APPROVED
FEB 06 2020
BOARD OF RECREATION
AND PARK COMMISSIONERS

BOARD REPORT NO. 20-022

DATE February 6, 2020 C.D. 1

BOARD OF RECREATION AND PARK COMMISSIONERS

SUBJECT: GLASSELL PARK SYNTHETIC SOCCER FIELD (PRJ20760) (W.O. #E170187F) PROJECT – APPROVAL OF FINAL PLANS; CATEGORICAL EXEMPTION FROM THE PROVISIONS OF THE CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA) PURSUANT TO ARTICLE III, SECTION 1, CLASS 1(1) [MINOR EXTERIOR ALTERATION OF EXISTING PUBLIC STRUCTURES INVOLVING MINOR CONSTRUCTION] AND CLASS 1(4) [REHABILITATION OF DETERIORATED STRUCTURES TO MEET CURRENT STANDARDS OF PUBLIC SAFETY] OF CITY CEQA GUIDELINES AND ARTICLE 19, SECTION 15301(d) OF CALIFORNIA CEQA GUIDELINES

AP Diaz		S. Piña-Cortez	
H. Fujita	PC	C. Santo Domingo	DF
V. Israel		N. Williams	

Maria Denise Williams
General Manager

Approved X Disapproved _____ Withdrawn _____

RECOMMENDATIONS

1. Approve the final plans and specifications, substantially in the form on file in the Board of Recreation and Park Commissioners (Board) Office and as attached to this Report, for the Glassell Park Synthetic Soccer Field (PRJ20760) (W.O. #E170187F) Project (Project);

2. Find that the proposed Project is categorically exempt from the provisions of the California Environmental Quality Act (CEQA), pursuant to Article III, Section 1, Class 1(1) [minor exterior alteration of existing public structures involving minor construction] and Class 1(4) [rehabilitation of deteriorated structures to meet current standards of public safety] of City CEQA Guidelines and Article 19, Section 15301(d) of California CEQA Guidelines, and direct Department of Recreation and Parks (RAP) staff to file a Notice of Exemption (NOE) with the Los Angeles County Clerk's Office; and,

3. Authorize RAP's Chief Accounting Employee or designee to make technical corrections as necessary, to carry out the intent of this Report.

SUMMARY

The Project is a proposed synthetic soccer field that will be a part of the Glassell Park Recreation Center Complex, located at 3650 Verdugo Road, Los Angeles, CA 90065. The facility is generally described as a neighborhood park, in the Metro section of Northeast Los Angeles, within the 1st

Council District. The recreation facility currently offers a soccer field, baseball diamonds, volleyball court, basketball court, picnic tables, outdoor fitness equipment, and tennis courts. The surrounding neighborhoods near Glassell Park are highly urbanized and underserved with regard to recreational activities. The proposed Project is a Proposition K 8th Cycle Competitive grant project.

Approximately 200 to 300 youth play soccer daily at this park, utilizing both an existing natural turf field and a smaller synthetic soccer field. Replacing the existing natural turf field with a synthetic surface would expand soccer opportunities at the park, providing more recreational opportunities for youth and families in the surrounding neighborhood.

Once the synthetic field is installed, the need for "out-of-service" days for reseeding and turf establishment will be eliminated, thereby increasing usage of the field. In addition, the synthetic field will not need to be watered and mowed, allowing even more soccer to be played on the field during times that were formerly allocated for maintenance.

The Department of Public Works, Bureau of Engineering (BOE), Architectural Division, has submitted the final plans for the Project for Board consideration. The proposed scope of work for the Project consists of constructing a new synthetic soccer field within the existing park. After review by RAP and BOE staff, it was determined that the work can be completed by RAP's pre-qualified on-call contractors and for BOE to provide construction management services.

A geotechnical investigation was conducted by BOE, Geotechnical Engineering Group to determine the feasibility of the proposed Project, and to provide recommendations regarding site preparation and earthwork. The proposed Project was found to be geotechnically feasible and the findings are detailed in the Geotechnical Report, attached hereto as Attachment 2.

As required by the Proposition K guidelines, three (3) Local Volunteer Neighborhood Oversight Committee (LVNOC) meetings were conducted. The first LVNOC meeting was held on January 9, 2014, and both the second and the third meetings were held on April 16, 2014. All LVNOC members are in support of the proposed Project. Due to a conflicting sewer replacement project underneath the existing soccer field, this proposed Project was delayed for approximately 24 months. On November 7, 2018, RAP's Facility Repair and Maintenance Commission Task Force directed RAP staff to reintroduce the proposed Project to the Glassell Park Advisory Board (PAB). For this reason, BOE reiterated support for the proposed Project at the Glassell Park PAB meeting on February 27, 2019. The PAB members in attendance at the meeting were in support of moving the proposed Project forward as quickly as possible, and promised the continual support of the surrounding community.

Sufficient funds are available for the construction and construction contingencies of the proposed Project from the following funds and accounts:

FUNDING SOURCE	FUND/DEPT./ACCT. NO.
Proposition K Year 17	43K/10/10KM10
Proposition K Year 18	43K/10/10LM10
Sites and Facilities	209/88/88PACM

TREES AND SHADE

Due to the need to remove a dead California Sycamore tree at a peripheral corner of the new synthetic soccer field, new trees will be planted. The existing Sycamore tree has a canopy coverage of approximately 700 square feet. The new trees will be six (24" box) Fern Pine (Podocarpus Gracilior), and seven (24" box) Australian Willow (Geijera Parviflora). At maturity, the new trees should provide a total canopy cover of approximately 6,500 square feet. No shade structure was included in the project funding application; however, the new trees will provide added shade.

ENVIRONMENTAL IMPACT

The proposed Project consists of exterior alterations involving minor construction where there will be negligible or no expansion of use and of rehabilitation of deteriorated structures to meet current standards of public safety. As such staff recommends that the Board determines that it is exempt from the provisions of the California Environmental Quality Act (CEQA) pursuant to Article III, Section 1, Class 1(1) and Class 1(4) of City CEQA Guidelines and Article 19, Section 15301(d) of California CEQA Guidelines. An NOE will be filed with the Los Angeles County Clerk upon the Board's approval.

FISCAL IMPACT

There is no immediate fiscal impact to the RAP's General Fund as result of this Project. Future operational and maintenance costs will be determined and a budget request will be submitted to cover these costs.

STRATEGIC PLAN INITIATIVES AND GOALS

Approval of this Board Report advances RAP's Strategic Plan by supporting:

Goal No. 1: Provide safe and accessible parks.
Outcome No. 2: All parks are safe and welcoming.
Result: The installation of the proposed synthetic soccer field will help provide much needed recreation space for the underserved community and will result in a more welcoming park.

