GOVERNMENT OF THE DISTRICT OF COLUMBIA
DEPARTMENT OF GENERAL SERVICES

RFP FOR FORT DAVIS PLAYGROUND AND SPLASH PAD
Solicitation No: DCAM-17-CS-0085

Addendum No. 2
Issued: May 24, 2017

This Addendum No. 2 is issued and hereby published on the DGS website on May 24, 2017. Except as modified hereby, the Request for Proposal ("RFP") remains unmodified.

Item #1: Date and Time for Receiving Bids. Section F.3. of the RFP is modified as follows: "Submissions shall be received no later than **2:00 pm** local time on **May 30, 2017**. The Contractor assumes the sole responsibility for timely delivery of its submission, regardless of the method of delivery."

Item #2: Attachment A, Section 3c): Delete the following sentence: "Include two pathways leading to the Recreation Center with one leading directly to the main entrance."

Item #3: RFI Responses: See Exhibit A below for responses to RFI's.

Item #4: Geotechnical Report: Exhibit B of this Addendum will become Attachment P of the RFP.

Item #5: Archaeology Report: Exhibit C of this Addendum will become Attachment Q of the RFP.

Item #6: Attachment B - Form of Offer Letter and Bid Form: Updated Attachment B is attached hereto as Exhibit D.

By: Brenda Allen
Brenda Allen
Chief Contracting Officer

Date: 5/24/17

- End of Addendum No. 2 –

Exhibit A

RFI Responses

No.	Question	Response
1	Please clarify the extent of detail required in the preliminary design to be included with the bid.	We would like to see a schematic design and design approach that indicates the bidders understanding of how to achieve ADA compliance to the new features from both the recreation facility and 41st Street as well as creative inclusion all elements proposed on the concept design.
2	Will you provide an allowance for Pepco, DCDOT, DC Water permits and costs? These costs cannot be determined until the project is finalized.	Please use a $35,000 allowance for Pepco, DCDOT, DC Water Permits and cots. See revised Attachment B to RFP below as Exhibit D.
3	Please provide us a list of Splash Pad installers desired.	We have no preferred installer.
4	Please provide light pole specs for the LED lights.	Please see Attachment A of the RFP.
5	a) Please advise if (Rain Bird) drip irrigation system required. b) Are complete as built drawings available for the existing irrigation system that we are to tie into and can they be made available? c) Can DGS provide as-built information on the irrigation system? Where are possible connection points between the existing irrigation system and a potential rainwater harvesting system?	No irrigation is required for this project.
6	Is a new waterline connection to the street required?	It is up to the Design-Builder to determine if it is needed based on your design.
7	What is the proposed Square feet for the Play Area?	Conceptually between 4000-5000 SF.
8	What is the proposed Square feet for the Splash Pad?	Conceptually around 1000-1500 SF.
9	What are the Square feet of Hardscape Seating & Shade?	Conceptually between 2500-3000 SF.
10	Scope of work on site plan (PDF) does not match with Fort Davis Concept Plan, where is the boundary of the scope of work. Please clarify.	Please refer to the Concept Plan in Attachment A of the RFP. The Site Plan provided is for the general location of the new playground and splash pad.
11	Handicapped access path what would be the materials, Asphalt, Concrete, Composite wood?	Please see Attachment A of the RFP, Section 3.c which specifies to provide pricing for concrete walkways with add alternate pricing for asphalt walkways.
12	a) Is there any design issue or only for water collection in Bio-Retention? b) Is the entire Fort Davis recreation center and other existing impervious	a) Storm water management practices must be in accordance to DOEE requirements and regulations. b) The bio-retention area must treat all storm water that enters to proposed limit of disturbance.

	area to be included when sizing the proposed bio-retention area?	
13	How will the existing building structure be connected/have access to the new landscape design?	Via an ADA accessible path.
14	What percentage of new tree canopy should be part of the design?	There is no tree canopy requirement for this project.
15	Is there any Landscape Design requirement beyond the given Concept Plan?	No.
16	How elaborate is the design requirement? Are you looking for a basic design or an extraordinary design?	We would like to see a schematic design and design approach that indicates the bidders understanding of how to achieve ADA compliance to the new features from both the recreation facility and 41st Street as well as creative inclusion all elements proposed on the concept design.
17	Should the Splash Pad run only using rain water or should be water connection there for all the time	Water connection supplemented by Rain Water captured from the roof.
18	The grade differential within the site is about 30'. Do we need retaining walls?	That would depend on the proposed design.
19	Is it possible for DGS to provide information on soil conditions and infiltration rates?	Please see Item #3 of this Addendum.
20	Can DGS provide a diagram showing rooftop drainage areas and discharge points?	Contractor may visit site again if need be. Please coordinate with the COTR if additional site visits are required.
21	Does the grant for the spray park impose additional conditions on the design of this feature?	Yes, the grant states that a portion of the water used at the spray park must be water captured from the roof. We also must have a way to measure the amount of water being used by both street water and storm water. The Splash Pad needs to be completed by Sept 29, 2017.
22	Is there a requirement to achieve 40% tree canopy coverage over the 4.718 acre site as defined on the C-10 Existing Conditions Plan?	There is no tree canopy requirement for this project.
23	Does DGS intend to share drawings prepared in previous contracts to help offerors in the preparation of the preliminary design required to be submitted with the proposal? Otherwise, could DGS provide information on any design constraints encountered during the preparation of previous plans that could significantly affect the new design?	The only drawings available for use are included in Attachment A of the RFP.
24	Would DGS provide any additional survey (topographic, utilities, etc.) needed for the new work proposed or should the offeror include budget for additional survey?	An existing survey is available to all bidders in Attachment A of the RFP.

25	a) The current site has very steep slopes which might not allow for ADA access as shown in the conceptual plan. Will there be flexibility in the areas that need ADA access? b) Please clarify which path is the one "leading directly to the main entrance." One path terminates at the rear of the recreation center and one on the north side. The one on the north does not appear to be an accessible route. c) The schematic design shows ADA pathways but they will likely require switchback ramps as the site is heavily sloped. It will be impossible to bid the concrete sufficiently before the site has been fully surveyed and evaluated for this.	a) ADA access from the building, as well as access from 41st Street, to the playgrounds/splash pad are a requirement. b) We need to have an accessible route from 41st Street to the playground/splash pad as well as an ADA accessible route from the recreation center to those areas. c) The site has been surveyed and that information is available to all bidders. Refer to Attachment A of the RFP.
26	Confirm the splash park should be designed to incorporate runoff from the roof.	Yes, confirmed.
27	Is there an available interior location for the splash park filtration system (6'x8')? If not, is an exterior above ground or below ground preferred?	We have no preference for the location.
28	Confirm that the 10 motion sensor jets at the splash park are to be ground sprays only.	Confirmed - ground spray jets only.
29	Provide further detail/description for "provide add alternate jets with flow controlled valves."	Add alternate jets to be turned on with control valves. Base bid jets are to be motion sensor activated.
30	Is there a specified splash park provider?	No.
31	Please provide the estimate used to determine the project budget (if any).	Approximately $1.3 M to $1.5 M. This includes **ALL** hard and soft cost to complete the project.
32	Based on site grading we are concerned that the proposed accessible route will require extensive retaining walls or significant regrading that may affect the resulting size of the play areas. Are retaining walls part of the project?	Depends on the proposed schematic design.
33	Please confirm that the walkway along the west property line is to be reconstructed completely including all stairways and railings currently located there.	Yes, confirmed.
34	What lighting and safety improvements are required for the splash pad?	There are no lighting requirements specifically pertaining to the splash pad.

35	The proposed bioretention area appears to be located in an area with the existing splash pad and a number of walls, stairs, walks, etc. Is the intent to demolish all these structures? Are new retaining walls anticipated in this area to retain grade after the removal of these elements?	Depends on the proposed schematic design
36	What is meant by "shade" in the area between the spray ground and the play area? A structure? If so, how large and of what materials?	Please provide one (1) metal shade shelter that provides 300 SF of shade. Please see attachment A, for examples of shade structure.
37	Similar to question 2, it appears the proposed walkway around the perimeter of the play areas to the north may interfere with the outfield of the ball field or require retaining walls to separate uses without compromising the field. Please advise.	We don't anticipate any issues with the use of the field.
38	Swings and other play equipment specified will require fairly extensive safety zones. Do you have a test fit of all the proposed play equipment that shows that it will fit into the area designated for it on the concept plan?	We do not have a "test fit". Some options for play equipment are identified in the solicitation. The Design/Build Team is required to address all safety requirements for the playground.
39	The program requirements (3c) mention "two pathways leading to the recreation center with one leading directly to the main entrance". Are you referring to the main front entrance from 41st? May existing brick pathway surfaces be preserved where viable?	This line has been removed from the Attachment A of the solicitation. Refer to Item #2 on Page 1 of this Addendum.
40	Is it possible to provide an allowance for playground and splash pad equipment? Without solid specifications, bidders are not bidding apples to apples.	No allowance is being provided.
41	Since this project appears to exceed 5,000SF, the building permit will be an issue. It is unlikely that it can be acquired in the short time frame available.	The Design-Build Team is responsible for obtaining all permits for this project.
42	Is there a geotechnical report for this site?	Yes. Please refer to Item #4 on Page 1 of this Addendum.
43	Can the piping to the existing splash pad be simply extended to the new splash pad location?	Depends on the proposed schematic design.
44	Item in the scope of work mentions utility installation - are new utilities anticipated or can they be pulled from the rec center facility?	It is up to the Design-Builder to determine if it is needed based on your design.

