GOVERNMENT OF THE DISTRICT OF COLUMBIA
DEPARTMENT OF GENERAL SERVICES

SYSTEMIC UPGRADES
AT THE
WARD 1 SENIOR WELLNESS CENTER

Solicitation No.: DCAM-12-CS-0130

Addendum No. 2
Issued: April 2, 2013

This Addendum No. 2 is issued and hereby published on the DGS website on April 2, 2013. Except as modified hereby, the Request for Proposals ("RFP") remains unmodified.

Item #1 Request For Information (RFI's)

See the attached response to Offeror Request for Information (RFI's).

Item #2 Geotechnical Report

The Geotechnical Report is attached as Exhibit 1.

Item #3 Proposal Submission Date Extension

The closing date for receipt of proposals is hereby extended from April 4, 2013 by 2:00 pm EDT to April 11, 2013 by 2:00 pm EDT. Proposals that are hand delivered, should be delivered to the attention of Danyel Riley, Contract Specialist, at the Frank D. Reeves Center, 2000 14th Street, NW 8th Floor, Washington, DC 20009.

By: _____ **Date:** 4/2/13
JW Lantum
Associate Director/ Contracting Officer

- End of Addendum No. 2 -

DCAM-13-CS-0130
SYSTEMIC UPGRADES AT THE WARD 1 SENIOR WELLNESS CENTER

REQUEST FOR INFORMATION (RFI'S)

RESPONSE TO OFFEROR RFI'S:

Q-1. Please confirm that new landscaping is not a requirement of the project as none is shown on the drawings but there are specifications in sections 02230 and 02920. Please confirm expectation that existing landscaping in its existing condition be protected and preserved.

Response: **The project requirements are for the disturbed landscape areas to be restored to match the surrounding undisturbed area. Post-construction conditions should be the same or better than pre-construction conditions. Specification section 02230 provides direction regarding clearing the area to be worked on while section 02920 is provided to document the level of effort required in restoring the landscaping once construction is complete.**

Q-2. Are there any dewatering plans or information available from the original construction? Is a high water table expected?

Response: **The original construction project included a geotechnical report which contains information regarding the water table. The geotechnical report is attached.**

Q-3. Please advise if as-built mechanical, plumbing, and electrical drawings or the original design drawings for the MEP scope will be made available to the successful bidder.

Response: **The original construction project included mechanical, plumbing and electrical drawings. The drawings will be made available to the successful Offeror.**

Q-4. Please advise if it is acceptable to provide locally fabricated mesh security screens that meet the design requirements of the specified product.

Response: **The mesh security screen noted as the basis of design has been selected because it is made by the same manufacturer as the window. Inasmuch as color, fit and performance requires consistency with the original construction, it is recommended that the basis of design be followed.**

Q-5. Please advise on intent to remove back flow preventor and cap off. Where shall it be reconnected? Isn't it required for the fire line?

Response: **The existing back flow preventor will not be required because of the new sanitary routing pattern/new sewage ejector pump. The existing back flow preventor in question is tied to the existing sanitary piping. The fire water piping is not addressed in this project.**

Q-6. After separating the sanitary piping from the upper floors and capping off at basement level, how shall the upper level sanitary piping discharge from the building? Is this the purpose of the new 4" piping from the existing 5" sanitary pipe in the mechanical room to the sanitary pipe in the telecom/com closet – storage room B09/B09A? Please advise.

Response: **After separating the sanitary piping from the upper floors and capping off at the basement level, the upper floor piping will be connected to the new 4" sanitary line at Storage Room B09 and Tele/Com Closet 09A. The 4" sanitary piping will, in turn, be connected to the existing 5" sanitary piping and be discharged out of the building.**

GEOTECHNICAL REPORT

SENIOR WELLNESS CENTER
3531-3537 GEORGIA AVENUE
NORTHWEST WASHINGTON, D.C.

Prepared for

Lance Bailey & Associates, Inc.
7961 Eastern Avenue, Suite 200
Silver Spring, Maryland

Attn: Mr. Ansar Burney

Prepared by

THOMAS L. BROWN ASSOCIATES, P.C.
Washington, D.C.

August 29, 2005

THOMAS L. BROWN ASSOCIATES, PC
Consulting Engineers

1400 EYE STREET, NW, SUITE 440
WASHINGTON, D.C. 20005
D.C. (202) 387-0022
FAX # (202) 682-1367

THOMAS L. BROWN, CWD, P.E., President

August 29, 2005

Lance Bailey & Associates, Inc.
7961 Eastern Avenue, Suite 200
Silver Spring, Maryland 20910

Attn: Mr. Ansar Burney
Project Architect

Re: Senior Wellness Center
3531-3537 Georgia Avenue, N.W.
Washington, DC.

Dear Mr. Burney:

Pursuant to your authorization, we have performed a geotechnical study in support of your design efforts on the referenced project. The following report summarizes the results of our subsurface explorations and laboratory testing and presents recommendations for the geotechnical aspects of the project.

If you have any questions regarding this report or when we can be of further assistance on this or other projects, please do not hesitate to call us.

Yours very truly,

THOMAS L. BROWN ASSOCIATES, P.C.

for Rolex Njuguna
Staff Engineer

Somba Ndeti, P.E.
Vice President

DISTRICT OF COLUMBIA
SOMBA NDETI
No. 10429
REGISTERED
PROFESSIONAL ENGINEER

Terry Knox
Project Engineer

SN:tk:nrw
TL.B. Project Number 05-004-PC
K:\Shared\PROJECTS\Senior Wellness Center\Senior Wellness Ctr-Geotech Report.Doc

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ATTACHMENTS:

1.0 PROJECT DESCRIPTION

The Office on Aging of the District of Columbia plans to develop a senior wellness center in Ward One of Washington, DC. The proposed center shall be located on a government-owned parcel of land measuring 6,600 square feet and located at 3531-3537 Georgia Avenue in the northwest quadrant of Washington, D.C. A Project Location Map presented as Drawing Number 1 shows the relative location of the site. Lance Bailey & Associates, Inc. (LBA) of Silver Spring, MD is the Architect for the project and is coordinating the design and preparation of construction documents for this project. As a sub-consultant to LBA, Thomas L. Brown Associates, PC (TLB) of Washington, DC provided the requisite geotechnical services in support of their efforts. This study included an investigation of the subsurface conditions for the design of foundation elements of the proposed structure.

The plan is to construct a three story structure measuring approximately 3,500 square feet per floor with an elevator near the northwest corner of the building. Finished floor elevations have not been provided to us but plans call for a storage cellar below the first floor of the northeast quadrant of the structure. That would place the lowest floor approximately 8.0 feet below surface grades. The row houses that currently exist on the project site shall be demolished to facilitate construction of the Senior Wellness Center.

A limited geotechnical study comprising four (4) borings was performed to characterize the site for the design of foundation elements, walls and other geotechnical related issues. The borings were drilled in the existing open areas outside the building footprint. Drawing Number 2 is a Site Exploration Plan and shows the building footprint in relation to Georgia Avenue, NW and location of the borings. The ground elevation levels at the boring locations were estimated from a layout drawing of the site provided by LBA.