This Report was prepared by Erick Chang, Project Manager, BOE; and reviewed by Neil Drucker, Interim Architectural Division Manager, BOE; and Darryl Ford, Superintendent, Planning, Construction and Maintenance Branch, RAP.

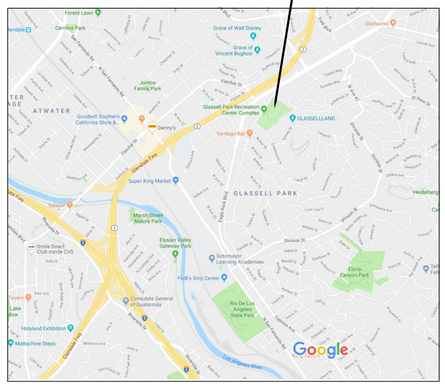
LIST OF ATTACHMENT(S)

1) Final Plans for Glassell Park Synthetic Soccer Field Project
2) Geotechnical Report for Glassell Park Synthetic Soccer Field Project

Attachment 1

CITY OF LOS ANGELES
DEPARTMENT OF PUBLIC WORKS
BUREAU OF ENGINEERING

GLASSELL PARK SYNTHETIC SOCCER FIELD PROJECT



VICINITY MAP
NOT TO SCALE

CLIENT
DEPARTMENT OF RECREATION AND PARKS
MICHAEL A. SHULL, GENERAL MANAGER

BOE DIVISION

NEIL DRUCKER
INTERIM DIVISION MANAGER / ARCHITECTURAL DIVISION

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ARCHITECTURAL DIVISION- BOE
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PRINCIPLE CIVIL ENGINEER
DIVISION ENGINEER
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LOS ANGELES, CA 90015

BUREAU OF ENGINEERING
OFFICIAL RECORD

ENGINEERING
CITY OF LOS ANGELES

REGISTERED PROFESSIONAL ENGINEER
KENNETH R. REED
No. C-49615
CIVIL
STATE OF CALIFORNIA

• THIS PLAN WAS ELECTRONICALLY SIGNED AND STAMPED •

DEPARTMENT OF PUBLIC WORKS
BUREAU OF ENGINEERING
VERTICAL CONTROL:
HORIZONTAL CONTROL:
SHEET TITLE: COVER SHEET
PROJECT: GLASSELL PARK SYNTHETIC SOCCER FIELD PROJECT
ADDRESS: GLASSELL PARK
3650 VERDUGO ROAD, LOS ANGELES, CA 90065

NO.	REVISIONS:	DATE:	BY:

CD NO. XXXX

INDEX NO. RP-300110

CITY OF LOS ANGELES
GARY LEE MOORE, P.E., ENV SP
CITY ENGINEER
09/12/2019
DATE
DEPUTY CITY ENGINEER/PROGRAM MANAGER
for
09/12/2019
DATE
CITY ENGINEER

WORK ORDER NO.
E170187A

SHEET NO.
G001
SHEET 1 OF 20 SHEETS

THE CITY OF LOS ANGELES OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.

REVISION DATE
(DESIGN & CASE ONLY)

Sheet Version 4.0

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DEPARTMENT OF PUBLIC WORKS
BUREAU OF ENGINEERING

GEOTECHNICAL ENGINEERING GROUP

GEOTECHNICAL ENGINEERING REPORT
GLASSELL PARK - SYNTHETIC SOCCER FIELD
3650 VERDUGO ROAD
TRACT: SUBDIVISION OF THE HUNTER HIGHLAND VIEW TRACT,
BLOCK: - LOT: 56
LOS ANGELES, CALIFORNIA

W.O. # E170187B
GEO FILE # 13-096
DATE: MAY 13, 2014

TABLE OF CONTENTS

1.0 INTRODUCTION

This report presents the results of a geotechnical investigation conducted for the Glassell Park Synthetic Soccer Field at 3650 Verdugo Road in the City of Los Angeles. A vicinity map of the project site is shown on Plate 1. This investigation was conducted to evaluate subsurface characteristics and to provide geotechnical recommendations for design and construction of the project. The Geotechnical Engineering Group (GEO) prepared this report in response to the Recreation and Cultural Facilities Program (RCF) request dated July 25, 2013 and Notice to Proceed dated September 19, 2013.

This report is based on visual observation, subsurface investigation and laboratory testing. At the request of GEO, Department of General Services, Standard Division (Standards) performed subsurface exploration and field infiltration at the site and laboratory testing of samples collected from the site. The results of their field investigation, infiltration and laboratory tests are included in their Report of Subsurface Investigation (Appendix A) dated December 20, 2013. GEO has reviewed the report, concurs with their findings, and accepts responsibility for the use of its contents.

2.0 PROJECT SCOPE

The project will consist of constructing a new synthetic soccer turf soccer field at the existing lawn area. The work will involve the installation of the new synthetic turf, permanently fixed goal posts, chain link fence, drainage system, field cooling system, re-grading of existing lawn, and an irrigation system.

Final site grades are expected to be within one foot of the current site grades. If the project scope is modified to include significant elevation changes, structures, or relocation of improvements, this report should not be considered adequate for design or construction of the modified project scope. In such case, a supplemental report to address the altered scope will be required.

3.0 EXPLORATION PROGRAM

Two exploratory borings were drilled in the area of the proposed soccer field to depths ranging from 6.5 feet to 11.5 feet below the ground surface (bgs). The exploratory borings were drilled using a truck-mounted drill rig equipped with 9-inch diameter conventional flight augers. Boring B-1 was advanced to a depth of 6.5 feet bgs. Boring B-2 was advanced to a depth of 11.5 feet bgs. Approximate locations of the borings are provided on the Test Boring Location Map and Aerial Photo in Standards' report (Appendix A).

Ring samples were collected from Boring B-1 at depths of 2.5 and 5 feet bgs, and from Boring B-2 at a depth of 2.5, 5, 7.5, and 10 feet. Ring samplers were driven into the bottom of the borings with successive drops of a 300-pound hammer falling 30 inches. The number of blows required to advance the ring and samplers into the soil for six inches of the sampling interval is recorded and presented on the boring logs (Appendix A). Each soil sample was classified in general conformance with the Unified Soil Classification System (USCS). All samples were sealed and packaged for transportation to the Standards laboratory. Bulk samples were also collected from the upper 2½ feet.

Screening for volatile organic compounds (VOCs) was performed to evaluate whether fuel spills or other contamination of the soil may have occurred in the project area. Soil samples were screened in the field using a portable Organic Vapor Analyzer (OVA), and a multigas detector was also used as a screening tool for methane (Lower Explosive Limit or LEL). OVA and methane levels at the site were found to be non-detect.