45	Can you please specify the SF of area that needs to be included in the bioretention facility calculations?	Depends on the proposed schematic design.
46	Who is responsible to provide the arborist on this project?	If an arborist is required, it will be up to the Design/Build Team to provide one.
47	Will a full archaeological survey be required?	Yes. Please refer to Item #5 on Page 1 of this Addendum.
48	The schematic design shows ADA pathways but they will likely require switchback ramps as the site is heavily sloped. It will be impossible to bid the concrete sufficiently before the site has been fully surveyed and evaluated for this.	The site has been surveyed and that information is available to all bidders.
49	The completion date for this project may not be achievable due to the permitting process. Can a time frame starting from issuance of permit be specified instead of a completion date?	The splash pad must be completed prior to September 29, 2017. We have no flexibility on that date.

Exhibit B - Attachment P

August 15, 2014

Geotechnical Engineering Report

Fort Davis Playground
1400 41st Street SE
Washington, DC

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August 15, 2014

Mr. Dan Dove
Studio 39 Landscape Architecture, P.C.
6416 Grovedale Drive, Suite 100-A
Alexandria, Virginia 22310

Subject: **Revised Geotechnical Engineering Report, Fort Davis Playground, 1400 41st Street, SE, Washington, DC (Our DC14016)**

Dear Mr. Dove:

GeoCapitol Engineering LLC (GeoCapitol) is pleased to present the following geotechnical engineering report prepared for Fort Davis Playground, 1400 41st Street, SE, Washington, DC.

We appreciate the opportunity to serve as your geotechnical consultant on this project. Please do not hesitate to contact me if you have any questions or want to meet to discuss the findings and recommendations contained in the report.

Sincerely,

GEOCAPITOL ENGINEERING LLC

Daniel F. Gradishar, PE
President/ Principal Engineer
DGradishar@GeoCapEng.com

GeoCapitol Engineering LLC

Table of Contents

1.0 Scope of Services

This geotechnical engineering report presents the results of the field investigation, soil laboratory testing, and engineering analysis of the geotechnical data. This report specifically addresses the following:

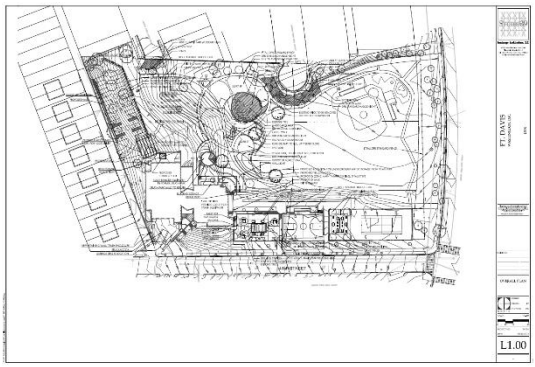
- An evaluation of subsurface conditions within the area of the proposed site development.
- Foundation recommendations for support of the proposed pavilion and storage shed.
- Earthwork recommendations, including subgrade preparation and the suitability of on-site soils for re-use as compacted structural fill.
- Subdrainage recommendations for handling of groundwater during construction and final design.
- Recommendations regarding the estimated infiltration rate of on-site soils for use by others in design of storm water management features.

Services not specifically detailed herein are excluded from the Scope of Services of this Agreement.

2.0 Site Description and Proposed Construction

The site is located at 1400 41st Street SE, Washington, DC. A site vicinity map is presented as Figure 1 at the end of this report. The site is mostly a flat grassy area with a baseball field, tennis courts and basketball court at the north end of the property, and with two building on the southern side. The elevation at the site ranges from approximately EL 258 to EL 299, sloping downward towards the south.

Image provided by Google Earth.



Proposed plans provided by Studio 39.

Based on plans provided to us by you dated July 2, 2014, the proposed construction consists of underground water storage, pavilion, seating, walkways, and a parking lot.

3.0 Subsurface Conditions

Subsurface conditions were investigated by drilling a total of six hand auger test borings in the proposed site re-development area. Hand auger boring logs and a boring location plan are presented in Appendix A of this report.

3.1 Geology

The site is located within the Coastal Plain Physiographic Province of District of Columbia. The Coastal Plain consists of a seaward thickening wedge of unconsolidated to semi-consolidated sedimentary deposits from the Cretaceous Geologic Period to the Holocene Geologic Epoch. These deposits represent marginal-marine to marine sediments consisting of interbedded sands and clays. The Coastal Plain is bordered to the east by the Atlantic Ocean and to the west by the Piedmont Physiographic Province. The dividing line between the Coastal Plain and the Piedmont is locally referred to as the "Fall Line". This name comes from

the waterfalls that form as a result of the differential erosion that occurs as streams cross the Piedmont/Coastal Plain contact.

Specifically, according to local geologic maps, the site is mapped in the terrace deposits of the Miocene geologic period. The existing fill soils of Stratum A are believed to be related to previous site grading.

3.2 Published Soils

A review of the USDA NRCS soil map indicates the site is comprised of three general soil types: CdC, Chillum-Urban land, Beb, Beltsville-Urban land, and WpB, Woodstown-Urban land.

3.3 Stratification

The subsurface materials encountered have been stratified for purposes of our discussions herein. These stratum designations do not imply that the materials encountered are continuous across the site. Stratum designations have been established to characterize similar subsurface conditions based on material gradations and parent geology. The subsurface materials encountered in the test borings completed at the site have been assigned to the following strata:

Stratum A (Existing Fill)	loose, silty sand, gravelly lean clay, silty sand, and clayey sand FILL with varying amounts of gravel, moist, brown and red brown

The two letter designations included in the strata descriptions presented above and on the test boring logs represent the Unified Soil Classification System (USCS) group symbol and group name for the samples based on laboratory testing per ASTM D-2487 and visual classifications per ASTM D-2488. It should be noted that visual classifications per ASTM D-2488 may not match classifications determined by laboratory testing per ASTM D-2487.

3.4 Groundwater

Groundwater level observations were made in the field during drilling. We did not make 24-hour water level observations as boreholes were backfilled upon completion for safety concerns. Groundwater was encountered only at HA-3 at depths of about 2 feet below the existing ground surface, or about EL 297, likely due to the irrigation system for the baseball field.

The groundwater observations presented herein are considered to be an indication of the groundwater levels at the dates and times indicated. Where more impervious silt and clay soils are encountered, the amount of water seepage into the borings is limited, and it is generally not possible to establish the location of the groundwater table through short term water level observations. Accordingly, the groundwater information presented herein should be used with caution. Also, fluctuations in groundwater levels should be expected with seasons of the year, construction activity, and changes to surface grades, precipitation, or other similar factors.

3.5 Soil Laboratory Test Results

Selected soil samples obtained from the field investigation were tested for grain size distribution with hydrometer, Atterberg limits, and natural moisture contents. The HA-2 (B-2) sample at 2 feet tested as Loam and as Clay Loam at 3 feet according to the USDA classification system. A summary of soil laboratory test results is presented below, and the results of natural moisture content tests are presented on the test boring logs in Appendix A.

Test Boring No.	Depth (ft)	Sample Type	Stratum	Description of Soil Specimen	Sieve Results		Atterberg Limits			Natural Moisture Content (%)
					Percent Retained #4 Sieve	Percent Passing #200 Sieve	LL	PL	PI	
HA-2 (B-2)	4′	Bag	A	gravelly LEAN CLAY (CL) with sand	19.4	18.5	31	15	16	11.5
HA-5 (B-5)	2′	Bag	A	clayey SAND (SC) with gravel	24.1	56.7	41	20	21	13.4

Notes:
1. Soil tests are in accordance with applicable ASTM standards
2. Soil classification symbols are in accordance with Unified Soil Classification System
3. Visual identification of samples is in accordance with ASTM D-2488
4. Key to abbreviations: LL = liquid limit; PL = plastic limit; PI = plasticity index; NP = nonplastic; N/T = not tested

4.0 Engineering Analysis

Recommendations regarding foundations, subdrainage, earthwork, and stormwater management by infiltration are presented herein.

4.1 Spread Footings

Based on the assumed lower elevation for the proposed pavilion and storage shed, existing fill or new compacted fill should be encountered at normal spread footing depths. The existing fill will not be suitable for direct support of spread footings. Accordingly, we recommend undercutting 2 feet or to firm natural soil (whichever is less) and replace with new compacted fill as necessary to reach design subgrades. After undercutting the existing fill and prior to placement of any new compacted fill, the undercut subgrade should be observed during proof rolling by the geotechnical engineer to confirm that the new subgrade is suitable to receive new compacted fill. The footings can then be constructed at normal design depths on the new compacted fill. Spread footings founded in new compacted fill may be designed with a net allowable soil bearing pressure of 2,000 psf. In order to achieve the design bearing pressure, lowering or undercutting of specific footings may be required. It is critical that all footing subgrades be observed and approved for the appropriate bearing pressure by the geotechnical engineer, prior to placement of steel reinforcement or concrete.

