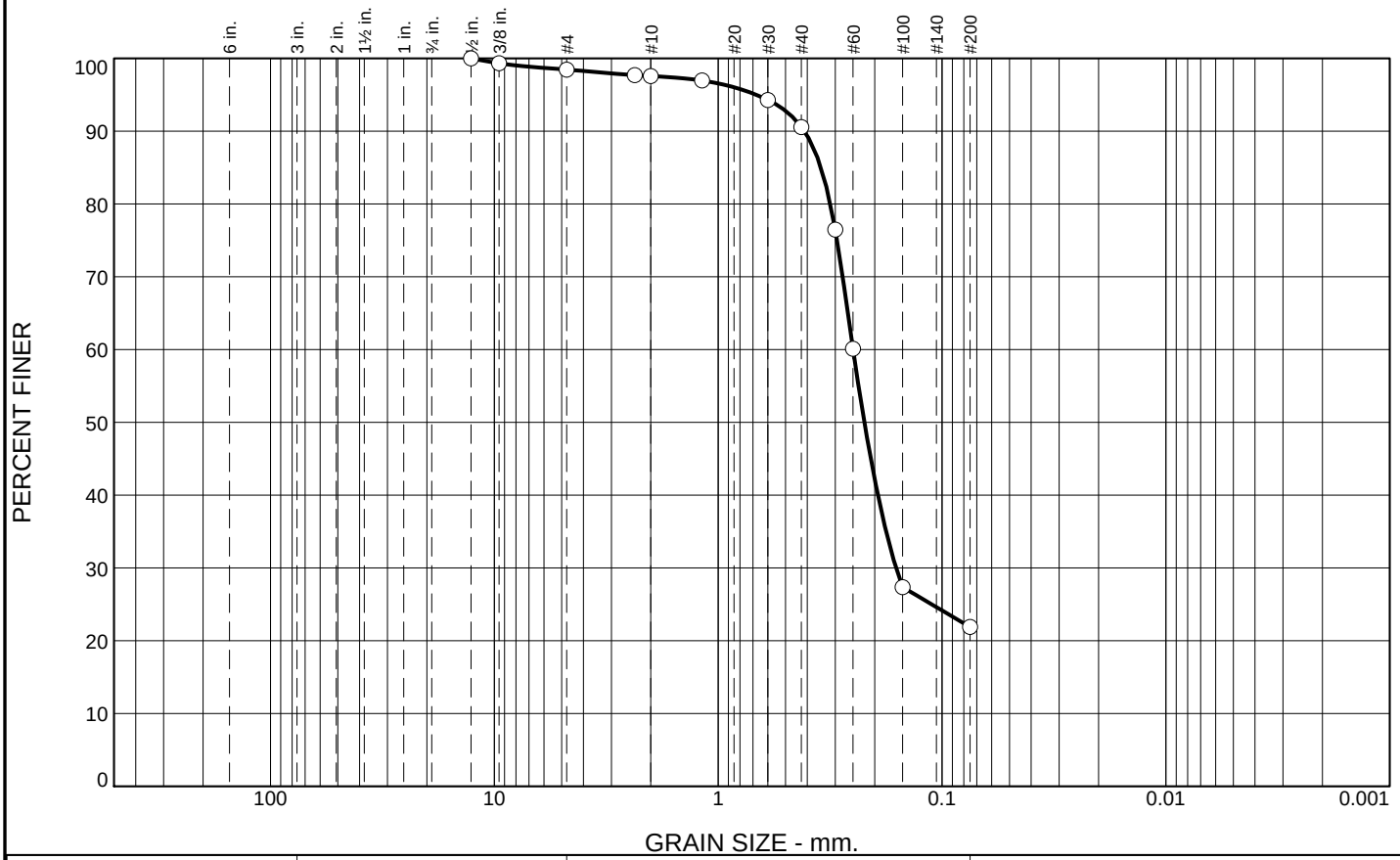
LOG OF EXPLORATION NO. B-4

APPENDIX C
LABORATORY DATA

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	1.5	0.9	7.0	68.7	21.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1/2 in	100.0		
3/8 in	99.3		
# 4	98.5		
# 8	97.7		
# 10	97.6		
# 16	97.0		
# 30	94.3		
# 40	90.6		
# 50	76.5		
# 60	60.1		
# 100	27.4		
# 200	21.9		

* (no specification provided)

Soil Description

Brown, Silty SAND

Atterberg Limits

PL= NP LL= NP PI= NP NM= 11.5

Coefficients

D_{90}= 0.4123 D_{85}= 0.3476 D_{60}= 0.2497
D_{50}= 0.2222 D_{30}= 0.1605 D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= SM AASHTO= A-2-4(0)