Boring B-1 and B-2 were converted to monitoring wells, TW-1 and TW-2, respectively, and infiltration testing was conducted within each well as discussed in Section 5.4. After completion of the infiltration testing, the well was abandoned and the hole was backfilled with on-site soils.

4.0 LABORATORY TESTING

Selected soil samples were tested for the following properties:

- In-Place Dry Density and Field Moisture (D2937)
- Laboratory Maximum Dry Density and Optimum Moisture Content (ASTM D1557)
- Consolidation (ASTM D2435)
- Direct Shear (ASTM D3080)
- Sieve and Hydrometer Analysis (ASTM D422)
- Liquid Limit and Plasticity Index (ASTM D4318)
- Expansion Index (ASTM D4829)

Laboratory test results are presented in Standards' Report (Appendix A). Soil parameters used for design purposes are summarized in Table 1, Soil Design Parameters.

TABLE 1 – SOIL DESIGN PARAMETERS

Material	Soil Description	Unit Weight	Cohesion	Friction
Compacted Fill (90% Relative Compaction)	Clayey Sand (SC)	123 pcf	220 psf	35°
Native Soil	Sandy Lean Clay (CL)	126 pcf	170 psf	35°

5.0 FINDINGS

5.1 SURFACE CONDITIONS

The project site is located at 3650 Verdugo Road in the City of Los Angeles. The project site is relatively flat, currently landscaped with grass, and currently being used as a soccer field. The surrounding areas are also relatively flat and consist of basketball courts and tennis courts.

5.2 SUBSURFACE CONDITIONS

Undocumented fill was encountered in the southwest portion of the existing soccer field (see B-2/TW-2). The undocumented fill, which extends to a depth of approximately 6 feet

bgs, consists of sandy lean clay with siltstone bedrock fragments. Asphalt fragments were observed in the samples and drill cuttings. The near surface native soil encountered in B-1/TW-1 consists of clayey sand to the maximum explored depth. The native soil encountered in B-2/TW-2 consists of a silty sand underlain by sandy lean clay. The silty sand layer is approximately 1-foot thick, and the sandy lean clay extends to the maximum explored depth.

The in-situ moisture content and dry density were found to range from approximately 11.5 to 16.4 percent and 109 to 110 pounds per cubic foot, respectively. The results of four Atterberg Limits test indicate the plasticity index is between 11 and 21. An expansion index was performed on a sample of native clayey sand, and the expansion index (EI) value was found to be 13. Based on the 2011 Los Angeles Building Code criteria, the near surface sandy lean clay is not considered to be expansive. Detailed descriptions of the soils can be found on the boring logs presented in the Report of Subsurface Investigation (Appendix A).

5.3 GROUNDWATER

Free groundwater was not encountered in either of the borings to a maximum explored depth of 11.5 feet bgs. Groundwater data obtained from California Division of Mines and Geology (CDMG, 1998) indicates the shallowest reported historic depth to groundwater in the site area is on the order of 20 feet bgs. It should be noted that groundwater levels can fluctuate with seasonal rainfalls, dry weather, irrigation practices and pumping activities in the vicinity of the site.

5.4 INFILTRATION TESTING

The testing procedures were performed in general accordance with the “Shallow Well Pump-in Method” guidelines, as presented in Chapter 29 of the American Society of Agronomy (1986) textbook. Prior to infiltration testing, each test well was filled with water and left overnight. The infiltration testing was initiated by filling the well casing with water. As water began to infiltrate, the established water level was kept relatively constant by adding water at predetermined time increments. The amount of water added during each time increment to maintain the constant water level was recorded on field data sheets. Each test was performed for a minimum period of six hours and until the infiltration rates appeared to stabilize (i.e. reach a steady-state flow condition). The test data sheets are provided in Appendix A.

A summary of the field steady-state infiltration rates is presented below in Table 2. An adjustment factor was not applied to these values.

TABLE 2 – SUMMARY OF INFILTRATION TEST RESULTS

Test Well ID	Infiltration Zone (inches below ground surface)	Steady-State Infiltration Rate (in/hr)
B-1/TW-1	24 – 78	0.06
B-2/TW-2	24 – 138	0.12

The infiltration rates presented above may not be applicable to other areas of the site. Minor changes in soil composition can result in significant changes to the infiltration rates.

The parameters above should only be used for design by those with an understanding of the limitations of the testing method and complexities of subsurface drainage.

6.0 SEISMIC HAZARDS

The project consists of constructing a soccer field, and at this time, no structures are proposed; therefore, an evaluation of seismic hazards was beyond our current scope of work. If structures are proposed in the future, an evaluation of seismic hazards may be required.

7.0 SITE RECOMMENDATIONS

7.1 GENERAL

Based on the results of our geotechnical investigation, the proposed project is considered geotechnically feasible provided the recommendations in this report are incorporated into the design and construction of the project.

Site preparation and earthwork recommendations are provided in the remaining sections of this report. A representative of GEO will need to provide observation and testing services during the anticipated earthwork. This will allow us the opportunity to compare actual conditions with those encountered in the exploratory borings and, if necessary, provide supplemental recommendations. We shall also be provided an opportunity to review the design plans and specifications prior to finalizing.

7.2 SITE PREPARATION AND EARTHWORK

7.2.1 Site Clearing

Prior to construction, all organic or inorganic materials shall be removed from the construction area and disposed of outside the site. Any existing structural or landscape elements within these areas, including any foundation elements, shall be demolished and removed from the site. Any utilities, whether active or inactive, shall be identified and removed from the site or relocated per project plans and specifications. Any cavities resulting from removal of any existing foundations or utility lines shall be properly backfilled and compacted in accordance with the recommendations in Section 7.2.6 of this report.

7.2.2 Over-Excavation

The area of the proposed soccer field shall be over-excavated to a depth of at least 18 inches below existing grade. The excavation shall extend laterally beyond the edge of the soccer field a distance of 3 feet or to site property lines, whichever is smaller. Additional excavation may be required if soft soil is encountered at the base of the excavation.

7.2.3 Temporary Excavations

The soil at the site can be readily excavated using conventional earthmoving equipment. All temporary excavations shall conform to the State of California Construction Safety Orders (CAL/OSHA). Unsurcharged, temporary vertical excavations can be a maximum depth of 5 feet. Excavations greater than 5 feet are not anticipated for the project.

7.2.4 Subgrade Preparation

If soft, yielding, or unsuitable soils are exposed at the subgrade surface, then the unsuitable soils shall be removed and replaced with properly compacted fill soils. If additional removal causes an uneven bottom, GEO may require additional excavation to provide a suitable subgrade transition. All exposed excavation bottoms, shall be scarified to a minimum depth of 6 inches and compacted to a minimum 90% relative compaction as determined by ASTM D1557. The excavation bottom shall be observed, tested, and approved by a representative of GEO and the City of Los Angeles Grading Inspector prior to placement of fill.