Fill material and compaction requirements are presented in Section 4.3 of this report. Exterior footing subgrades should be located at least 2.5 feet below final exterior grades for frost considerations. Individual column footings and continuous wall footings should be at least 30 inches and 18 inches wide, respectively, for local or punching shear considerations. A maximum slope of one horizontal to one vertical (1H:1V) should be maintained between the bottom edges of adjacent footings. Settlement of spread footings should not exceed about 1-inch, and differential settlement between adjacent foundation elements should not exceed about one-half this amount.

Footing subgrades should be observed and approved prior to placement of concrete, to ascertain that footings are placed on suitable bearing soils as recommended herein. Footings should be excavated and concrete placed the same day in order to avoid disturbance from water or weather. Disturbance of footing subgrades by exposure to water seepage or weather conditions should be avoided. Any existing fill, disturbed, frozen, or soft subgrade soils should be removed prior to placing footing concrete. It may be desirable to place a 3 to 4-inch thick "mud mat" of lean concrete immediately on the approved footing subgrade to avoid softening of the exposed subgrade. Forms may be used if necessary, but less subgrade disturbance is anticipated if excavations are made to the required dimensions and concrete placed against the soil. If footings are formed, the forms should be removed and the excavation backfilled as soon as possible. Water should not be allowed to pond along the outside of footings for long periods of time.

4.2 Subdrainage

Groundwater was encountered in one boring next to the baseball field at HA-3 at a depth of about 2 feet below the existing ground surface, or about EL 297. We assumed that the ground water is likely perched and assumed to be due to the irrigation system. Accordingly, groundwater should be below the proposed foundation depths. However, the contractor should be prepared to provide temporary dewatering during construction if groundwater is present during excavations for foundations. We recommend that the dewatering consist of a system of individual sumps and pumps during excavation.

It is critical that as soon as water seepage is observed, the contractor should excavate surface trenches from the observed water seepage to a sump pit and sump pump. If the water is allowed to saturate subgrades, softening of the subgrade will occur very quickly and extra costs will be incurred. However, if the contractor can channel the water to a sump pit and keep the majority of the subgrade from getting saturated, extra costs due to water softening should be significantly reduced. The temporary dewatering system should remain in place until the floor slab subgrades are approved and the permanent underfloor subdrainage system is installed and operational.

It should be understood that the groundwater information presented herein should be used with caution. Also, fluctuations in groundwater levels should be expected with seasons of the year, construction activity, changes to surface grades, precipitation, or other similar factors. Therefore, water levels presented in this report may not be representative of those encountered at the time of construction. It should be the responsibility of the contractor to verify groundwater conditions and evaluate dewatering requirements prior to bidding and/or construction. Ground subsidence may result due to temporary dewatering and cause adverse settlement of any nearby, existing structures. Therefore, possible modification to the dewatering program may be required to reduce potential adverse effects to existing structures. Further, a monitoring program should be developed to record the effect of dewatering operation on the nearby existing structures. If dewatering-induced settlements are anticipated, either modifications in the dewatering program or foundation underpinning may be required.

4.3 Earthwork

Fill may be required for site grading in structure and pavement areas, and as backfill. The areas to be filled should be cleared and grubbed prior to placing fill. Unsuitable existing fill, soft or loose natural soils, organic material, and rubble should be stripped to approve subgrades as determined by the geotechnical engineer. Topsoil depths presented on the boring logs should not be considered as stripping depths, as topsoil depths may vary widely across the site. Stripping depths will probably extend to greater depths than the topsoil depths indicated herein due to the presence of minor amounts of organics, roots, and other surficial materials that will require removal as a part of the stripping operations. In addition, seasonal soil moisture variations can affect stripping depths. In general, less stripping may occur during summer months when drier weather conditions can be expected. The depth of required stripping should be determined prior to construction by the excavation contractor using test pits, probes, or other means that the contractor wishes to employ, and this determination should be the responsibility of the excavation contractor. All subgrades should be proof rolled with a minimum 20 ton, loaded dump truck or suitable rubber tire construction equipment approved by the geotechnical engineer, prior to the placement of new fill.

Fill material should be placed in lifts not exceeding 8 inches loose thickness, with fill materials compacted by hand operated tampers or light compaction equipment placed in maximum 4-inch thick loose lifts. Fill should be compacted at +/- 2% of the optimum moisture content to at least 95 percent of the maximum dry density per ASTM D-698. The upper 6 inches of pavement subgrades should be compacted to at least 100 percent of the maximum dry density per the same standard.

Fill placed along slopes steeper than 5H: 1V should be benched into the existing slope. Benches should consist of minimum 8 feet wide level cut, and at least one such bench should be used for each 3 feet of vertical rise of fill placed.

Materials used for compacted fill for support of footings, slabs on-grade, and pavements should consist of soils classifying CL, ML, SC, SM, SP, SW, GC, GM, GP, or GW per ASTM D-2487, with a maximum dry density greater than 105 pcf. Materials used for backfill against walls should consist of soils classifying ML, SM, SP, SW, GM, GP, or GW, with a liquid limit and plasticity index less than 40 and 15 respectively. It is expected that the majority of soils will be suitable for re-use as fill. However, the Stratum A existing fill may not be suitable for re-use as new compacted fill due to deleterious man-made materials in the fill. In addition, drying of excavated soils by spreading and aerating may be necessary to obtain proper compaction. This may not be practical during the wet period of the year. Accordingly, earthwork operations should be planned for early spring through late Fall, when drier weather conditions can be expected. Drying of fill materials by the use of lime may also be considered. However, in the event that lime is used, more specific details regarding the percentage of lime used and installation techniques should be provided.

Fill materials should not be placed on frozen or frost-heaved soils, and/or soils that have been recently subjected to precipitation. All frozen or frost-heaved soils should be removed prior to continuation of fill operations. Borrow fill materials should not contain frozen materials at the time of placement.

Compaction equipment that is compatible with the soil type used for fill should be selected. Theoretically, any equipment type can be used as long as the required density is achieved; however, sheepsfoot roller equipment are best suited for fine-grained soils and vibratory smooth drum rollers are best suited for granular soils. Ideally, a smooth drum roller should be used for sealing the surface soils at the end of the day or prior to upcoming rain events. In addition, compaction equipment used adjacent to walls below grade should be selected so as to not impose undesirable surcharge on walls. All areas receiving fill should be graded to facilitate positive drainage of any water associated with precipitation and surface run-off.

For utility excavation backfill, we recommend that open graded stone be used to backfill the pipe trench to the spring line of the pipe. Hand operated compaction equipment should be used until the backfill has reached a level 1 foot above the top of the pipe to prevent damaging the pipe. Also, backfill material within 2 feet of the top of the pipe should not contain rock fragments or gravel greater than 1-inch in diameter.

After completion of compacted fill operations in structure or pavement areas, construction of structure elements or asphalt should begin immediately, or the finished subgrade should be protected from exposure to inclement weather conditions. Exposure to precipitation and freeze/thaw cycles will cause the finished subgrade to soften and become excessively disturbed. If development plans require that finished subgrades remain exposed to weather conditions after completion of fill operations, additional fill should be placed above finished grades to protect the newly placed fill. Alternatively, a budget should be established for reworking of the upper 1 to 2 feet of previously placed compacted fill.

4.4 Infiltration Analysis

Two methods were used to estimate infiltration capabilities on the subject site: in-situ infiltration testing and published correlations with soil classifications. Details regarding the in-situ infiltration and classification test techniques, the estimated infiltration rates from the individual methods, and the recommended design infiltration rate for the site soils are presented herein.

4.4.1 Infiltration Test Results

In-situ infiltration tests are performed in the field to observe the rate at which water will permeate the soil under saturated conditions. One test boring was drilled in the area of planned infiltration. The test boring was initially drilled to depths of 4.6 feet below the existing grade, and allowed to remain open for a period of approximately 24 hours to allow any groundwater levels within the boreholes to stabilize. An offset infiltration test hole was drilled at the boring locations to the assumed planned infiltration invert elevation of 2 feet. One PVC casing was set to the bottom of the test holes. The purpose of the casing is to prevent caving of test hole sidewalls. After setting the PVC casing, the borehole was filled with water to saturate the bottom subsoils. The following day, the test hole was refilled with water and the water level in each test hole was recorded every hour for a 4-hour period. Using this procedure, the average change in the

water level over the 4-hour period is considered the infiltration rate. Based on the results of the in-situ infiltration tests, estimated infiltration rates have been assigned for the site soils, as presented in the table below:

Test Boring No.	Approximate Test Depth (feet)	Estimated Infiltration Rate (inches/hour)
HA-2	2	0.48

4.4.2 Classification Test Results

The classification test method is performed with grain-size sieve analyses including hydrometer testing on samples obtained from corresponding proposed infiltration depths, to determine the USDA soil texture classifications. Published correlations between USDA classifications and infiltration rates were used to provide estimated hydraulic conductivity values. Since hydraulic conductivity and infiltration values are essentially equal at no head conditions, using the hydraulic conductivity values to estimate the infiltration rates provides a conservative estimate of infiltration for use in design. Estimated infiltration rates using the USDA soil texture classifications are presented below.