1.1 Scope of Services

TLB's scope of services consisted of:

- Performing field exploratory studies at discrete locations designated by Borings B-1 through B-4 located outside the planned footprint of the proposed structure as shown in Drawing Number 2.
- Performing visual classification of the retrieved soil samples during the field explorations.
- Performing laboratory tests on representative samples.
- Analyzing soil and groundwater conditions encountered as they pertain to the new building.
- Preparing this report describing the conditions encountered and providing recommendations for the geotechnical-related aspects of the proposed structure.

The following paragraphs summarize the activities, conclusions, and recommendations resulting from TLB's efforts.

2.0 FIELD INVESTIGATIONS

2.1 Borings

TLB's field Explorations included:

- Staking out the four test borings at the site and obtaining the necessary utility verification and clearances with the relevant agencies prior to commencing any intrusive explorations.
- Mobilizing a truck mounted Acker AD-2 drill rig and the necessary equipment to perform the planned field explorations.
- Drilling test borings (i.e. B-1 through B-4) at discrete locations within the project site but outside the footprint of the proposed building. The relative locations of the completed borings are shown on the Site Exploration Plan presented as Drawing Number 2.
- Performing Standard penetration tests (SPT) in accordance with ASTM D 1586 typically at 2.5-foot intervals for the top 10-feet and at 5.0 foot intervals thereafter. The four borings were advanced to a depth of 25.0 feet each.
- Collecting bulk samples of representative material from select borings.
- Determining depth to groundwater table during and upon completion of drilling.

Following the completion of our explorations, each of the borings was backfilled with auger cuttings and paved areas were patched with cold asphalt.

3.0 SUBSURFACE CONDITIONS

Logs describing the subsurface conditions encountered in each boring are presented as 'Records of Soil Exploration' in Appendix A. The descriptive terminology used to classify the soils encountered during this study is summarized on the first page of Appendix A. The SPT N-values are used in layer descriptions in the following paragraphs as well as in the geotechnical analysis and design to develop the recommendations that are presented in subsequent paragraphs.

3.1 Soil Conditions

As indicated on the Records of Soil Exploration, existing fills or possibly disturbed soils blanket the site. Beneath those fills, sand and/or clay with some silt of varying consistencies were logged to the bottoms of the borings. The soil conditions are grouped and described as follows:

Existing Fill/Possibly Disturbed Soils comprised of primarily fine to coarse sand and clay were logged throughout the site to approximate elevations varying between 186.5-feet and 183.0-feet. Fine gravel, some silts, trace brick and concrete, each in varying proportions, were logged within those fills. The SPT N-values within the existing fills characteristically ranged from 7 to 13 blows per foot within the sand fill, indicating loose to medium dense

conditions and from 8 to 13 blows per foot within the clay fill, suggesting medium stiff to stiff consistencies.

Sand with varying amounts of gravel and clay was the predominant soil logged beneath the fills. Those sands were encountered to the termini of Borings B-1 through B-3 and to Elevation 169 feet at Boring B-4. The SPT N-values within the sands varied from 5 to 43 blows per foot, suggesting very loose to dense in-situ conditions.

Clay to Silty Clay layers were encountered at various elevations within the sand in Borings B-1 through B-3. At Boring B-4, clay was logged from Elevation 179 feet to 174 feet and beneath the sand at Elevation 169 feet to the bottom of the boring. The SPT N-values within the clay varied between 9 and 34 blows per foot suggesting medium stiff to hard consistencies.

3.2 Groundwater

Groundwater was observed in Borings B-1, B-2 and B-3 during drilling activities at depths of 20.0 feet, 15.5 feet and 19.0 feet, respectively. Because of the clay soils encountered, the site has the potential of having perched water conditions, which may impact the design and construction of the foundations for the new building. In addition, seasonal and/or long-term fluctuations of the site's groundwater levels should be anticipated.

4.0 LABORATORY TESTING

Representative soil samples obtained during the subsurface investigation were subjected to laboratory testing which included the general index tests of natural moisture content (ASTM D 2216), Atterberg limits (ASTM D 4318) and gradation analysis (ASTM D 422). Appendix B presents a summary of those test results in Table No. B-1, followed by plots of the gradation data.

Laboratory test results indicate that within the clay samples retrieved from a depth of 5.0 feet at Boring B-1 and 10.0 feet at Boring B-4, natural moisture contents were 15.4 percent and 17.7 percent respectively. At Boring B-2, a moisture content of 26.6 percent was recorded for a clay sample taken from a depth of 20.0 feet which is below the ground water level encountered at that boring. Moisture content within the sand samples tested, varied from 9.3 to 21.2 percent. The average natural moisture content for those sands was 15.4 percent.

The liquid limits for the fines within the sands tested at Borings B-1 and B-2 were 33 and 31 respectively. The respective plasticity indexes for those fines were 10 and 7. Within the clay samples tested, the liquid limits ranged from 28 to 74, while the plasticity indexes ranged from 11 to 44.

Gradation analysis test results indicate the coarse grained material encountered at the site had 79 to 100 percent passing the #4 sieve, while 20 to 41 percent passed the #200 sieve. For the clay soil tested, 100 percent passed the #4 sieve and 65 percent passed the #200 sieve.

The remaining soil samples are being temporarily stored in our Glen Burnie, Maryland laboratory and are available for review. Forty-five (45) days following the submittal of this report, however, those samples may be discarded unless other arrangements are made.

5.0 CONCLUSIONS/RECOMMENDATIONS

This geotechnical exploration was conducted to determine how soil and groundwater conditions might impact the design and construction of the foundations for the proposed three story structure. The exploratory borings drilled during this investigation are located outside the proposed building footprint due to lack of access to the proposed building footprint area as the existing structure has not been demolished.

Based on the subsurface conditions encountered to date and laboratory tests that have been performed, marginal to competent soil conditions were encountered at the site. Existing fills with low SPT values ranging from 7 to 9 blows per foot were logged within the top 2.5 to 7.0 feet. If fills are exposed within the building footprint, those fills will require removal from load bearing areas. No foundation loading information or site grading plans were available at the time of this study but the floor level of the planned cellar is anticipated to be at approximately Elevation 182 feet. Given the aforementioned soil conditions and our understanding of the project, nothing should preclude the construction of the building.

5.1 Foundations

It is recommended to use reinforced concrete footings for the support of the proposed structure. Fill soils were the predominant materials logged below the footing elevations in the vicinity of Borings B-1, B-2 and B-4. Those fill soils represented by low N-values of about 9 should be undercut and replaced with at least a 2-foot mat of controlled structural fill or #57 stone. For footings supported on **controlled structural fill,** it is recommended to design them using an **allowable bearing capacity of 2000 psf.** Competent sands with SPT N-values greater than 20 were logged below the anticipated cellar floor elevation in the vicinity of Boring B-3. Footings within that section of the proposed building could be sized based on a **maximum bearing capacity of 3000 psf.**

Stepped down and/or adjacent column footings should be positioned outside of a 45° slope line extending outward from the underside of the nearest adjacent footings. Competent undisturbed natural soil and/or compacted structural fill should exist everywhere within this zone of footing influence. Strict adherence to the 'Earthwork' section of this report is recommended. Regardless of the computed footing sizes, we recommend all continuous footings have a minimum width of 18.0 inches. We also recommend that isolated column footings should have a least plan dimension of 24.0 inches. To preclude damage due to frost or other seasonal factors, all footings should be embedded a minimum of 30.0 inches below finished adjacent grades. Care shall be exercised to ensure that the soils encountered at the founding grade remain dry.