After the acceptance of the subgrade, fill material may be placed in accordance with the following recommendations. Subgrade soils shall be kept moist (between 0 and 2 percent above the optimum moisture content) but not flooded until covered with subsequent fill or construction.

7.2.5 Fill Materials

Fill soils shall consist of the on-site soils or approved import material. The on-site soils shall be free of organic matter, debris, and other deleterious materials, and shall not contain inorganic debris and all materials with any dimension larger than 3 inches. Drying of wet site soils or mixing of these soils with dryer soils may be required prior to being used as compacted fill. Import material for use as fill for this project shall be predominantly granular (minimum 80% passing number 4 sieve and 35% or less passing the number 200 sieve), non-expansive (EI less than 20), and shall be free of organic or inorganic debris, contamination and materials with any dimension larger than 3 inches. Import material shall be tested and reviewed by GEO prior to importing to the job site. GEO shall be notified a minimum of three working days prior to scheduled importing of soil to the project site.

7.2.6 Fill and Backfill Placement

Fill shall only be placed on approved surfaces/subgrades prepared in accordance with Section 7.2.4 of this report. Fill material shall be placed in loose lifts not exceeding 8 inches in thickness, moisture-conditioned between 0 and 3 percent above the optimum moisture content, and mechanically compacted.

Non-structural fill shall be compacted to a minimum of 90 percent relative compaction, as determined by ASTM Test Method D1557. Any aggregate base should be moisture-conditioned between optimum and two percent above optimum-moisture and compacted to a minimum of 95 percent relative compaction. Fill compaction shall be tested and recorded by a certified compaction testing agency working under the direct supervision of GEO. Densification by flooding or jetting is not allowed. Compacted fill soils shall be kept moist, (between 0 and 2 percent above the optimum moisture content) but not flooded, until covered with subsequent construction. If fill soils are allowed to dry out, softened or eroded by excessive moisture or disturbed by construction activities, the fill soils shall be replaced or recompacted at the discretion of the Geotechnical Engineer before additional fill or construction is placed. Certification and inspection approvals for compromised soils are void and invalid.

7.2.7 Trench Backfill

Trench excavations for shallow utility and/or drainage pipes beneath the soccer field may be backfilled with onsite soils under the observation of a representative of GEO. After utility pipes have been laid, properly bedded, and covered per the project specifications, they shall be backfilled to the ground surface or design subgrade with controlled backfill. Controlled backfill shall be moisture conditioned, placed and compacted in accordance with the recommendations presented in Section 7.2.6 of this report.

7.2.8 Fill Certification

Following successful completion of the fill placement and compaction, GEO will issue a Compaction Certification.

7.3 STORMWATER INFILTRATION

The City of Los Angeles Development Best Management Practices Handbook, Low Impact Development Manual (2011) presents screening criteria for classifying the infiltration potential of sites, and they are: 1) Feasible, 2) Potentially Feasible, and 3) Infeasible. As presented in Table 2 of this report, the steady-state infiltration rates were found to be between about 0.06 and 0.12 in/hr. Based on the screening criteria in the LID BMP Handbook, an infiltration rate greater than 0.5 in/hr is considered feasible; therefore, the project site is not suitable for stormwater infiltration.

8.0 SUPPLEMENTAL GEOTECHNICAL SERVICES

8.1 REVIEW OF PLANS AND SPECIFICATIONS

The grading plans and specifications should implement the recommendations presented in this report and should be reviewed by GEO to ensure proper interpretation and application of our recommendations.

8.2 GEOTECHNICAL OBSERVATION AND TESTING DURING CONSTRUCTION

All grading should be performed under the observation and testing of the Geotechnical Engineer at the following stages:

- Upon completion of site clearing;
- During site excavation;
- During subgrade preparation;
- During fill placement;
- During excavation and backfilling of all utility trenches; and
- When any unusual or unexpected geotechnical conditions are encountered.

9.0 CLOSURE

If there are any questions regarding this report, please contact Curtis Gee at (213) 847-0485.

REGISTERED PROFESSIONAL ENGINEER
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GE 2991
EXP. 6/30/15
GEOTECHNICAL
STATE OF CALIFORNIA

5/13/14

Curtis J. Gee, GE 2991
Civil Engineering Associate III

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5/13/14

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Geotechnical Engineer I

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REFERENCES

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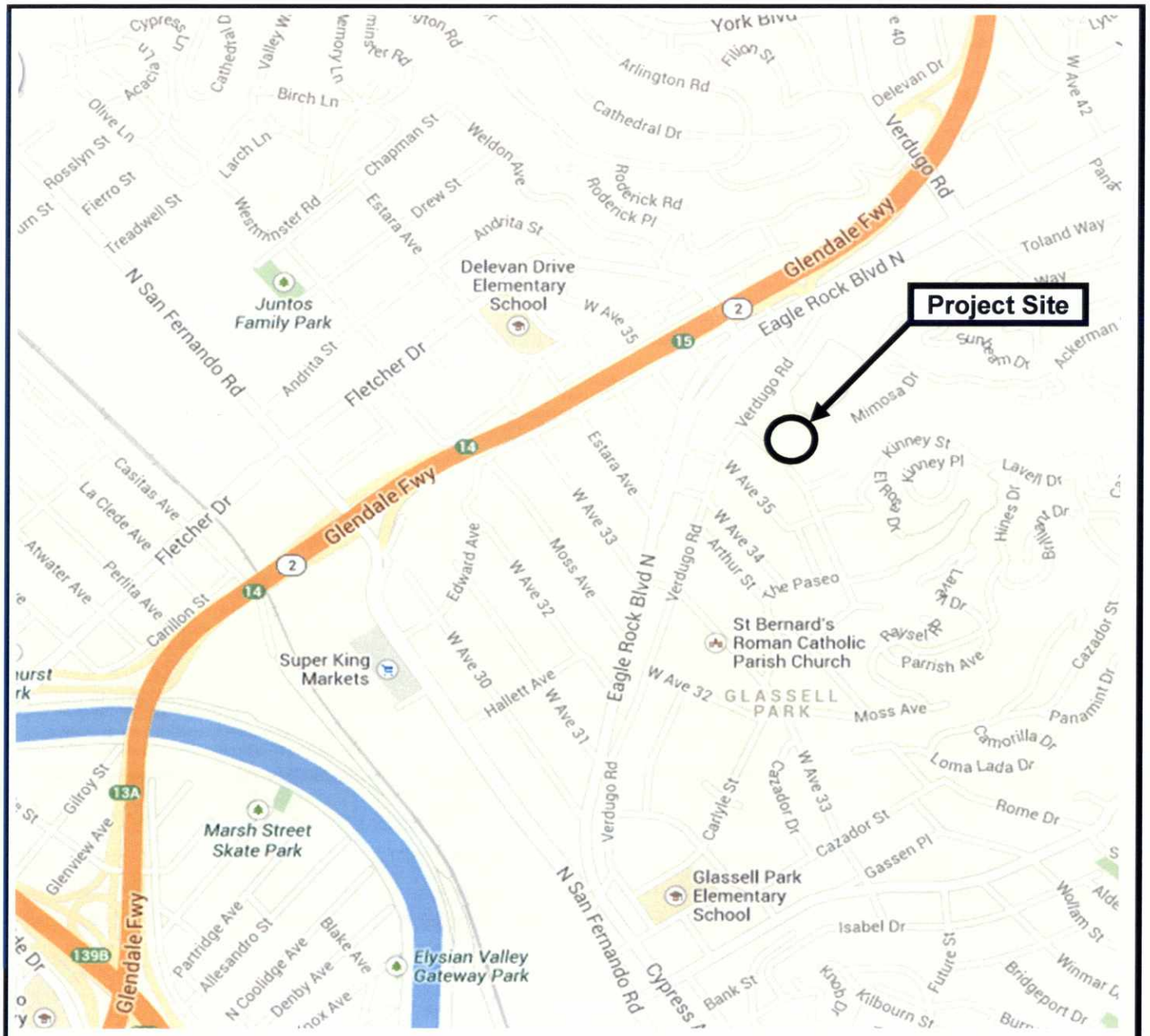
California Department of Conservation, Division of Mines and Geology, 1998, Seismic Hazard Evaluation of the Los Angeles 7.5-Minute Quadrangle, Los Angeles County, California, Open-File Report 98-20