Remarks

Location: B-1
Sample Number: Bulk **Depth:** 1'-4' **Date:** 10/12/2015

GEO-TECHNOLOGY ASSOCIATES, INC.
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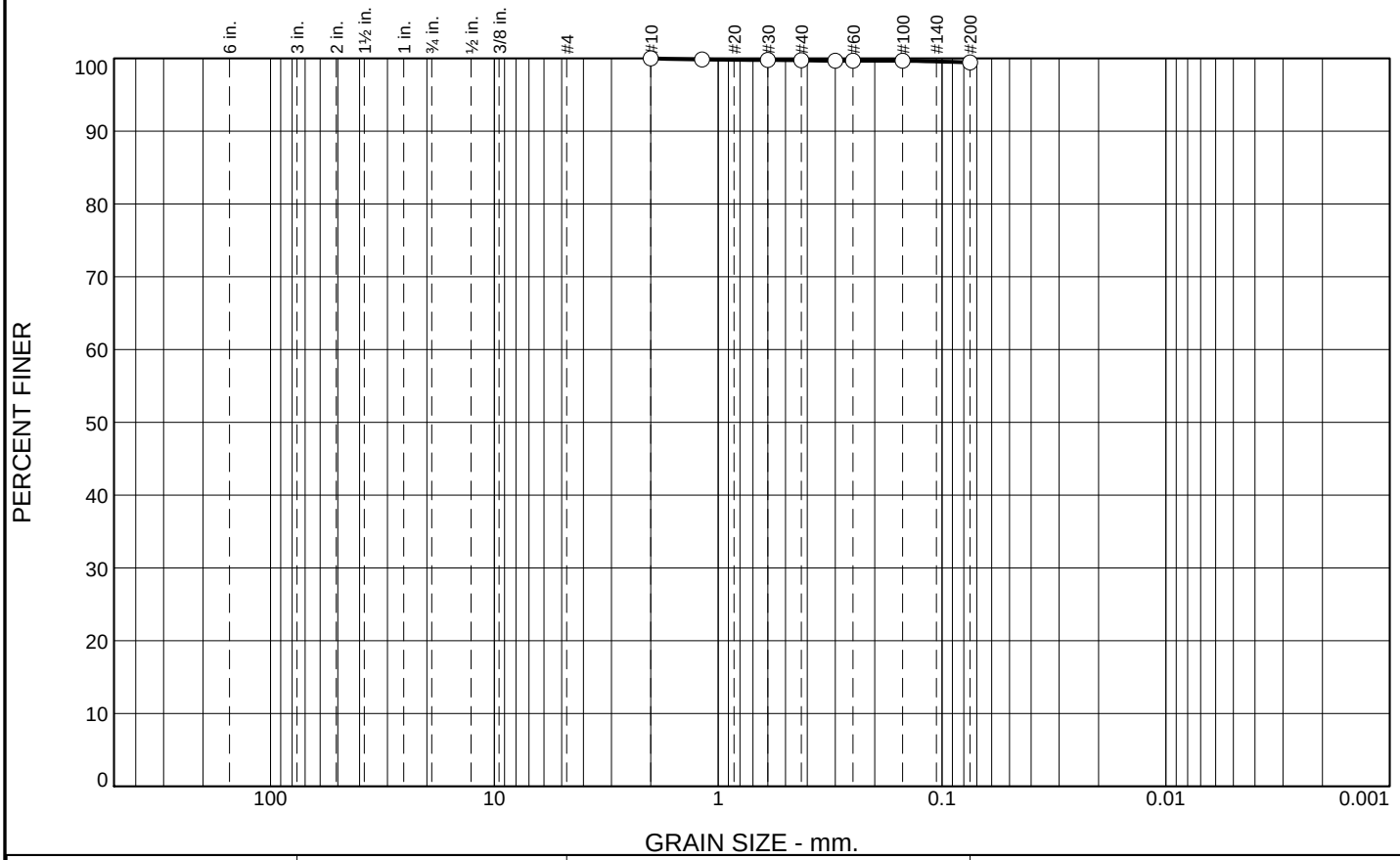
Georgetown, DE 19947

Client: Crosby Associates
Project: Berlin Police Department

Project No: 31151894 **Figure**

Tested By: FRS **Checked By:** GS

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.2	0.3	99.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
# 10	100.0		
# 16	99.9		
# 30	99.8		
# 40	99.8		
# 50	99.7		
# 60	99.7		
# 100	99.7		
# 200	99.5		

* (no specification provided)

Soil Description

Gray, Lean CLAY

Atterberg Limits

PL= 26 LL= 43 PI= 17 NM= 25.4

Coefficients

D_{90}= D_{85}= D_{60}=
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= CL AASHTO= A-7-6(20)