5.2 Slab-on-Grade

The floors for the proposed structure may be designed as slabs-on-grade. It is recommended that the fill soils encountered should be thoroughly proof-rolled. Strict adherence to the 'Earthwork' portion in Section 5.5 of this report is recommended.

It is recommended that a minimum 4.0-inch layer of porous washed stone, consisting of gravel or crushed rock, be placed immediately beneath all at-grade slabs. Surface runoff should be directed away from all structures. A polyethylene membrane or similar vapor barrier should be used to separate the concrete from the porous stone or subgrade. Although no unusual loads are expected, we recommend at-grade concrete slabs be at least lightly reinforced with a medium weight wire mesh. Perimeter footing drains will be required where at-grade slabs are placed below finished exterior grades.

5.3 Retaining Walls

Exterior retaining walls shall be required to support material described by the Boring Data in section 3.1 above. The retaining walls may be as much as 8.0-feet in height. Use of reinforced concrete walls is recommended.

Rigid Walls

Where the concrete walls are restrained at the top (rigid walls), they shall be designed based on at-rest earth pressure conditions. The design of the walls should be based on the supported sands having a friction angle, $\phi = 29$ degrees and a unit weight of 115 pcf. Using those parameters, an at-rest earth pressure coefficient, $\mathbf{k_o}$ **of 0.52** for sand and corresponding **minimum equivalent fluid weight of 60 pcf** is recommended for the design of the rigid walls.

Cantilever Walls

Where cantilever retaining walls are required, they shall be designed based on active earth pressure conditions. The design of the cantilever walls should be based on the supported sands having a friction angle, $\phi = 29$ degrees and a unit weight of 115 pcf. Using those parameters, an active earth pressure coefficient, $\mathbf{k_a}$ **of 0.35** for sand and corresponding **minimum equivalent fluid weight of 40 pcf** is recommended for the design of the cantilever walls. Because footings will be established in mostly sand material, a horizontal friction coefficient of 0.55 is recommended between the concrete and soil to resist sliding.

The recommended earth pressure coefficients and fluid weights assume drained conditions and a horizontal backslope will exist behind the walls. Should sloped backfills be designed for, these parameters will need to be revised to correspond to the slope angle. Should walls be designed for submerged conditions, hydrostatic pressure shall be added to the computed horizontal pressures. Appropriate damp-proofing and vertical drainage board such as TerraDrain, by Webtech, Inc. should be provided for all below grade permanent walls. A gravel filter pack may be used in lieu of the vertical drainage board.

5.4 Temporary Excavation Support

Temporary slopes or support of excavation will be required during excavation, especially during construction of the cellar. The stability of temporary slopes will ultimately depend on the soils exposed during site grading. Preliminarily, it is recommended that no temporary slopes should be graded steeper than 1.5H:1.0V without the review and approval of an Engineer registered in the District of Columbia specializing in geotechnical/foundation engineering.

We recommend all temporary excavation supports be designed for the appropriate active and/or passive earth pressure conditions using active and passive earth pressure coefficients of 0.33 and 3.0 respectively. A unit weight of 115 pcf is recommended for computing lateral earth pressure. Surcharge loads occurring within a horizontal distance equal to the depth of the excavation should also be superimposed on the recommended earth pressure loads. We recommend, however, that the contractor be required to engage a professional engineer registered in the District of Columbia to design and seal the plans and drawings for all of his temporary structures.

5.5 Earthworks

We recommend inspection of all subgrade materials once they are cut to planned subgrade elevations. Existing fill soils should be removed from under footing locations and slab areas. Any deleterious material encountered during excavation should be removed. We recommend the subgrades exposed during construction be proof-rolled and/or densified in-place with an approved roller or other equipment while being inspected by a Geotechnical Engineer or an experienced engineering technician. Any soft or loose zones that are identified which cannot be densified in-place should be undercut to a depth, length and width as directed by inspecting Engineer. Where required, based on poor soils that are identified, we preliminarily recommend a maximum of 24 inches of undercut. Deeper undercuts should be avoided, and we ask that we be extended an opportunity to review those conditions warranting any deeper undercuts before undercutting commences. Undercut volume shall be backfilled to grade with structural fill meeting Unified Soil Classification (USCS) of SC or coarser, compacted with a vibratory compactor, protected and maintained.

Prior to placement of fill materials within the subexcavation, it is recommended to place at the bottom of the excavation a geofabric, such as Mirafi 500X, or equivalent for separation and stabilization. We recommend the structural fill be compacted as follows:

- Structural Fills -- All fills placed directly below or within the zone of influence of any bearing foundation, structural slab or paved area - 95% AASHTO T-180 (ASTM D-1557).

Regardless of the category, we recommend that all site fills be placed in essentially horizontal layers or lifts having a minimum loose lift thickness commensurate with the equipment being utilized to perform the compaction. In no case should those lifts exceed eight (8) inches. Each lift should be uniformly compacted to equal or exceed the specified minimum percentage of the maximum dry unit weight.