City of Los Angeles, 2011, Development Best Management Practices Handbook, Low Impact Development Manual, Part B Planning Activities, 4th Edition.

City of Los Angeles Building Code, 2011.

NavigateLA, City of Los Angeles, http://boemaps.eng.ci.la.ca.us/index01.cfm



SOURCE: GOOGLE MAPS

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VICINITY MAP

GLASSELL PARK SYNTHETIC SOCCER FIELD 3650 VERDUGO ROAD LOS ANGELES, CALIFORNIA 90065	BUREAU OF ENGINEERING GEOTECHNICAL ENGINEERING GROUP (GEO) GEO FILE No.: 13-096 DATE: MAY 2014	PLATE No. 1

APPENDIX A

DEPARTMENT OF GENERAL SERVICES
STANDARDS DIVISION
REPORT OF SUBSURFACE INVESTIGATION

CITY OF LOS ANGELES
DEPARTMENT OF GENERAL SERVICES
STANDARDS DIVISION

GLASSELL PARK
SYNTHETIC SOCCER FIELD

LAB NO. 140-5968

W.O NO. E170187B
DECEMBER 2013

GEOTECHNICAL SERVICES FILE: 13-096

CITY OF LOS ANGELES
DEPARTMENT OF GENERAL SERVICES
STANDARDS
2319 DORRIS PLACE
LOS ANGELES, CA 90031
(213) 485-2242
fax (213) 485-5075

Lab. No. 140-5968

Received: 08-28-13
NTP: 09-24-13
Reported: 12-20-13

Glassell Park
Synthetic Soccer Field

W.O. No. E170187B
File No. 13-096

TO: Deborah J. Weintraub
Interim City Engineer

Attention: Christopher Johnson

Report of
SUBSURFACE INVESTIGATION

Transmitted are the results of subsurface investigation performed by Standards on the above-named project as requested by the Geotechnical Engineering Group (GEO) of the Bureau of Engineering. The logs of the test borings, the Unified Soil Classification and the results of the laboratory tests requested by the Engineer are parts of this report. The descriptions reported on the "Log of Test Boring" sheets are based on field identification procedures, examination of the samples in the laboratory and soil classification tests. The soil classification is based on the attached Unified Soils Classification System.

Two test borings were drilled on this project with a truck-mounted Central Mine Equipment Model-75HT drill rig using 9-inch diameter conventional flight augers. "Undisturbed" samples were obtained from the test borings at depths indicated on the log sheets with a 3½-inch outside diameter (O.D.) by 3-inch inside diameter (I.D.) Split Spoon sampler lined with 2⅜-inch inside diameter (I.D.) by 1-inch high brass tubes. The sampler was driven into the soil with the weight of a 300-pound automatic trip hammer falling approximately 30 inches.

Organic Vapor Analyzer (OVA) readings and Lower Explosive Limit (LEL) readings were taken during the drilling operation with a Photovac Inc. Model Microfid I/SC EXIA and RKI Instruments Model Eagle devices. The OVA reading were taken 2-ft above the test-boring hole at intervals when the drilling operation reached each sampling depth. OVA readings were also taken in the bulk soil sample bags after soil collection. LEL reading were taken above the conventional flight augers prior to soil sampling.

The following tests were performed on samples from the test borings:

In-place Dry Density and Field Moisture (ASTM D2937)

Laboratory Maximum Dry Density and Optimum Moisture Content (ASTM D1557)

Consolidation (ASTM D2435)

Direct Shear (ASTM D3080)

Grain Size Analysis/Hydrometer (ASTM D422)

Liquid Limit (ASTM D4318 – one point method)

Plasticity Index (ASTM D4318)

Expansion Index (ASTM D4829)

Whenever possible, the in-place dry density and field moisture content were determined from the total undisturbed sample before being prepared for other laboratory tests. These are reported to the nearest 0.1 pound per cubic foot (nearest 1 pound per cubic foot on the log sheets) and 0.1 percent respectively.

Each consolidation test was performed on 2⅞-inch diameter by 1-inch one high undisturbed or remolded soil specimen in a floating ring type consolidometer. The specimen was retained in the 2⅞-inch I.D. brass ring during the test and porous disks were placed on the top and bottom of the specimen. The specimen was initially tested at field moisture to the normal load indicated on the data sheet. When the testing at field moisture was completed, sufficient water was added to cover the specimen and the consolidation test was continued with the specimen under water. At the conclusion of the test, the submerged specimen was allowed to rebound by decreasing the load in decrements shown on the data sheet, concluding with the normal load of 0.1 ton per square foot, and the corresponding rebound readings taken.

Each direct shear test was performed on 2⅞-inch diameter by 1-inch high undisturbed or remolded soil specimens that were soaked for at least 24 hours before being tested. During soaking the specimens were confined between two perforated brass plates to prevent swelling. The specimens were tested under various normal loads, with a different specimen being used for each normal load, while submerged in water. The rate of shearing is listed on the data sheet. Peak shear load values (represented by solid symbols) and ultimate shear load values at 0.250-inch displacement of the sheared specimens (represented by symbols which are not solid) are reported.