Remarks

Location: B-2
Sample Number: 4 **Depth:** 8'-10' **Date:** 10/12/2015

GEO-TECHNOLOGY ASSOCIATES, INC.
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Georgetown, DE 19947

Client: Crosby Associates
Project: Berlin Police Department

Project No: 31151894 **Figure**

Tested By: FRS **Checked By:** GS

MOISTURE-DENSITY RELATIONSHIP TEST REPORT
ASTM D 1557-12 Method A Modified

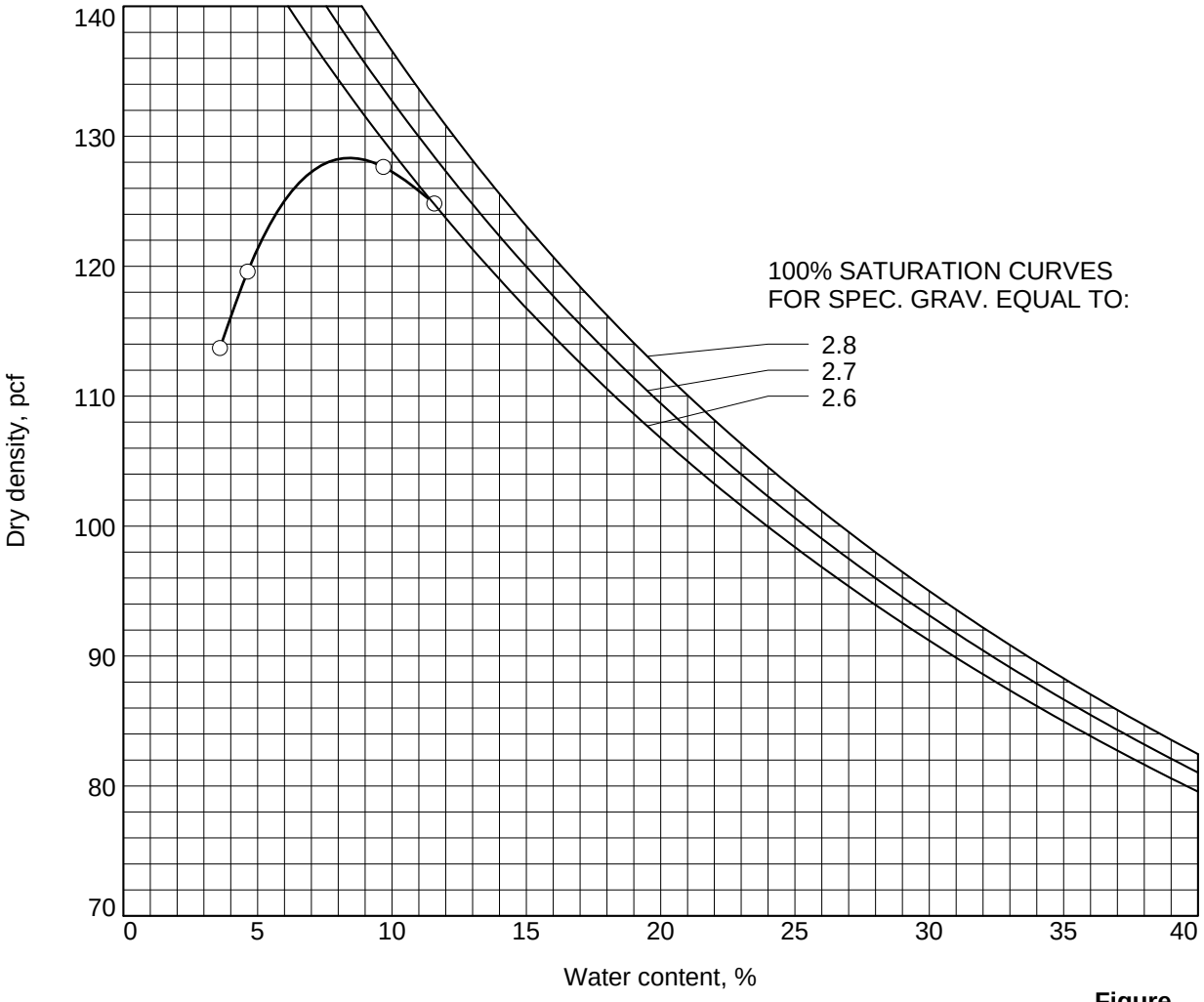
Project No.: 31151894 **Date:** 10/12/2015
Project: Berlin Police Department
Client: Crosby Associates
Location: B-1
Sample Number: Bulk **Depth:** 1'-4'
Remarks:

MATERIAL DESCRIPTION

Description: Brown, Silty SAND

Classifications - **USCS:** SM **AASHTO:** A-2-4(0)
Nat. Moist. = 11.5 % **Sp.G. =**
Liquid Limit = NP **Plasticity Index =** NP
% < No.200 = 21.9 %