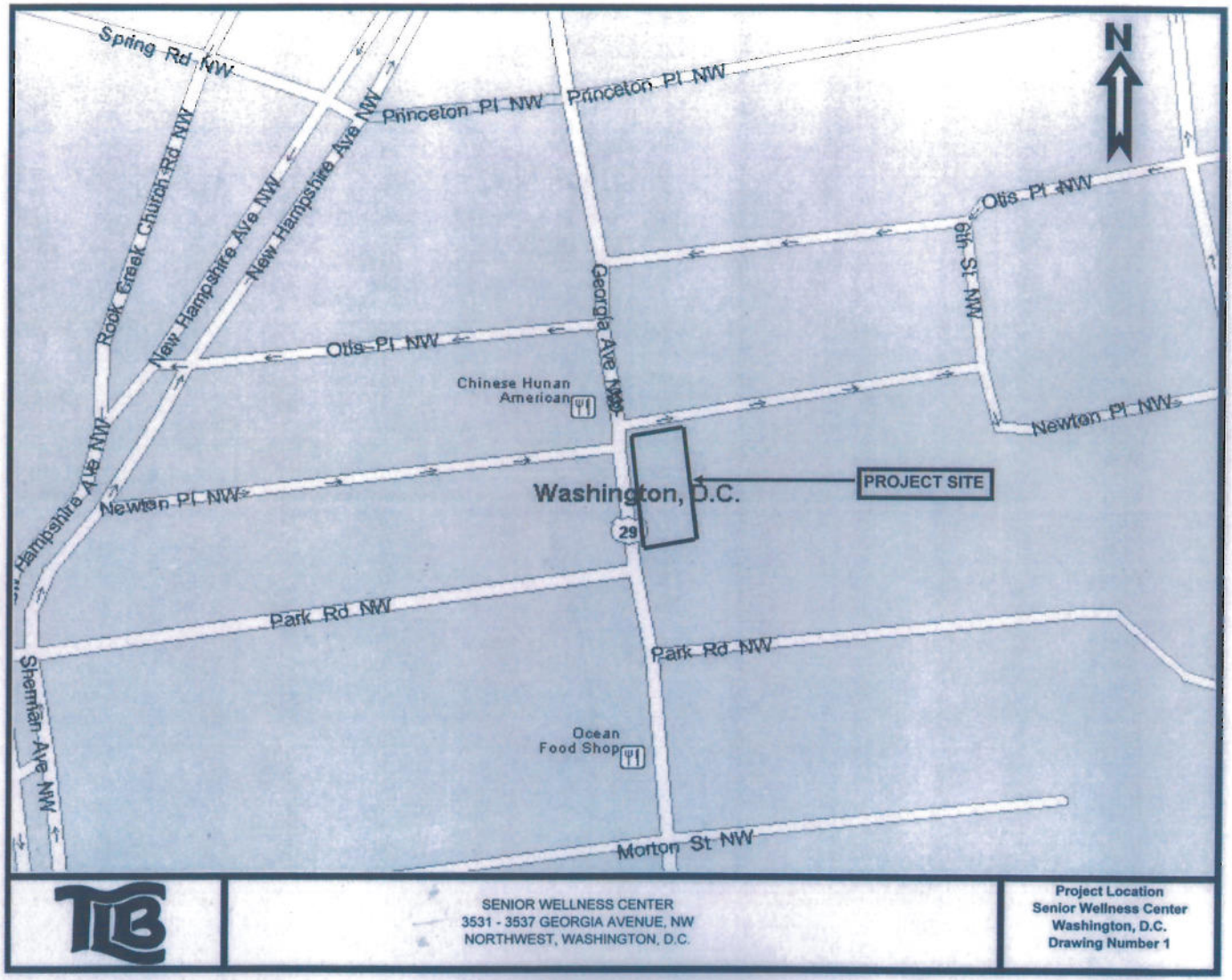
All offsite borrow materials or imported material that may be borrow material, select fill or other approved material shall consist of soils meeting Unified Soil Classification System (USCS) of SC or coarser. All soil materials that fall within the USCS type ML, CL, OL, MH, CH, OH, PT, as well as material containing organic matter, ashes, cinders, refuse, frozen or other unsuitable materials are prohibited for use as backfill. Material used in backfill shall be a well-graded soil-aggregate mixture with a Liquid Limit (LL) not greater than 30 and a maximum Plasticity Index (PI) of 10.

Specifications should require slopes of exposed surfaces be maintained to facilitate surface runoff away from load bearing areas and to prevent ponding of surface water. If ponding of surface water does occur, it should be removed by pumping, ditching or as otherwise directed by the inspecting geotechnical engineer. During periods of anticipated inclement weather, exposed surfaces shall be graded and sealed to preclude infiltration of surface water. Subgrades, which become disturbed due to inclement weather or construction traffic and require over-excavation, should be reworked at no additional cost to the owner.

6.0 LIMITATIONS

All subsurface and field investigations require the extrapolation of limited amounts of data based on general geologic knowledge. This report has been prepared to aid in the evaluation of the site. This report is intended to assist Lance Bailey & Associates, Inc., with the design aspects of the proposed multi-purpose senior wellness center building as well as the earthwork related portions of the project based upon our understanding of the design details, criteria, and utilization of the planned facilities as outlined herein. The water level observations and geologic descriptions presented on the accompanying logs have been made with reasonable care and accuracy, but must be considered only an approximate representation of subsurface conditions to be encountered beyond a particular exploratory location.

We recommend that a Geotechnical Engineer or a technician under his direction be retained during construction to monitor subgrade preparation and construction and to evaluate general construction techniques as they may affect foundations and utilities at the site. The Engineer or technician should be instructed to monitor subsurface conditions encountered during construction to see that those conditions are compatible with the findings of this study. If significant variations are encountered or if the proposed locations or designs are altered, we should be contacted and provided the opportunity to appropriately review and/or modify these recommendations.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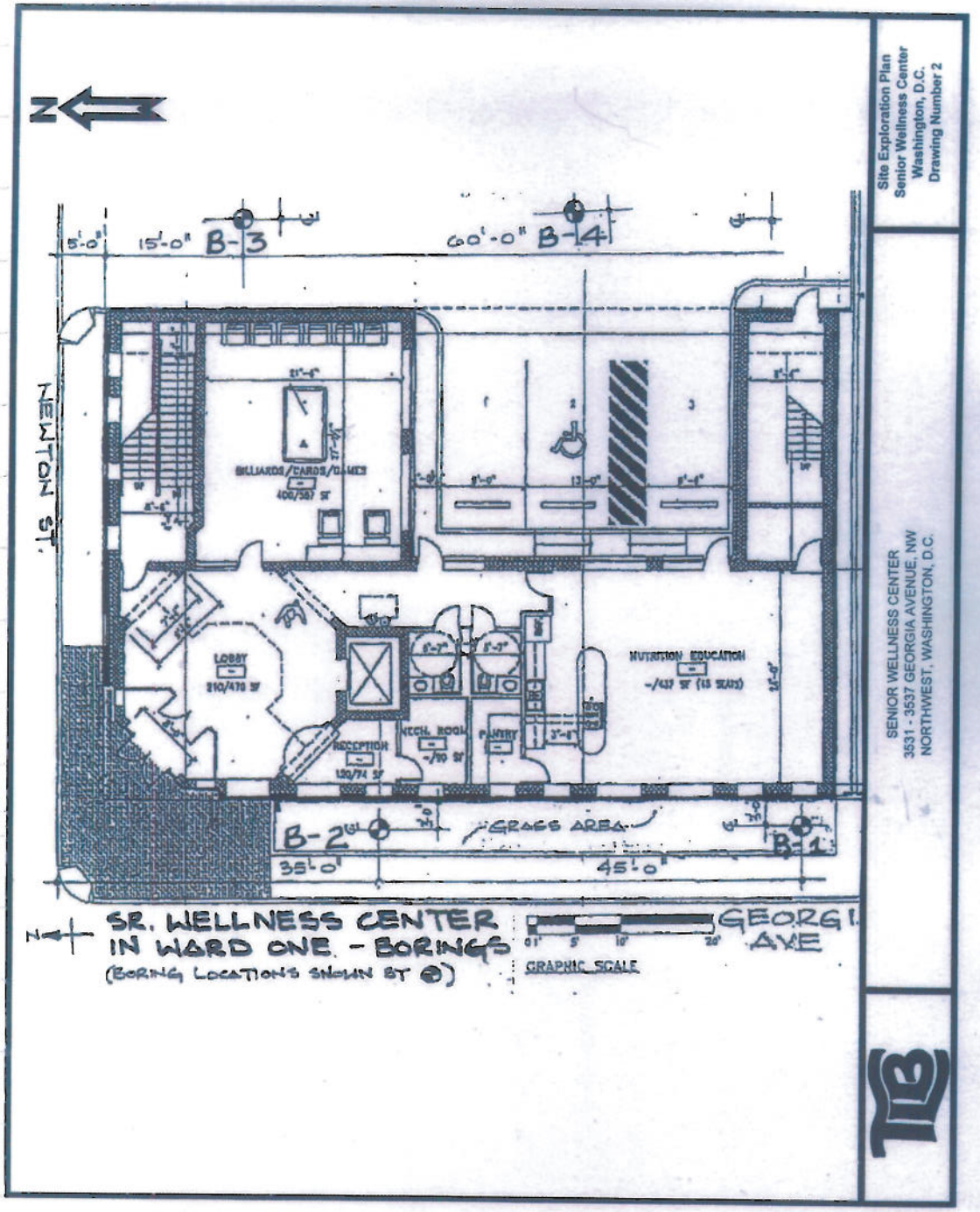
Princeton Pl NW
Princeton Pl NW
N
Rock Creek Church Rd NW
New Hampshire Ave NW
New Hampshire Ave NW
Otis Pl NW
6th St NW
Georgia Ave NW
Otis Pl NW
Chinese Hunan American
Newton Pl NW
Hampshire Ave NW
Newton Pl NW
Washington, D.C.
PROJECT SITE
29
Park Rd NW
Park Rd NW
Sherman Ave NW
Ocean Food Shop
Morton St NW
SENIOR WELLNESS CENTER
3531 - 3537 GEORGIA AVENUE, NW
NORTHWEST, WASHINGTON, D.C.
Project Location
Senior Wellness Center
Washington, D.C.
Drawing Number 1