Percolation test was performed at boring locations TW-1 and TW-2 from 10/18/13 to 10/24/13. Standards Division personnel followed GEO's Infiltration Testing Procedure that was transmitted to Standards on 08-28-13. The raw percolation test data sheets were faxed to GEO at the end of each test day. GEO was responsible to review the data sheets and analyze the test results. Tabulated data sheets for the percolation test are attached to this report for informational purposes only.

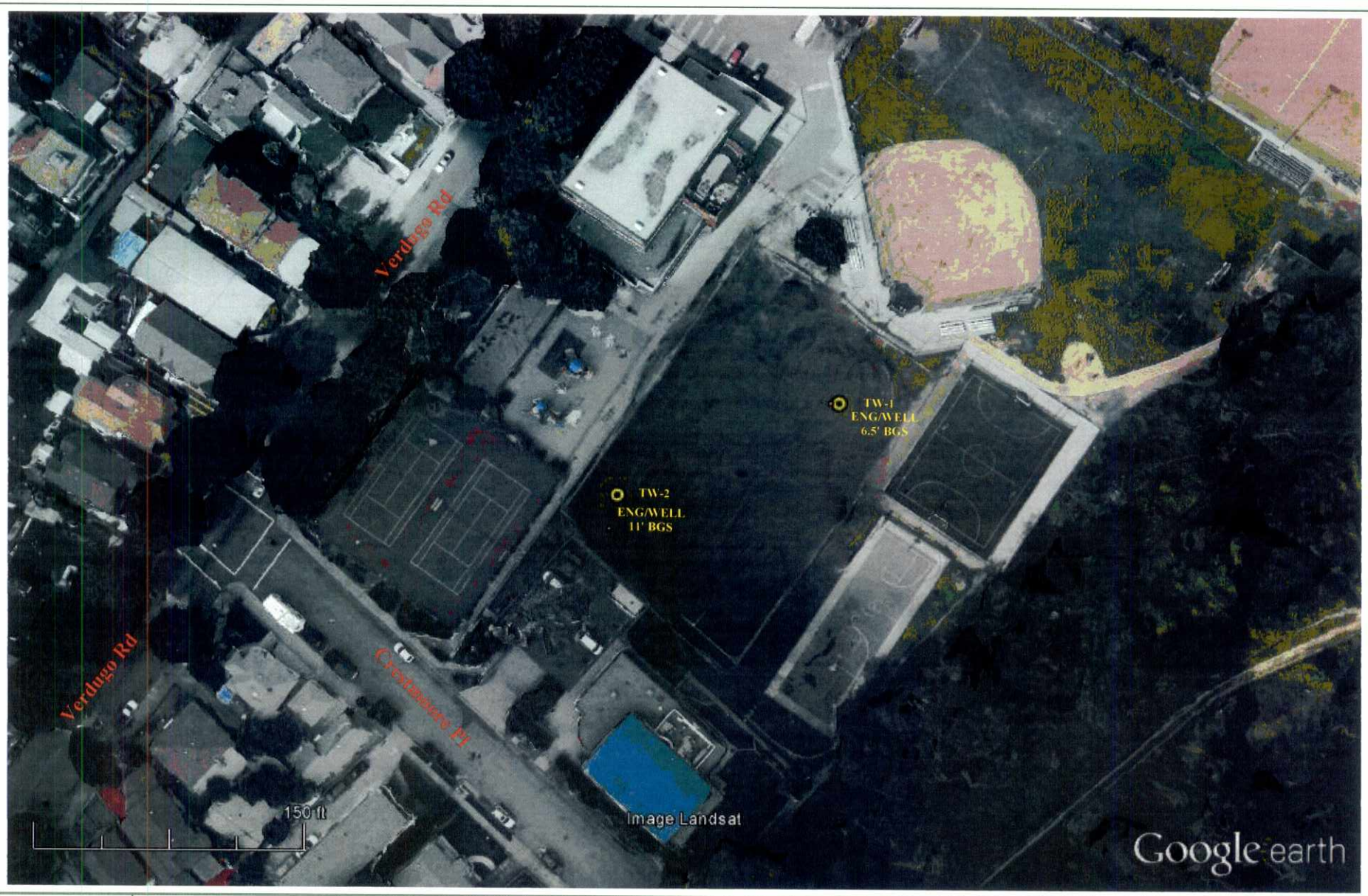
Geotechnical Engineering Group gave the Notice to Proceed with the subsurface investigation to Standards on 09-24-13. Curtis Gee of your Bureau was notified at least 48 hours prior to the drilling and sampling operations. A boring location map is included in this report.

Glassell Park
Synthetic Soccer Field
W.O. No.: E170187B
File No.: 13-096

All soil samples for the above-named project that were delivered to the Standard Foundation Laboratory are presently being stored. These samples will be discarded 45 days after the date of this report unless a specific written request to retain the samples for additional testing or for a longer storage period is submitted by your Bureau.

RAY H. SOLOMON, Director
General Services/Standards

RHS:JV:KSN:m



N

Legend:

⊙ = Test Boring Location

BGS = Below Ground Surface

ENG = Engineering Sampling (Split Spoon)

Test Hole No., Location
TW-1, 243' SE/o SECF Verdugo Rd, 288' NE/o NECF Crestmoore Pl
TW-2, 162' SE/o SECF Verdugo Rd, 152' NE/o NECF Crestmoore Pl