TEST RESULTS
Maximum dry density = 128.3 pcf
Optimum moisture = 8.4 %

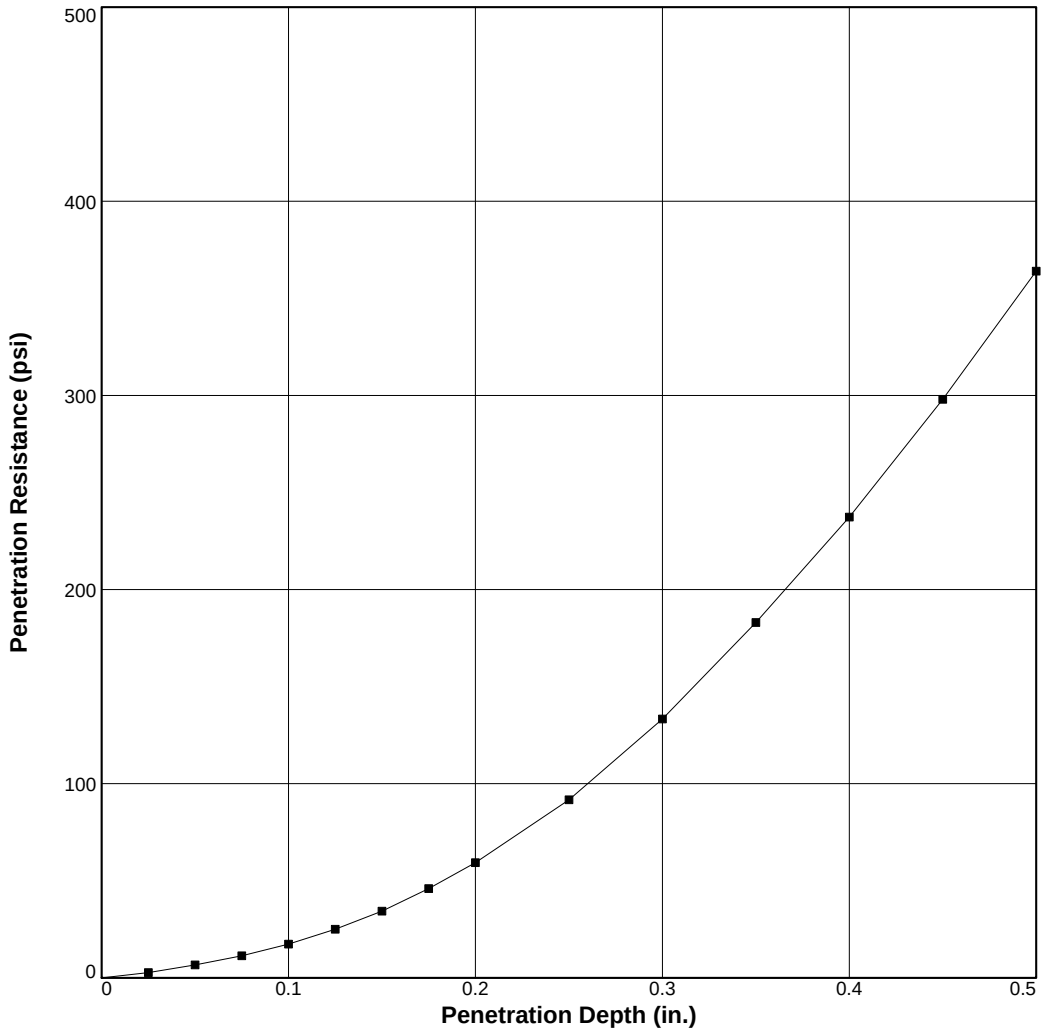


Figure

Geo-Technology Associates, Inc.

Tested By: FRS **Checked By:** GS

BEARING RATIO TEST REPORT



	Molded			Soaked			CBR (%)		Linearity Correction (in.)	Surcharge (lbs.)	Max. Swell (%)
	Density (pcf)	Percent of Max. Dens.	Moisture (%)	Density (pcf)	Percent of Max. Dens.	Moisture (%)	0.10 in.	0.20 in.			
1 ○											
2 △											
3 □	125.0	97.4	10.3	125.0	97.5	11.0	10.0	12.9	0.160	10	0

Material Description	USCS	Max. Dens. (pcf)	Optimum Moisture (%)	LL	PI
Brown, Silty SAND	SM	128.3	8.4	NP	NP

Project No: 31151894

Project: Berlin Police Department

Location: B-1

Sample Number: Bulk **Depth:** 1'-4'

Date: 10/12/2015

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Georgetown, DE 19947

Test Description/Remarks:

Figure _____