Site Exploration Plan
Senior Wellness Center
Washington, D.C.
Drawing Number 2
SENIOR WELLNESS CENTER
3531 - 3537 GEORGIA AVENUE, NW
NORTHWEST, WASHINGTON, D.C.
NEWTON ST.
GEORGIA AVE
B-1
B-2
B-3
B-4
5'-0"
15'-0"
60'-0"
35'-0"
45'-0"
GRASS AREA
BILLIARDS/CARDS/GAMES
400/587 SF
LOBBY
210/470 SF
RECEPTION
130/74 SF
MECH. ROOM
-/70 SF
PANTRY
NUTRITION EDUCATION
-/433 SF (15 SEATS)
SR. WELLNESS CENTER
IN WARD ONE - BORINGS
(BORING LOCATIONS SHOWN BY ⊕)
GRAPHIC SCALE

APPENDIX A

RECORDS OF SOIL EXPLORATION

GENERAL CLASSIFICATION SUMMARY FOR SOIL AND ROCK EXPLORATION

SOIL

Particle Size Identification

Boulders		- 12 inch diameter or more
Cobbles		- 3 to 12 inch diameter
Gravel	- Coarse	- 3/4 to 3 inches
	- Fine	- 4.75mm to 3/4 inch
Sand	- Coarse	- 2.00mm to 4.75 mm [Sieve #10 to #4]
	- Medium	- 0.4mm to 2.00mm [Sieve #40 to #10]
	- Fine	- 0.075mm to 0.4mm [Sieve #200 to #40]
Silt/Clay		- less than 0.075mm (Cannot see particles)
Silt		- Atterberg limits plot below "A" line
Clay		- Atterberg limits plot above "A" line

Relative Proportions

Descriptive Term	Percent
Trace	1 - 10
Little	11 - 20
Some	21 - 35
Adjective	36 - 50
Noun	50 or more

COHESIONLESS SOILS

Density	*N-Value*
Very loose	- 5 blows/ft. or less
Loose	- 6 to 10 blows/ft.
Medium Dense	- 11 to 30 blows/ft.
Dense	- 31 to 50 blows/ft.
Very Dense	- 51 blows/ft. or more

COHESIVE SOILS

Consistency	*N-Value*
Very Soft	- 3 blows/ft. or less
Soft	- 4 to 5 blows/ft.
Medium Stiff	- 6 to 10 blows/ft.
Stiff	- 11 to 15 blows/ft.
Very Stiff	- 16 to 30 blows/ft.
Hard	- 31 blows/ft. or more

Classifications on logs are made by visual inspection.

Standard Penetration Test - Driving a 2.0" O.D., 1 3/8" I.D., sampler a distance of 1.0 foot into undisturbed soil with a 140 pound hammer free failing a distance of 30.0 inches. It is customary for us to drive the spoon 6.0 inches of penetration to seat into undisturbed soil, and then perform the test. The number of hammer blows for seating the spoon and making the tests are recorded for each 6.0 inches of penetration on the drill log (Example: 6-8-9). The standard penetration test resistance or "N"-value can be obtained by adding the last two figures (i.e., 8 + 9 = 17 blows/ft.).

Strata Changes - In the column "Soil Descriptions" on the drill log, the horizontal lines represent estimated strata changes.

Groundwater observations were made at the times indicated. Porosity of soil strata, weather conditions, site topography, etc., may cause changes in the water levels indicated on the logs.

ROCK

Rock Quality Designation (RQD) - The sum of the lengths of pieces of recovered core which are greater than four inches in length, expressed as a percentage of the total length of the core run. If the core has been broken by the drilling process, it is considered to be intact provided the broken fragments are cumulatively greater than 4 inches in length. For this investigation, vertical separations which split the core have not been considered discontinuities when determining RQD.

Recovery (REC) - The total length of core recovered expressed as a percentage of the total length of that coring run.

ROCK CLASSIFICATION	RQD	DRILLING METHOD
Decomposed Rock	N/A	Rotary or Auger Drilling with SPT N-value > 100 blows/foot
Weathered/Highly Jointed Rock	0 – 50	Requires Diamond Core Drilling
Moderately Jointed to Jointed	50 – 75	Requires Diamond Core Drilling
Relatively Sound to Sound	75 – 100	Requires Diamond Core Drilling

THOMAS L. BROWN ASSOCIATES, P.C.
Washington, D.C

RECORD OF SOIL EXPLORATION

Contracted With: Lance Bailey & Associates — Boring #: B-1
Project Name: Senior Wellness Center, 3531-3537 Georgia Avenue — Job #: 05-004
Location: Northwest, Washington, D.C.

SAMPLER

Datum: — Hammer Wt.: 140 lb — Hole Diameter: 8 in — Foreman: M. Gray
Surf. Elev.: 190.0 ft — Hammer Drop: 30 in — Rock Core Dia.: N/A — Inspector: R. Njuguna
Date Started: 6/2/05 — Spoon Size: 2 in — Boring Method: HSA — Date Completed: 6/2/05

ELEV. (ft)	SOIL DESCRIPTION Color, Moisture, Density, Plasticity, Size Proportions	STRA. DEPTH (ft)	SOIL SYMBOL	DEPTH SCALE	SAMPLE Cond	Blows/6"	No.	Type	Rec (in)	BORING & SAMPLE NOTES
188.0	Brown, moist, loose, fine to coarse **SAND**, little clay, trace bricks, concrete, **(FILL)**	2.0			D	3-2-5	1	DS	8	1. Water encountered at 20.0 ft. 2. 1 bag sample collected from 2.5 to 10.0 ft. 3. Boring backfilled upon completion.
185.5	Brown, moist, loose, clayey fine to coarse **SAND**, little gravel, concrete, **(FILL)**	4.5			D	3-3-5	2	DS	14	
183.0	Brown, moist, medium stiff, **CLAY**, some fine to medium sand, trace gravel, **(FILL)**	7.0		5	I/D	3-4-4	3	DS	16	
180.5	Brown, moist, medium stiff, **CLAY**, trace fine sand	9.5			I/D	2-3-6	4	DS	18	
177.0	Light brown, moist, medium dense, fine to coarse **SAND**, trace gravel	13.0		10	D	51-22-5	5	DS	10	
168.0	Light brown, wet, very loose, fine to medium **SAND**, trace silt	22.0		15	D	3-3-2	6	DS	16	
165.0	Yellowish brown, gray, moist, medium dense, clayey fine **SAND** **[USCS: SC]**	25.0		20	D	2-4-6	7	DS	4	
	Bottom of Boring at 25.0 ft			25	I/D	7-10-12	8	DS	18	