Test Boring No.	Approximate Test Depth (feet)	USDA Soil Texture Classification	Estimated Infiltration Rate (inches/hour)
HA-2	2	Loam	0.52
HA-2	3	Clay Loam	0.09

4.4.3 Recommended Design Infiltration Rate

Based on the results of the in-situ infiltration tests and soil laboratory classification tests, we recommend that a design infiltration rate of 0.5 inches/hour be used for design of infiltration structures. It should be noted that the recommended design infiltration rate presented herein is intended for use in design. However, during construction, observations of the subgrade conditions should be made to confirm that the subgrade soils are consistent with the soils analyzed in this report.

5.0 General Limitations

Recommendations contained in this report are based upon the data obtained from the relatively limited number of test borings. This report does not reflect conditions that may occur between the points investigated, or between sampling intervals in test borings. The nature and extent of variations between test borings and sampling intervals may not become evident until the course of construction. Therefore, it is essential that on-site observations of subgrade conditions be performed during the construction period to determine if re-evaluation of the recommendations in this report must be made. It is critical to the successful completion of this project that GeoCapitol be retained during construction to observe the implementation of the recommendations provided herein.

This report has been prepared to aid in the evaluation of the site and to assist your office and the design professionals in the design of this project. It is intended for use with regard to the specific project as described herein. Changes in proposed construction, grading plans, etc. should be brought to our attention so that we may determine any effect on the recommendations presented herein.

An allowance should be established for additional costs that may be required for foundation and earthwork construction as recommended in this report. Additional costs may be incurred for various reasons including wet fill materials, soft subgrade conditions, unexpected groundwater problems, rock excavation, etc.

This report should be made available to bidders prior to submitting their proposals to supply them with facts relative to the subsurface conditions revealed by our investigation and the results of analyses and studies that have been performed for this project. In addition, this report should be given to the successful contractor and subcontractors for their information only.

We recommend the project specifications contain the following statement: "A geotechnical engineering report has been prepared for this project by GeoCapitol Engineering LLC This report is for informational purposes only and should not be considered part of the contract documents. The opinions expressed in this report are those of the geotechnical engineer and represent their interpretation of the subsoil conditions, tests and results of analyses that they performed. Should the data contained in this report not be adequate for the contractor's purposes, the contractor may make their own investigations, tests and analyses prior to bidding."

This report was prepared in accordance with generally accepted geotechnical engineering practices. No warranties, expressed or implied, are made as to the professional services included in this report.

We appreciate the opportunity to be of service for this project. Please contact the undersigned if you require clarification of any aspect of this report.

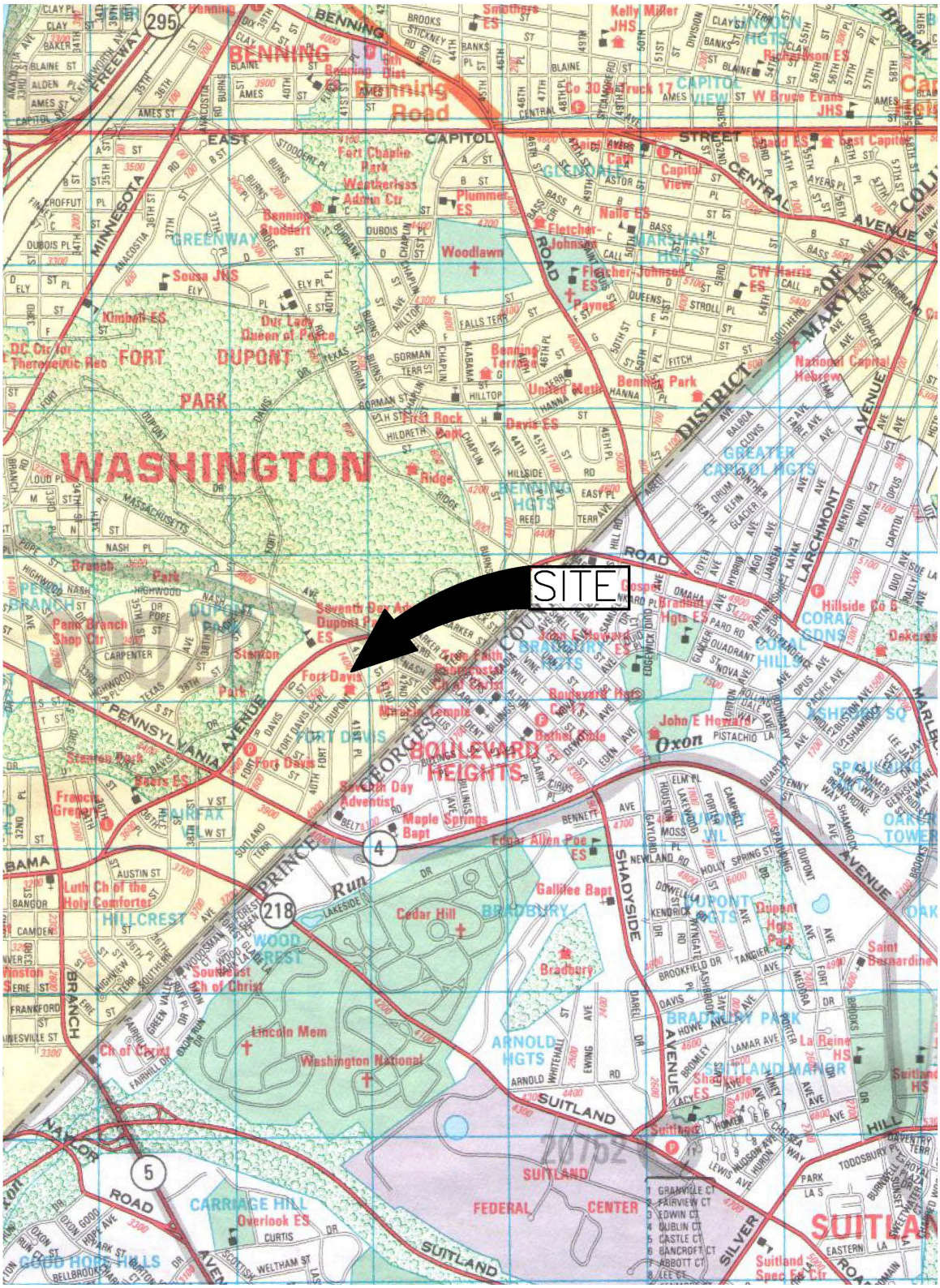
Sincerely,

GEOCAPITOL ENGINEERING LLC

Ashley Hogan, PG
Project Geologist

Daniel F. Gradishar, PE
Principal Engineer

PM/AH/MH/DG/kf
G:\PROJECTS\DC 14016, Fort Davis Playground\Final\Geotechnical Report - Fort Davis.docx

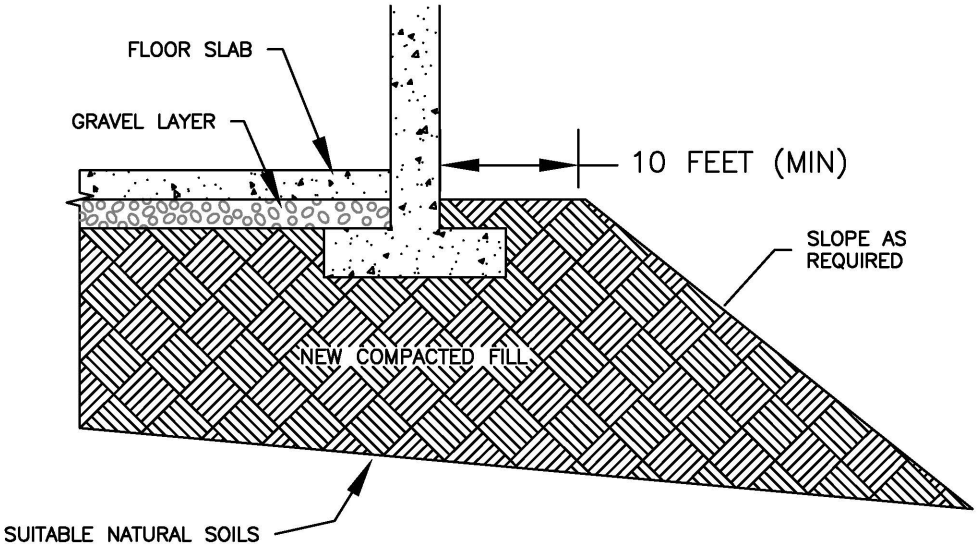


GeoCapitol Engineering LLC
4910 Massachusetts Avenue NW, Suite 206
Washington, DC 20016 202-375-7900