CITY OF LOS ANGELES
DEPARTMENT OF GENERAL SERVICES
STANDARDS DIVISION

TEST BORING
LOCATION MAP
& AERIAL PHOTO

PROJECT TITLE: Glassell Park Synthetic Soccer Field

W.O. NO. E170187B

LAB. NO. 140-5968 | Checked By: JV/KSN

DATE: 12-13-13 | Sheet 1 of 1

LOG OF TEST BORING

LAB NO.: 140- 5968 **PROJECT:** Glassell Park Synthetic Soccer Field

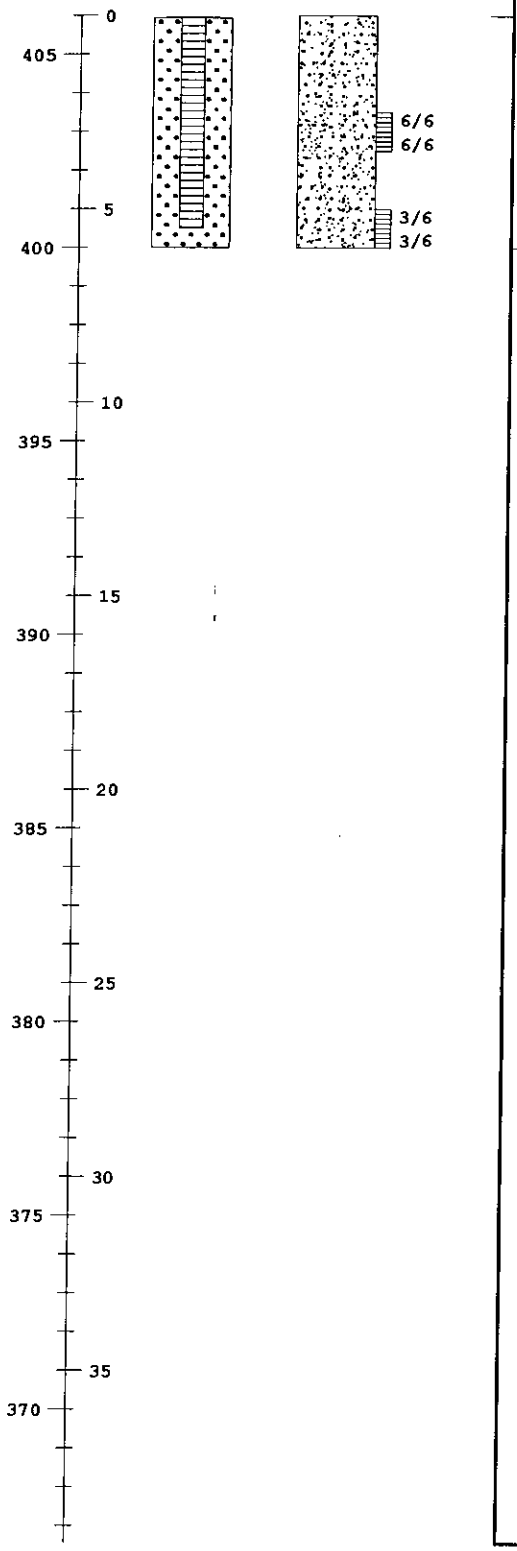
BORING NO.: B-1 **ELEV.:** 406' MSL **DATE:** 10/08/2013

BORING LOCATION: 243' SE/o SECF Verdugo Rd, 288' NE/o NECF Crestmoore Pl

DRILL RIG TYPE: CME-75HT using 9" diameter conventional flight augers

DRILLER: Ramirez **LOGGER:** Kunesh **ENGINEER:** None present

DEPTH TO WATER: None **DEPTH TO WATER SEEPAGE:** None



ELEVATION / DEPTH (ft)	WELL DETAILS	SOIL SYMBOLS, SAMPLER SYMBOLS AND BLOWS/INCHES	USCS	Field Description	Moist. %	Dens. Pcf
			SC	Dark brown clayey sand. Soil density decreasing with depth. Moist and firm.	8.1	
				Small angular siltstone bedrock fragments beginning at 3' depth.	11.8	112
					11.5	110

				No free water.		

				Test Boring Location Coordinates: 34° 06' 56.10" North 118° 13' 59.50" West		

				LEL reading = 0% & OVA reading = 0 ppm at all sampling depths.		

				Installed a 4" diameter PVC infiltration test well to a depth of 6', 5' slotted pipe, backfilled with # 3 sand.		

LOG OF TEST BORING

LAB NO.: 140- 5968 **PROJECT:** Glassell Park Synthetic Soccer Field

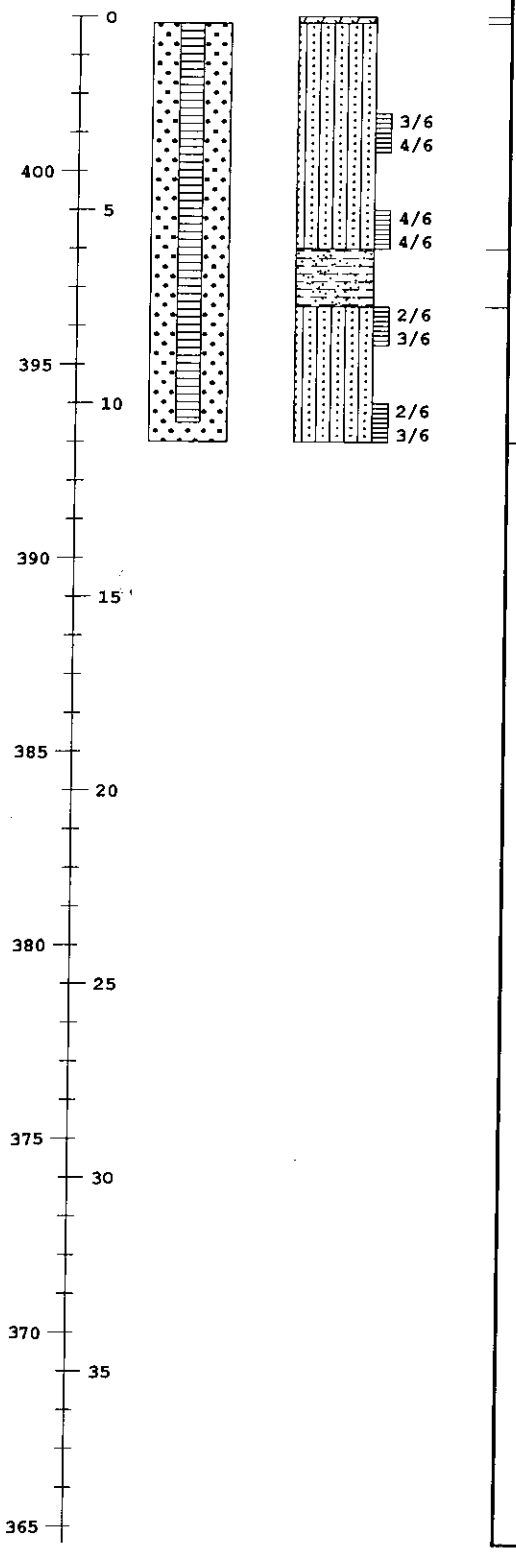
BORING NO.: B-2 **ELEV.:** 404' MSL **DATE:** 10/08/2013

BORING LOCATION: 162' SE/o SECF Verdugo Rd, 152' NE/o NECF Crestmoore Pl

DRILL RIG TYPE: CME-75HT using 9" diameter conventional flight augers

DRILLER: Ramirez **LOGGER:** Kunesh **ENGINEER:** None present

DEPTH TO WATER: None **DEPTH TO WATER SEEPAGE:** None



ELEVATION / DEPTH (ft)	WELL DETAILS	SOIL SYMBOLS, SAMPLER SYMBOLS AND BLOWS/INCHES	USCS	Field Description	Moist. %	Dens. Pcf
				2" Bermuda grass. FILL MATERIAL. Dark brown sandy lean clay with light tan mottling and small angular siltstone bedrock fragments.Soil density decreasing with depth. Moist and firm. Asphalt pavement fragments from 3'-6' depth.	14.9	107
					15.6	109
			SM	Medium brown poorly graded, silty fine sand with traces of clay binders. Silt content increasing with depth.		
			CL	Sandy lean clay.	11.8	113
					16.4	109
				--- No free water. --- Test Boring Location Coordinates: 34° 06' 55.53" North 118° 14' 01.15" West --- LEL reading = 0% & OVA reading = 0 ppm at all sampling depths. --- Gopher soil mounds in vicinity of B-2 --- Installed a 4" diameter PVC infiltration test well to a depth of 11', 10' slotted pipe, backfilled with # 3 sand.		