SAMPLER TYPE
DS - DRIVEN SPLIT SPOON
PT - PRESSED SHELBY TUBE
CA - CONTINUOUS FLIGHT AUGER
RC - ROCK CORE

SAMPLE CONDITIONS
D - DISINTEGRATED
I - INTACT
U - UNDISTURBED
L - LOST

GROUNDWATER DEPTH
AT COMPLETION ____ ft
AFTER ____ HRS. ____ ft
AFTER 24 HRS. ____ ft
CAVED AT 12.0 ft

BORING METHOD
HSA - HOLLOW STEM AUGERS
CFA - CONTINUOUS FLIGHT AUGERS
DC - DRIVING CASING
MD - MUD DRILLING

STANDARD PENETRATION TEST DRIVING 2" OD SAMPLER 1' WITH 140# HAMMER FALLING 30": COUNT MADE AT 6" INTERVALS

RECORD OF SOIL EXPLORATION SENIOR WELLNESS CENTER.GPJ TLB.GDT 8/22/05

THOMAS L. BROWN ASSOCIATES, P.C.
Washington, D.C.

RECORD OF SOIL EXPLORATION

Contracted With: Lance Bailey & Associates — Boring #: B-2
Project Name: Senior Wellness Center, 3531-3537 Georgia Avenue — Job #: 05-004
Location: Northwest, Washington, D.C.

SAMPLER

Datum: — Hammer Wt.: 140 lb — Hole Diameter: 8 in — Foreman: M. Gray
Surf. Elev.: 190.0 ft — Hammer Drop: 30 in — Rock Core Dia.: N/A — Inspector: R. Njuguna
Date Started: 6/2/05 — Spoon Size: 2 in — Boring Method: HSA — Date Completed: 6/2/05

ELEV. (ft)	SOIL DESCRIPTION Color, Moisture, Density, Plasticity, Size Proportions	STRA DEPTH (ft)	SOIL SYMBOL	DEPTH SCALE	SAMPLE Cond	Blows/6"	No.	Type	Rec (in)	BORING & SAMPLE NOTES
188.0	Dark brown, moist, loose, fine to coarse **SAND**, some silty clay, glass, trace roots, **(FILL)** **[USCS: SC-SM]**	2.0			D	2-4-4	1	DS	7	1. Water encountered at 15.5 ft. 2. Boring backfilled upon completion.
185.5	Brown, moist, medium stiff, **CLAY**, little fine to coarse sand, trace gravel, **(FILL)**	4.5			I/D	4-4-5	2	DS	12	
183.0	Brown, moist, loose, clayey fine to coarse **SAND**, **(POSSIBLE FILL/DISTURBED SOIL)**	7.0		5	I/D	4-5-3	3	DS	14	
180.5	Reddish brown, moist, loose, fine to medium **SAND**, some silty clay, trace gravel **[USCS: SC-SM]**	9.5			I/D	4-4-5	4	DS	18	
177.0	Light brown, moist, medium dense, fine to coarse **SAND**, little gravel, trace silt	13.0		10	I/D	13-10-11	5	DS	16	
172.0	Brownish gray, moist, medium dense, fine to coarse **SAND**, trace silt	18.0		15	I/D	7-7-8	6	DS	18	
168.0	Gray, moist, very stiff, **CLAY**, trace silt	22.0		20	I/D	6-8-10	7	DS	18	
165.0	Yellowish brown, light gray, moist, dense, fine **SAND**, some clay **[USCS: SC]**	25.0		25	I/D	10-15-19	8	DS	18	
	Bottom of Boring at 25.0 ft									

SAMPLER TYPE
DS - DRIVEN SPLIT SPOON
PT - PRESSED SHELBY TUBE
CA - CONTINUOUS FLIGHT AUGER
RC - ROCK CORE

SAMPLE CONDITIONS
D - DISINTEGRATED
I - INTACT
U - UNDISTURBED
L - LOST

GROUNDWATER DEPTH
AT COMPLETION ____ ft
AFTER ____ HRS. ____ ft
AFTER 24 HRS. ____ ft
CAVED AT 13.5 ft

BORING METHOD
HSA - HOLLOW STEM AUGERS
CFA - CONTINUOUS FLIGHT AUGERS
DC - DRIVING CASING
MD - MUD DRILLING

STANDARD PENETRATION TEST DRIVING 2" OD SAMPLER 1' WITH 140# HAMMER FALLING 30": COUNT MADE AT 6" INTERVALS

RECORD OF SOIL EXPLORATION SENIOR WELLNESS CENTER.GPJ TLB.GDT 8/22/05

THOMAS L. BROWN ASSOCIATES, P.C.
Washington, D.C.

RECORD OF SOIL EXPLORATION

Contracted With: Lance Bailey & Associates
Project Name: Senior Wellness Center, 3531-3537 Georgia Avenue
Location: Northwest, Washington, D.C.
Boring #: B-4
Job #: 05-004

SAMPLER

Datum:
Surf. Elev.: 189.0 ft
Date Started: 6/6/05
Hammer Wt.: 140 lb
Hammer Drop: 30 in
Spoon Size: 2 in
Hole Diameter: 8 in
Rock Core Dia.: N/A
Boring Method: HSA
Foreman: M. Gray
Inspector:
Date Completed: 6/6/05

ELEV (ft)	SOIL DESCRIPTION Color, Moisture, Density, Plasticity, Size Proportions	STRA DEPTH (ft)	SOIL SYMBOL	DEPTH SCALE	SAMPLE Cond	Blows/6"	No.	Type	Rec (in)	BORING & SAMPLE NOTES
	Dark brown, moist, stiff, silty **CLAY**, organics, trace gravel, **(FILL)**				I/D	1-5-8	1	DS	12	1. No water encountered. 2. Boring backfilled upon completion.
186.5		2.5								
	Brown, moist, medium dense, silty fine to coarse **SAND**, little clay				I/D	3-5-8	2	DS	14	
184.0		5.0		5						
	Light brown, moist, loose, fine to coarse **SAND**, some gravel				I/D	4-3-7	3	DS	18	
181.5		7.5								
	Orange, yellow, moist, dense, gravelly fine to coarse **SAND**, trace silt				I/D	17-15-18	4	DS	18	
179.0		10.0		10						
	Orange, light gray, red, moist, very stiff, **CLAY**, some fine sand **[USCS: CL]**				I/D	8-7-11	5	DS	18	
174.0		15.0		15						
	Brown, moist, medium dense, fine to coarse **SAND**, trace silt				I/D	8-10-12	6	DS	16	
169.0		20.0		20						
	Orange, light gray, moist, very stiff, silty **CLAY**, little fine sand				I/D	10-11-15	7	DS	18	
165.5		23.5								
	Orange, light gray, moist, hard, silty **CLAY**, trace fine sand				I/D	15-19-18	8	DS	18	
164.0		25.0		25						
	Bottom of Boring at 25.0 ft									