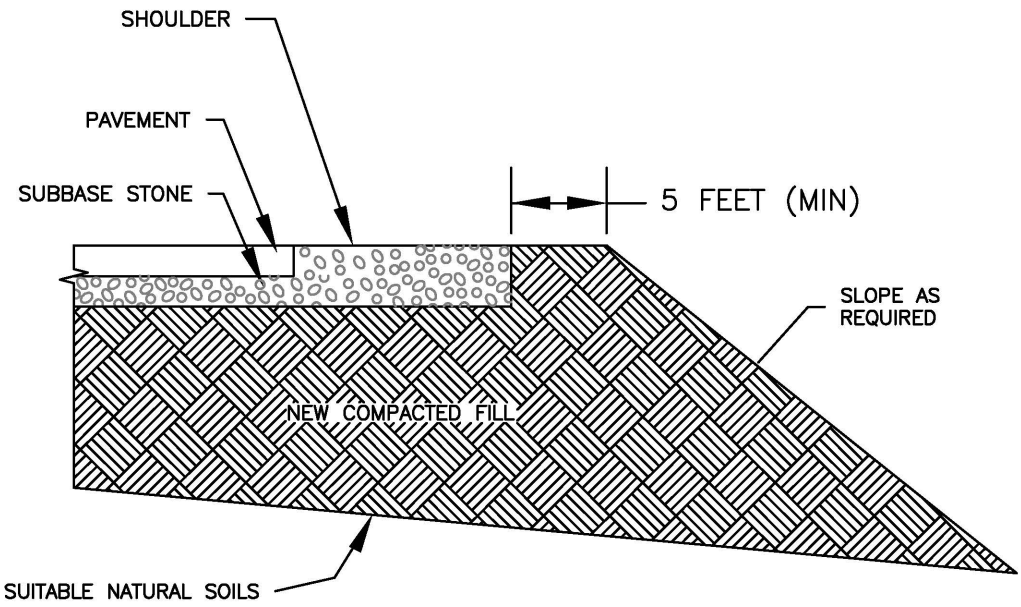
FORT DAVIS PLAYGROUND
1400 41ST STREET SE, WASHINGTON DC

SITE VICINITY MAP	Scale: N.T.S.	Fig. 1
Date: AUGUST 2014	Checked By: D.F.G.	Project No.: DC14016

FOR BUILDINGS:



FOR PAVEMENTS:



N:\CAD\ENG DETAILS\FILL RECS\CSF DIAGRAM (BUILDING & PAVEMENT).DWG

GeoCapitol Engineering LLC
4910 Massachusetts Ave. NW, Suite 206
Washington, DC 20016 202-375-7900

FORT DAVIS PLAYGROUND 1400 41ST STREET SE, WASHINGTON, DC			
COMPACTED STRUCTURAL FILL DIAGRAM		Scale: N.T.S.	Fig. 2
Date: AUGUST 2014	Checked By: D.F.G.	Project No.: DC14016	

Appendix A
Subsurface Investigation

Subsurface Investigation Procedures (1 page)

Identification of Soil (1 page)

Hand Auger Boring Logs (6 pages)

Boring Location Plan, Figure 3 (1 page)

GeoCapitol Engineering LLC

Subsurface Investigation Procedures

1. Hand auger borings were advanced using a two inch diameter auger attached to steel rods and handle extensions. The auger is manually advanced from the ground surface with excavated soil removed from the borehole with each pass of the auger.

2. Classification of soil is by visual inspection and is in accordance with the Unified Soil Classification System. Soil classification symbols are in accordance with ASTM D-2488 by visual observation.

3. Estimated groundwater levels are indicated on the log. These are only estimates from available data and may vary with precipitation, porosity of soil, site topography, etc.

4. Sampling data presents Dynamic Cone Penetration (DCP) values for 1-¾ inch intervals. Testing is performed by driving a 1-¾ inch diameter penetration cone with a 15-pound hammer free falling 20 inches. The number of blows required to drive the cone for an interval of 1-¾ inches is recorded. The cone was generally driven for three intervals at each test depth, with the first interval considered a seating interval

5. The logs and related information depict subsurface conditions at the specific locations and at the particular time when drilled. Soil conditions at other locations may differ from conditions occurring at the test locations. Also, the passage of time may result in a change in the subsurface conditions at the test locations.

6. The stratification lines represent the approximate boundary between soil types as determined in the sampling operation. Some variation may be expected vertically between samples taken. The soil profile, water level observations, and penetration resistances presented on the logs have been made with reasonable care and accuracy and must be considered only an approximate representation of subsurface conditions to be encountered at the particular locations.

7. Refusal depths on the hand auger logs are the depths at which obstructions were encountered and the hand auger could no longer be advance.

8. The test boring stakeout was provided by GeoCapitol personnel using available site plans. Ground surface elevations were estimated, if available, from topographic information contained on the site plan provided to us and should be considered approximate. If the risk related to using approximate boring locations and elevations is unacceptable, we recommend an as-drilled survey of boring locations and elevations be completed by a licensed surveyor.

GeoCapitol Engineering LLC

Identification of Soil

I. DEFINITION OF SOIL GROUP NAMES

		ASTM D-2487	Symbol	Group Name
Coarse-Grained Soils More than 50% retained on No. 200 sieve	**Gravels** More than 50% of coarse fraction retained on No. 4 sieve	Clean Gravels Less than 5% fines	***GW***	WELL GRADED GRAVEL
			GP	POORLY GRADED GRAVEL
		Gravels with Fines More than 12% fines	***GM***	silty GRAVEL
			GC	clayey GRAVEL
	Sands 50% or more of coarse fraction passes No. 4 sieve	Clean Sands Less than 5% fines	***SW***	WELL GRADED SAND
			SP	POORLY GRADED SAND
		Sands with fines More than 12% fines	***SM***	silty SAND
			SC	clayey SAND
Fine-Grained Soils 50% or more passes the No. 200 sieve	**Silts and Clays** Liquid Limit less than 50	Inorganic	***CL***	LEAN CLAY
			ML	SILT
		Organic	***OL***	ORGANIC CLAY
				ORGANIC SILT
	Silts and Clays Liquid Limit 50 or more	Inorganic	***CH***	FAT CLAY
			MH	ELASTIC SILT
		Organic	***OH***	ORGANIC CLAY
				ORGANIC SILT
Highly Organic Soils	Primarily organic matter, dark in color, and organic odor		***PT***	PEAT

II. DEFINITION OF MINOR COMPONENT PROPORTIONS

Minor Component	Approximate Percentage of Fraction by Weight
Gravelly, Sandy (adjective)	30% or more coarse grained
Sand, Gravel (with)	15% to 29% coarse grained
Silt, Clay (with)	5% to 12% fine grained

III. GLOSSARY OF MISCELLANEOUS TERMS

SYMBOLS	Unified Soil Classification Symbols are shown above as group symbols. Use "A" Line Chart for laboratory identification. Dual symbols are used for borderline classification.
BOULDERS & COBBLES	Boulders are considered pieces of rock larger than 12 inches, while cobbles range from 3 to 12 inches.
DISINTEGRATED ROCK	Residual rock material with a standard penetration test (SPT) resistance between 60 blows per foot and refusal.
ROCK	Rock material with a standard penetration test (SPT) resistance of 100 blows for 2 inches or 50 blows for 0 inches, or less penetration
DECOMPOSED ROCK	Residual rock material exhibiting rock-like properties that can be excavated by backhoe equipment. Similar to Disintegrated Rock, but cannot be classified as such because SPT N-Values were not obtained.
ROCK FRAGMENTS	Angular pieces of rock, distinguished from rounded transported gravel, which have separated from original vein or strata and are present in a soil matrix.
QUARTZ	A hard silicate mineral often found in residual soils. Only used when describing residual soils.
CEMENTED SAND	Usually localized rock-like deposits within a soil stratum composed of sand grains cemented by calcium carbonate, iron oxide, or other minerals. Commonly encountered in Coastal Plain sediments, primarily in the Potomac Group sands (Kps).
MICA	A plate-like phyllosilicate mineral found in many rocks, and in residual or transported soil derived there from.
ORGANIC MATERIALS (Excluding Peat)	Topsoil - Surface soils that support plant life and contain organic matter. Lignite - Hard, brittle decomposed organic matter with low fixed carbon content (a low grade of coal).
FILL	Man made deposit containing soil, rock, and other foreign matter.
PROBABLE FILL	Soils which contain no visually detected foreign matter but which are suspect with regard to origin.
LAYERS	½ to 12 inch seam of minor soil component.
COLOR	Two most predominant colors present should be described.
MOISTURE CONDITIONS	Wet, moist, or dry to indicate visual appearance of specimen.

GeoCapitol Engineering LLC

4910 Massachusetts Avenue
Washington DC

202-375-7900
fax

PROJECT:	LOGGED BY:	BORING NUMBER:
Fort Davis Playground	**P. Michalski**	**HA-1**
LOCATION:	DRILLING CONTRACTOR:	SHEET 1 OF 1
1400 41st Street SE, Washington, DC	**CeoCapitol Engineering, Inc.**	
OWNER/CLIENT:	DRILLER:	DATES DRILLED:
Studio 39 Landscape Architecture, P.C.	**P. Michalski**	**7/21/14 - 7/21/14**
PROJECT NUMBER: / GROUND SURFACE ELEVATION (ft):	DRILLING METHOD:	OFFSET NOTES:
DC14016 / **285.0 ±**	**Hand Auger**	

ELEV. (ft)	DEPTH (ft)	SAMPLE TYPE	STRATUM	GRAPHIC	MATERIAL DESCRIPTION	SOIL: DCP BLOW COUNTS	SOIL: Geoprobe Pen. (in)
285.0					Topsoil = 0.25ft.		
284.8			A		*Fill*, brown, silty SAND, with gravel, moist, **SM**	26+36+29	
					Hand Auger Refusal at 1.5 ft		
	5						

GROUND WATER LEVELS:

NOT ENCOUNTERED DURING DRILLING

SAMPLE TYPES:

▼ Dynamic Cone Penetrometer

REMARKS:

THE STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARIES. THE TRANSITION MAY BE GRADUAL.