SAMPLER TYPE
DS - DRIVEN SPLIT SPOON
PT - PRESSED SHELBY TUBE
CA - CONTINUOUS FLIGHT AUGER
RC - ROCK CORE

SAMPLE CONDITIONS
D - DISINTEGRATED
I - INTACT
U - UNDISTURBED
L - LOST

GROUNDWATER DEPTH
AT COMPLETION Dry ft
AFTER ____ HRS. ____ ft
AFTER 24 HRS. ____ ft
CAVED AT 14.0 ft

BORING METHOD
HSA - HOLLOW STEM AUGERS
CFA - CONTINUOUS FLIGHT AUGERS
DC - DRIVING CASING
MD - MUD DRILLING

STANDARD PENETRATION TEST DRIVING 2" OD SAMPLER 1' WITH 140# HAMMER FALLING 30": COUNT MADE AT 6" INTERVALS

RECORD OF SOIL EXPLORATION SENIOR WELLNESS CENTER.GPJ TLB.GDT 6/22/05

APPENDIX B

LABORATORY TEST RESULTS

SUMMARY OF

GEOTECHNICAL LABORATORY TEST RESULTS

Table No. B - 1

SUMMARY OF GEOTECHNICAL LABORATORY TEST RESULTS

SENIOR WELLNESS CENTER

3531 - 3537 GEORGIA AVENUE, NW

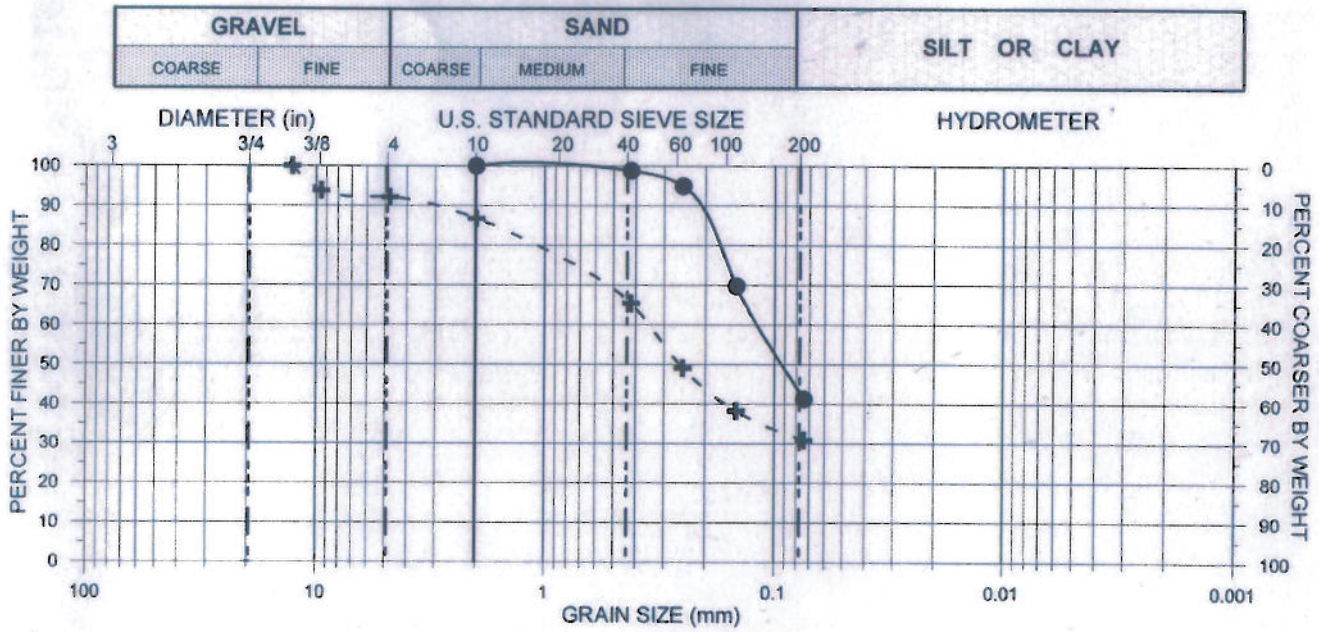
NORTHWEST, WASHINGTON, D.C.

T.L.B. JOB No. 05-004

Boring Number	Sample Number	Depth (ft)	Moisture Content (%)	ATTERBERG LIMITS			Gradation Analysis**		
				Liquid Limit	Plastic Limit	Plasticity Index	Percent Passing # 4	Percent Passing # 200	USCS
B-1	S-1	0.0 - 1.5	9.3	33	23	10			
B-1	S-3	5.0 - 6.5	15.4	39	21	18			
B-1	S-8	23.5 - 25.0	21.2				100	41	SC
B-2	S-1	0.0 - 1.5	17.2	31	24	7	92	31	SC-SM
B-2	S-4	7.5 - 9.0	16.8				100	35	SC-SM
B-2	S-7	20.0 - 21.5	26.6	74	30	44			
B-2	S-8	23.5 - 25.0	16.6				100	34	SC
B-3	S-3	5.0 - 6.5	11.3				79	20	SC
B-4	S-5	10.0 - 11.5	17.7	28	17	11	100	65	CL

** See Attached Gradation Analysis Curves

GRADATION ANALYSIS

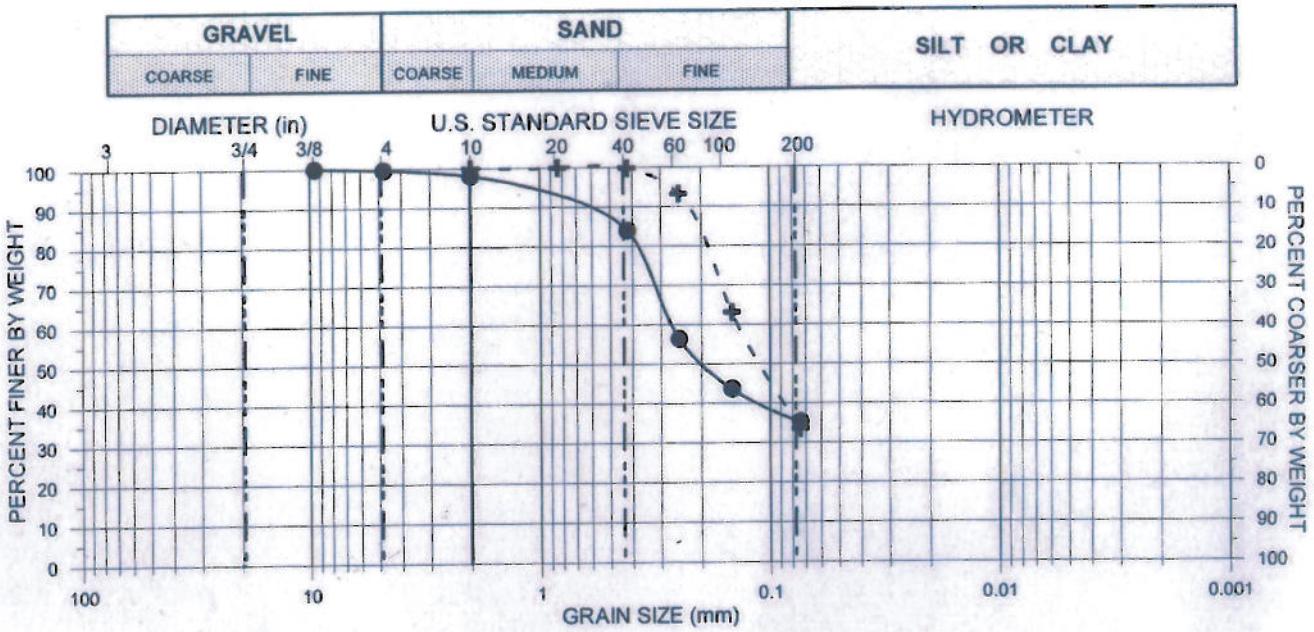


KEY	BORING No.	SAMPLE No.	DEPTH (ft)	MC (%)	LL	PL	PI	SOIL DESCRIPTION
●	B-1	S-8	23.5 - 25.0	21.2	--	--	--	Yellowish brown, gray, clayey fine SAND [USCS: SC]
+	B-2	S-1	0.0 - 1.5	17.2	31	24	7	Dark brown, fine to coarse SAND, some silty clay, trace gravel [USCS: SC-SM]

PROJECT NO.	05--004	TEST PROCEDURE USED:			
PROJECT:	SENIOR WELLNESS CENTER	ASTM D 422			
LOCATION:	3531-3537 GEORGIA AVENUE, NW, WASHINGTON, D.C.	TESTED BY:	YA	Date:	7/7/2005
THOMAS L. BROWN ASSOCIATES, P.C. *Washington, D.C.*		CHECKED BY:	NRW	Sheet:	1 of 3
		REMARKS:			

Gradation Analysis Curves

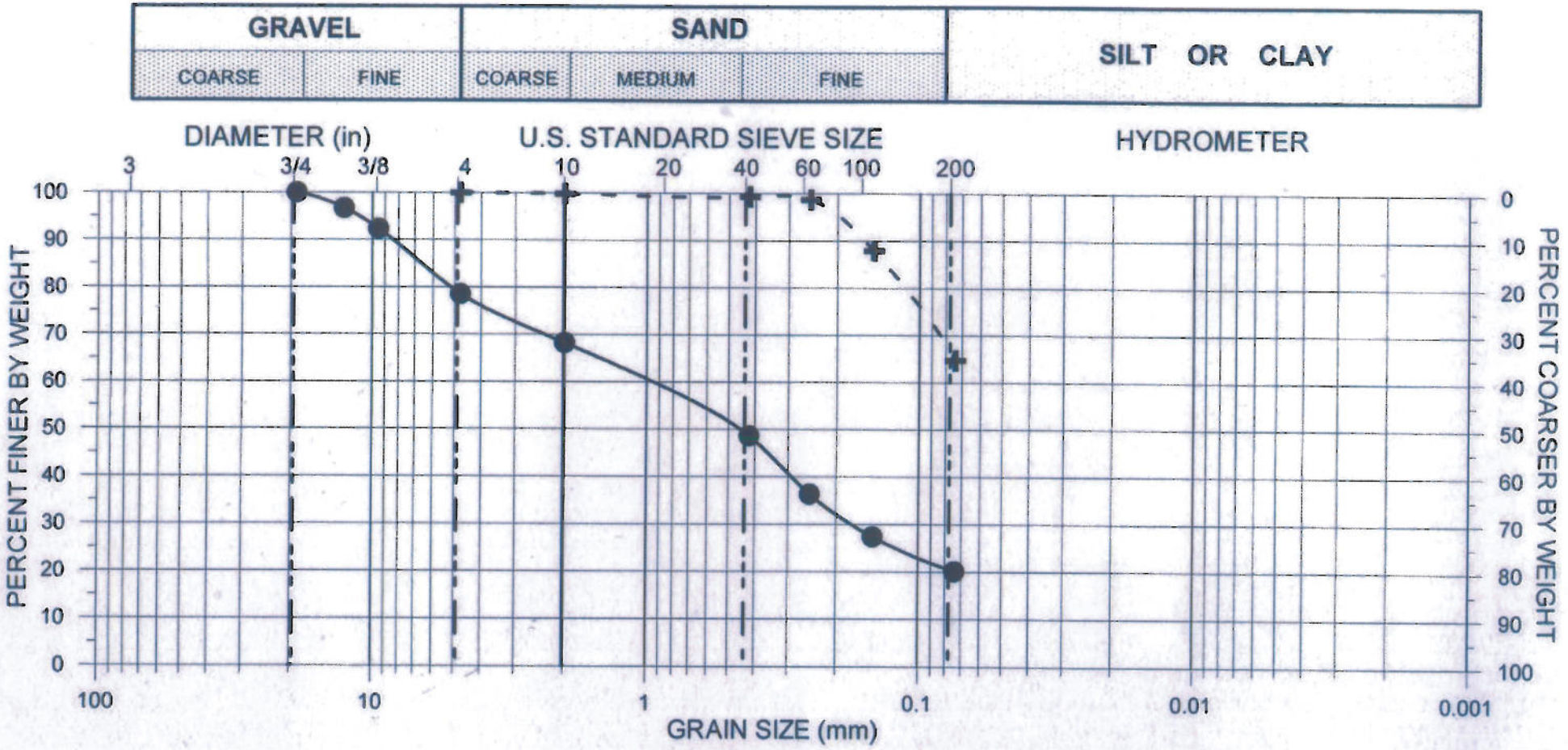
GRADATION ANALYSIS



KEY	BORING No.	SAMPLE No.	DEPTH (ft)	MC (%)	LL	PL	PI	SOIL DESCRIPTION
●	B-2	S-4	7.5 - 9.0	16.8	--	--	--	Reddish brown, fine to medium SAND, some silty clay, trace gravel [USCS: SC-SM]
+	B-2	S-8	23.5 - 25.0	16.6	--	--	--	Yellowish brown, light gray, fine SAND, some clay [USCS: SC]

PROJECT NO.	05--004	TEST PROCEDURE USED:		
PROJECT:	SENIOR WELLNESS CENTER	ASTM D 422		
LOCATION:	3531-3537 GEORGIA AVENUE, NW, WASHINGTON, D.C.	TESTED BY:	YA	Date: 7/7/2005
THOMAS L. BROWN ASSOCIATES, P.C. *Washington, D.C.*		CHECKED BY:	NRW	Sheet: 2 of 3
		REMARKS:		

GRADATION ANALYSIS



KEY	BORING No.	SAMPLE No.	DEPTH (ft)	MC (%)	LL	PL	PI	SOIL DESCRIPTION
●	B-3	S-3	5.0 - 6.5	11.3	--	--	--	Brown, fine to coarse SAND, some gravel, little clay [USCS: SC]
+	B-4	S-5	10.0 - 11.5	17.7	28	17	11	Brown, reddish brown, CLAY, some fine sand [USCS: CL]

PROJECT NO.	05--004	TEST PROCEDURE USED:		
PROJECT:	SENIOR WELLNESS CENTER	ASTM D 422		
LOCATION:	3531-3537 GEORGIA AVENUE, NW, WASHINGTON, D.C.	TESTED BY:	YA	Date: 7/7/2005
THOMAS L. BROWN ASSOCIATES, P.C. *Washington, D.C.*		CHECKED BY:	NRW	Sheet: 3 of 3
		REMARKS:		