BOREHOLE/TEST PIT LOGS.GPJ TRAINING 8_14A.GPJ 7/30/14

GeoCapitol Engineering LLC
4910 Massachusetts Avenue
Washington DC
202-375-7900
fax

PROJECT:	LOGGED BY:	BORING NUMBER:
Fort Davis Playground	**P. Michalski**	**HA-2**
LOCATION:	DRILLING CONTRACTOR:	SHEET 1 OF 1
1400 41st Street SE, Washington, DC	**CeoCapitol Engineering, Inc.**	
OWNER/CLIENT:	DRILLER:	DATES DRILLED:
Studio 39 Landscape Architecture, P.C.	**P. Michalski**	**7/21/14 - 7/21/14**
PROJECT NUMBER: / GROUND SURFACE ELEVATION (ft):	DRILLING METHOD:	OFFSET NOTES:
DC14016 / **294.0 ±**	**Hand Auger**	

ELEV. (ft)	DEPTH (ft)	SAMPLE TYPE	STRATUM	GRAPHIC	MATERIAL DESCRIPTION	SOIL: DCP BLOW COUNTS	SOIL: Geoprobe Pen. (in)	SOIL: MC (%)
294.0					Topsoil = 0.25ft.			
293.8					*Fill*, brown, silty SAND, with gravel, moist, **SM**			
293.0		▼			*Fill*, red brown, clayey SAND, with gravel, moist, **SC**	6+12+12		
292.0		▼	A		*Fill*, brown, gravelly LEAN CLAY, with sand, moist, **CL**	7+9+13		
		▼				35+32+37		
		▼				12+19+21		13.4
	5				Hand Auger Refusal at 4.6 ft			

GROUND WATER LEVELS:

NOT ENCOUNTERED DURING DRILLING

SAMPLE TYPES:

▼ Dynamic Cone Penetrometer

REMARKS: Offset once.

THE STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARIES. THE TRANSITION MAY BE GRADUAL.

BOREHOLE/TEST PIT LOGS.GPJ TRAINING 8_14A.GPJ 7/30/14

GeoCapitol Engineering LLC
4910 Massachusetts Avenue
Washington DC
202-375-7900
fax

PROJECT:	LOGGED BY:	BORING NUMBER:
Fort Davis Playground	**P. Michalski**	**HA-3**
LOCATION:	DRILLING CONTRACTOR:	SHEET 1 OF 1
1400 41st Street SE, Washington, DC	**CeoCapitol Engineering, Inc.**	
OWNER/CLIENT:	DRILLER:	DATES DRILLED:
Studio 39 Landscape Architecture, P.C.	**P. Michalski**	**7/21/14 - 7/21/14**
PROJECT NUMBER: / GROUND SURFACE ELEVATION (ft):	DRILLING METHOD:	OFFSET NOTES:
DC14016 / **297.0 ±**	**Hand Auger**	

ELEV. (ft)	DEPTH (ft)	SAMPLE TYPE	STRATUM	GRAPHIC	MATERIAL DESCRIPTION	SOIL: DCP BLOW COUNTS	SOIL: Geoprobe Pen. (in)
297.0					*Fill*, red brown, clayey SAND, with gravel, moist, **SC**		
		▼	A			28+56+85	
	▽	▼				13+25+50/0	
					Hand Auger Refusal at 2.6 ft		
	5						

GROUND WATER LEVELS:

▽ ENCOUNTERED: 2.0 ft 2.0 295.0

SAMPLE TYPES:

▼ Dynamic Cone Penetrometer

REMARKS: Irrigation system may account for encountered water at 2.0 ft.

THE STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARIES. THE TRANSITION MAY BE GRADUAL.

BOREHOLE/TEST PIT LOGS.GPJ TRAINING 8_14A.GPJ 7/30/14

GeoCapitol Engineering LLC
4910 Massachusetts Avenue
Washington DC
202-375-7900
fax

PROJECT:	LOGGED BY:	BORING NUMBER:
Fort Davis Playground	**P. Michalski**	**HA-4**
LOCATION:	DRILLING CONTRACTOR:	SHEET 1 OF 1
1400 41st Street SE, Washington, DC	**CeoCapitol Engineering, Inc.**	
OWNER/CLIENT:	DRILLER:	DATES DRILLED:
Studio 39 Landscape Architecture, P.C.	**P. Michalski**	**7/21/14 - 7/21/14**
PROJECT NUMBER: / GROUND SURFACE ELEVATION (ft):	DRILLING METHOD:	OFFSET NOTES:
DC14016 / **285.0 ±**	**Hand Auger**	

ELEV. (ft)	DEPTH (ft)	SAMPLE TYPE	STRATUM	GRAPHIC	MATERIAL DESCRIPTION	SOIL: DCP BLOW COUNTS	SOIL: Geoprobe Pen. (in)
285.0			A		*Fill*, brown, silty SAND, moist, **SM**	10+26+50/0	
					Hand Auger Refusal at 1.5 ft		
	5						

GROUND WATER LEVELS:

NOT ENCOUNTERED DURING DRILLING

SAMPLE TYPES:

▼ Dynamic Cone Penetrometer

REMARKS: Offset twice.

BOREHOLE/TEST PIT LOGS.GPJ TRAINING 8_14A.GPJ 7/30/14

THE STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARIES. THE TRANSITION MAY BE GRADUAL.

GeoCapitol Engineering LLC
4910 Massachusetts Avenue
Washington DC
202-375-7900
fax

PROJECT:	LOGGED BY:	BORING NUMBER:
Fort Davis Playground	**P. Michalski**	**HA-5**
LOCATION:	DRILLING CONTRACTOR:	SHEET 1 OF 1
1400 41st Street SE, Washington, DC	**CeoCapitol Engineering, Inc.**	
OWNER/CLIENT:	DRILLER:	DATES DRILLED:
Studio 39 Landscape Architecture, P.C.	**P. Michalski**	**7/21/14 - 7/21/14**
PROJECT NUMBER: / GROUND SURFACE ELEVATION (ft):	DRILLING METHOD:	OFFSET NOTES:
DC14016 / **267.0**	**Hand Auger**	

ELEV. (ft)	DEPTH (ft)	SAMPLE TYPE	STRATUM	GRAPHIC	MATERIAL DESCRIPTION	SOIL: DCP BLOW COUNTS	SOIL: Geoprobe Pen. (in)	SOIL: MC (%)
267.0					*Fill*, brown, clayey SAND, with gravel, moist, **SC**			
266.0		▼			Red brown	5+6+6		
		▼				7+10+9		11.5
		▼				11+16+15		
		▼				7+12+11		
	5				Hand Auger Refusal at 4.5 ft			

GROUND WATER LEVELS:

NOT ENCOUNTERED DURING DRILLING

SAMPLE TYPES:

▼ Dynamic Cone Penetrometer

REMARKS:

THE STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARIES. THE TRANSITION MAY BE GRADUAL.

BOREHOLE/TEST PIT LOGS.GPJ TRAINING 8_14A.GPJ 7/30/14

GeoCapitol Engineering LLC

4910 Massachusetts Avenue
Washington DC

202-375-7900
fax

PROJECT:	LOGGED BY:	BORING NUMBER:
Fort Davis Playground	**M. Hogan**	**HA-6**
LOCATION:	DRILLING CONTRACTOR:	SHEET 1 OF 1
1400 41st Street, SE, Washington, DC	**GeoCapitol Engineering LLC**	

OWNER/CLIENT:	DRILLER:	DATES DRILLED:
Studio 39 Landscape Architecture, P.C.	**M. Hogan**	**8/14/14 - 8/14/14**

PROJECT NUMBER:	GROUND SURFACE ELEVATION (ft):	DRILLING METHOD:	OFFSET NOTES:
DC14016	**286.0 ±**	**Hand Auger**	

ELEV. (ft)	DEPTH (ft)	SAMPLE TYPE	STRATUM	GRAPHIC	MATERIAL DESCRIPTION	SOIL: DCP BLOW COUNTS	SOIL: Geoprobe Pen. (in)
286.0					Topsoil = 0.25ft.		
285.8					*Fill*, brown, silty SAND with gravel, moist, with brick, **SM**	12+30/0	
					Auger Refusal at 1.5 ft		
	5						

GROUND WATER LEVELS:

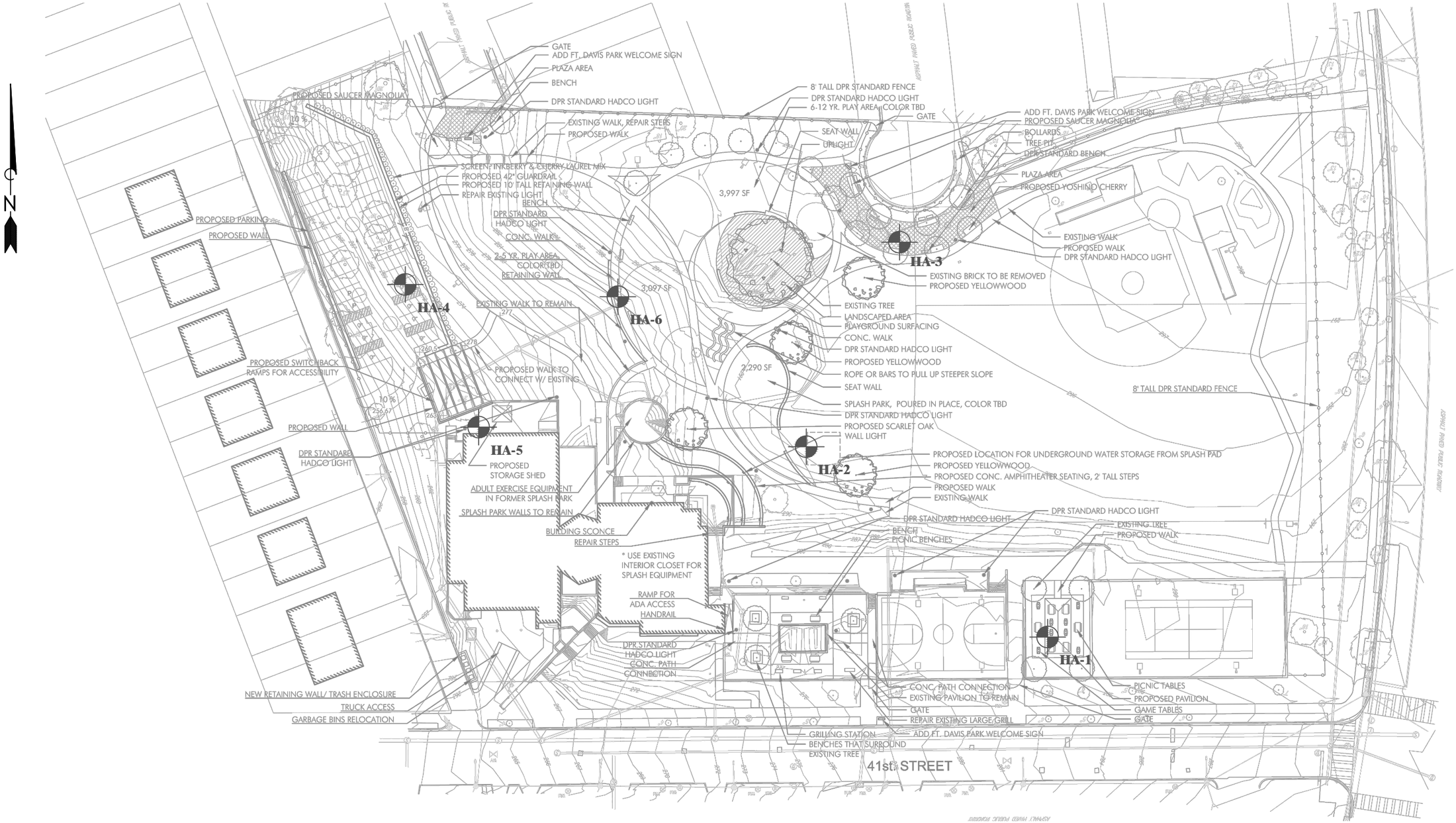
SAMPLE TYPES:

▼ Dynamic Cone Penetrometer

REMARKS: Offset seven times.

BOREHOLE/TEST PIT LOGS HA-6.GPJ TRAINING 8_14A.GPJ 8/15/14

THE STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARIES. THE TRANSITION MAY BE GRADUAL.



L E G E N D

HA-1 APPROXIMATE HAND AUGER BORING LOCATION

GRAPHICAL SCALE

60' 0 60' 120'

GeoCapitol Engineering LLC
4910 Massachusetts Avenue NW, Suite 206
Washington, DC 20016 202-375-7900

FORT DAVIS PLAYGROUND
1400 41ST STREET SE, WASHINGTON, DC

BORING LOCATION PLAN

Scale: AS SHOWN

Fig. 3

Date: AUGUST 2014

Checked By: D.F.G.

Project No.: DC14016

GeoCapitol Engineering LLC

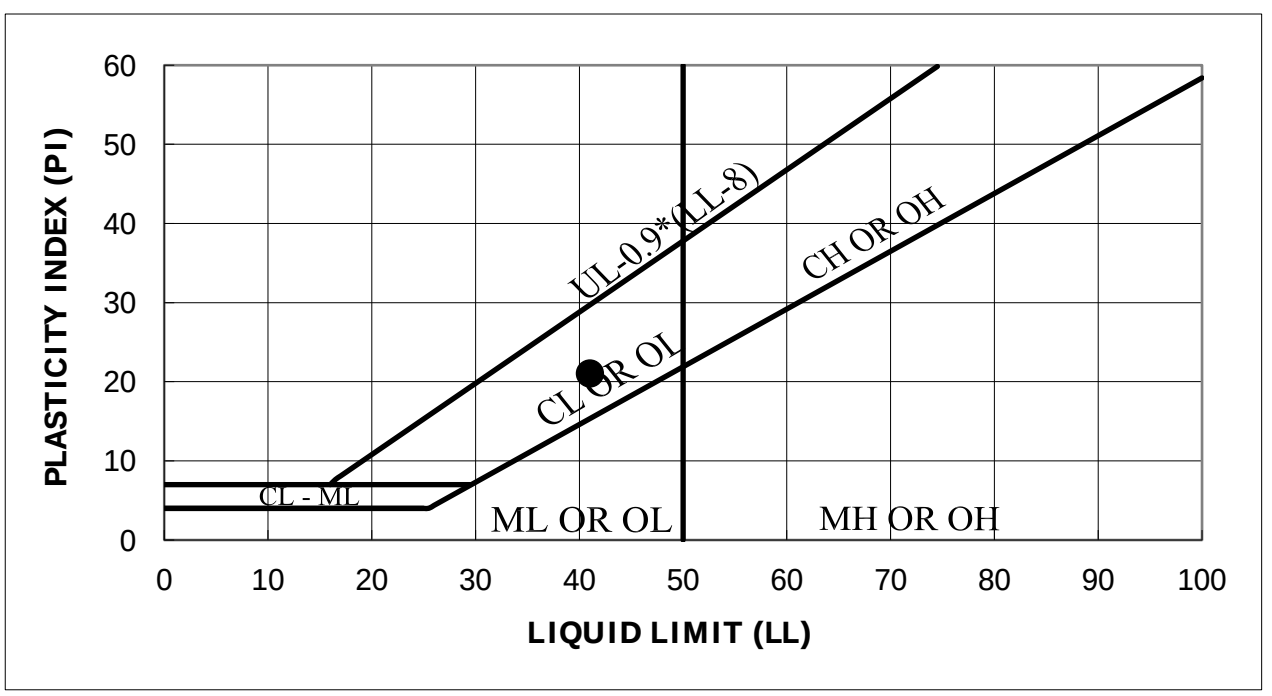
Appendix B
Soil Laboratory Test Results

Gradation Test Data (5 pages)

GeoConcepts Engineering, Inc.

19955 Highland Vista Dr., Suite 170
Ashburn, Virginia 20147
(703) 726-8030
www.geoconcepts-eng.com

LIQUID AND PLASTIC LIMIT - ASTM D4318			
Project No.	DC14016	**Project Name**	Fort Davis Playground
Test Boring No.	B-2	**Depth (Feet)**	4'
Lab Order No.	3325-1	**Date**	7/29/2014



Material Description	LL	PL	PI	% Passing		USCS	w (%)
				#4	#200		
gravelly Lean Clay with sand	41	20	21	75.9	56.7	CL	13.4
Color	Brown		AASHTO Classification			A-7-6	

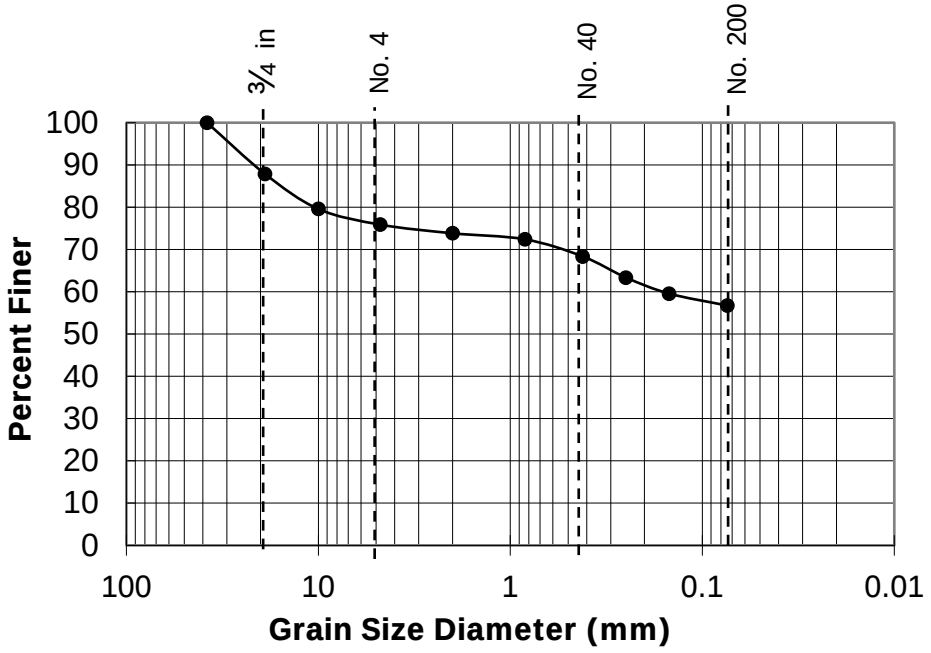
Test Method: ASTM D 4318
Soil Classification by ASTM D2487 and AASHTO M 145

Tested by _____ Reviewed by _____

GeoConcepts Engineering, Inc.

19955 Highland Vista Dr., Suite 170
Ashburn, Virginia 20147
(703) 726-8030
www.geoconcepts-eng.com

GRAIN SIZE ANALYSIS - ASTM D422			
Project No.	DC14016	**Project Name**	Fort Davis Playground
Test Boring No.	B-2	**Depth (Feet)**	4'
Lab Order No.	3325-1	**Date**	7/29/2014



SIEVE	% Passing
1 ½ "	**100**
3/4"	**88**
3/8"	**80**
#4	**76**
#10	**74**
#20	**72**
#40	**68**
#60	**63**
#100	**60**
#200	**57**
Pan	**--**

USCS Group Symbol	**CL**
USCS Group Name	**gravelly Lean Clay with sand**
Cu	**---**
Cc	**---**
LL	**41**
PI	**21**
Gravel	**24.1**
Sand	**19.2**
Fines	**56.7**
AASHTO Classification	**A-7-6**
Color	**Brown**

Test Method: ASTM D 422

Soil Classification by ASTM D2487 and AASHTO M 145

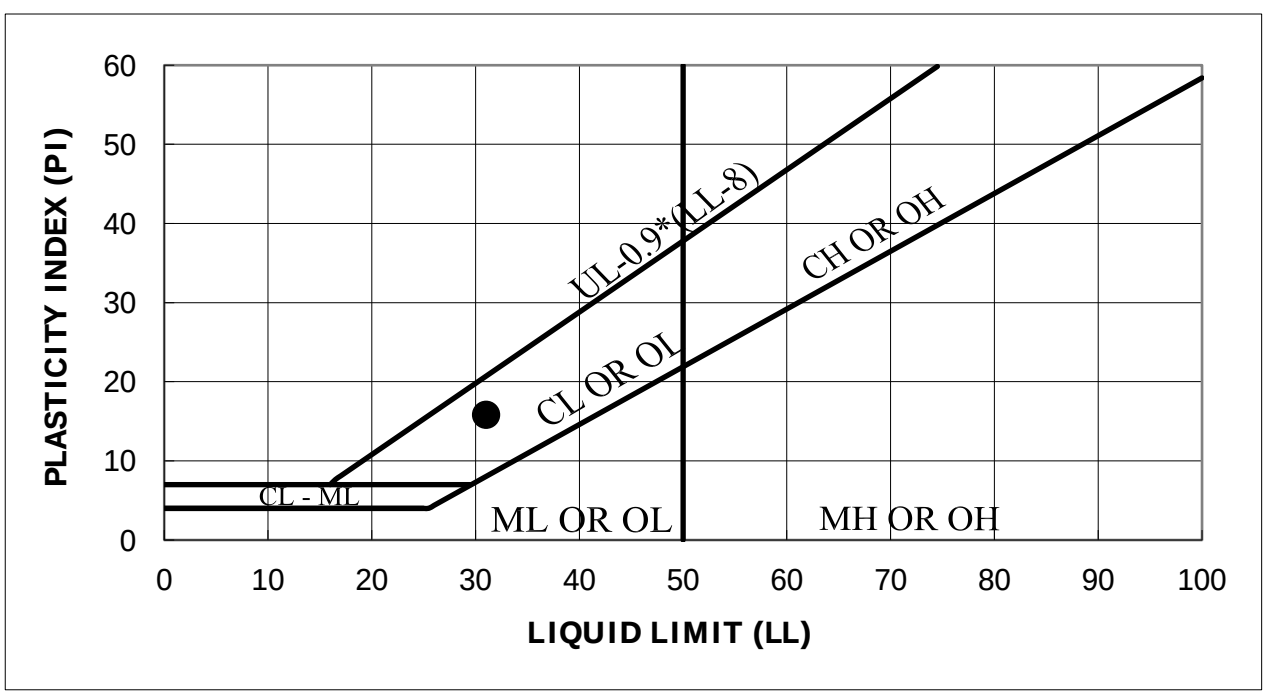
Tested by:_____

Reviewed by: _____

GeoConcepts Engineering, Inc.

19955 Highland Vista Dr., Suite 170
Ashburn, Virginia 20147
(703) 726-8030
www.geoconcepts-eng.com

LIQUID AND PLASTIC LIMIT - ASTM D4318			
Project No.	DC14016	**Project Name**	Fort Davis Playground
Test Boring No.	B-5	**Depth (Feet)**	2'
Lab Order No.	3325-2	**Date**	7/29/2014



Material Description	LL	PL	PI	% Passing		USCS	w (%)
				#4	#200		
CLAYEY SAND with gravel	31	15	16	80.6	18.5	SC	11.5
Color	Brown		AASHTO Classification			A-2-6	

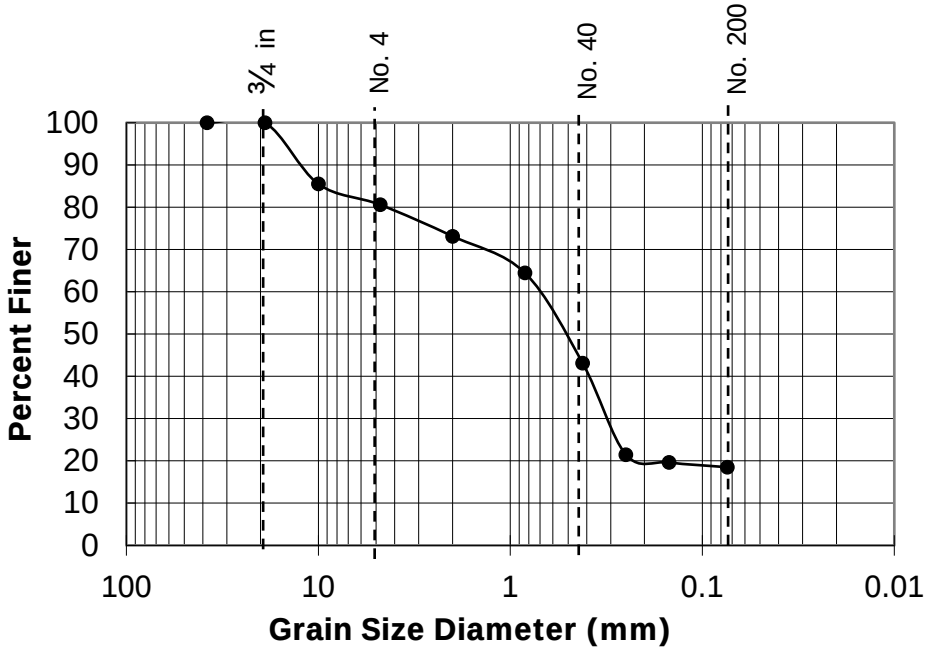
Test Method: ASTM D 4318
Soil Classification by ASTM D2487 and AASHTO M 145

Tested by _____ Reviewed by _____

GeoConcepts Engineering, Inc.

19955 Highland Vista Dr., Suite 170
Ashburn, Virginia 20147
(703) 726-8030
www.geoconcepts-eng.com

GRAIN SIZE ANALYSIS - ASTM D422			
Project No.	DC14016	**Project Name**	Fort Davis Playground
Test Boring No.	B-5	**Depth (Feet)**	2'
Lab Order No.	3325-2	**Date**	7/29/2014



SIEVE	% Passing
1 ½ "	**100**
3/4"	**100**
3/8"	**86**
#4	**81**
#10	**73**
#20	**64**
#40	**43**
#60	**21**
#100	**20**
#200	**18**
Pan	**--**

USCS Group Symbol	**SC**
USCS Group Name	**CLAYEY SAND with gravel**
Cu	**---**
Cc	**---**
LL	**31**
PI	**16**
Gravel	**19.4**
Sand	**62.1**
Fines	**18.5**
AASHTO Classification	**A-2-6**
Color	**Brown**

Test Method: ASTM D 422

Soil Classification by ASTM D2487 and AASHTO M 145

Tested by:_____

Reviewed by:

A&L Eastern Laboratories
7621 Whitepine Road Richmond, Virginia 23237 (804) 743-9401 Fax (804) 271-6446
www.aleastern.com

TEXTURE ANALYSIS

Client :
GEOCAPITOL ENGINEERING LLC
4910 MASSACHUSETTS AVE NW
SUITE 206
WASHINGTON, DC 20016

Grower :
FORT DAVIS PLAYGROUND
DC14016

Farm:

Report No : 14-204-0521
Cust No : 06720
Date Printed : 07/25/2014
Page : 1 of 1
Submitted By : ASHLEY HOGAN
Date Received : 07/23/2014

Lab No	Field ID	Sample Identification	Percent Sand	Percent Silt	Percent Clay	Textural Classification
25844		B2 2	33.6	45.2	21.2	Loam
25846		B2 3	33.6	39.2	27.2	Clay Loam

Analysis prepared by: A&L Eastern Laboratories, Inc.