KEY TO SYMBOLS

Symbol	Description
Strata symbols	
	Clayey sands, sand-clay mixtures
	Bermuda Grass
	Inorganic clays or low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays
	Silty sands, sand-silt mixtures
Soil Samplers	
	Split Spoon

Symbol	Description
Monitor Well Details	
	flush-mount cover
	slotted pipe w/ sand
	silica sand, no pipe (end plug)

Notes:

1. Two exploratory borings were drilled on 10/08/2013 with a CME-75HT drill rig using 9" diameter conventional flight augers.

2. Water is not encountered during the drilling of this project.

3. Boring locations were provided by Geotechnical Engineering Gproup and verified by Standards.

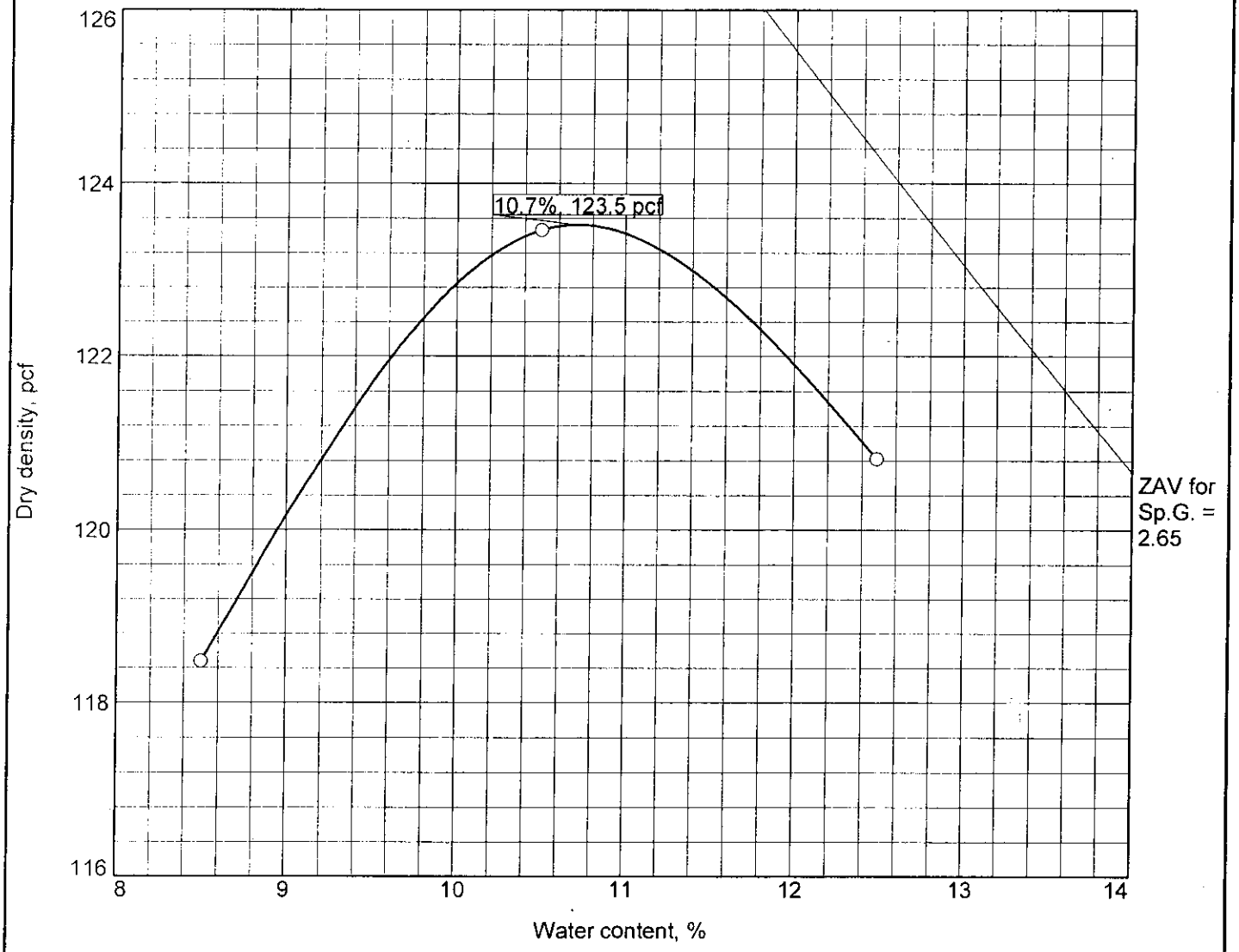
4. Abbreviations used on logs:

N/o =	north of	NCF =	north curb face	NE =	northeast
S/o =	south of	SCF =	south curb face	NW =	northwest
E/o =	east of	ECF =	east curb face	SE =	southeast
W/o =	west of	WCF =	west curb face	SW =	southwest
CL =	center line			PL =	property line
AC =	asphalt concrete			PCC =	Portland cement concrete
OVA =	organic vapor analyzer			LEL =	lower explosive limit
PPM =	parts per million			HT =	high torque

5. The stratification lines indicated on the boring maps and profiles represent the approximate boundary between material types and the transition may be gradual.

6. The materials, boundaries, and conditions have been established only at the boring locations, and are not necessarily representative of subsurface conditions elsewhere across the site.

COMPACTION TEST REPORT



Test specification: ASTM D 1557-12 Method B Modified

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > 3/8 in.	% < No.200
	USCS	AASHTO						
0 - 2.5'	SC			2.65				

TEST RESULTS	MATERIAL DESCRIPTION
Maximum dry density = 123.5 pcf Optimum moisture = 10.7 %	Clayey Sand

Project No. E170187B **Client:** GEO/PW

Project: GLASSELL PARK SYNTHETIC SOCCER FIELD

○ **Sample Number:** B-1 @ 0-2.5'

Remarks:

Date Sampled: 10-08-2013

Project: 140-5968

CITY OF LOS ANGELES - STANDARDS DIVISION

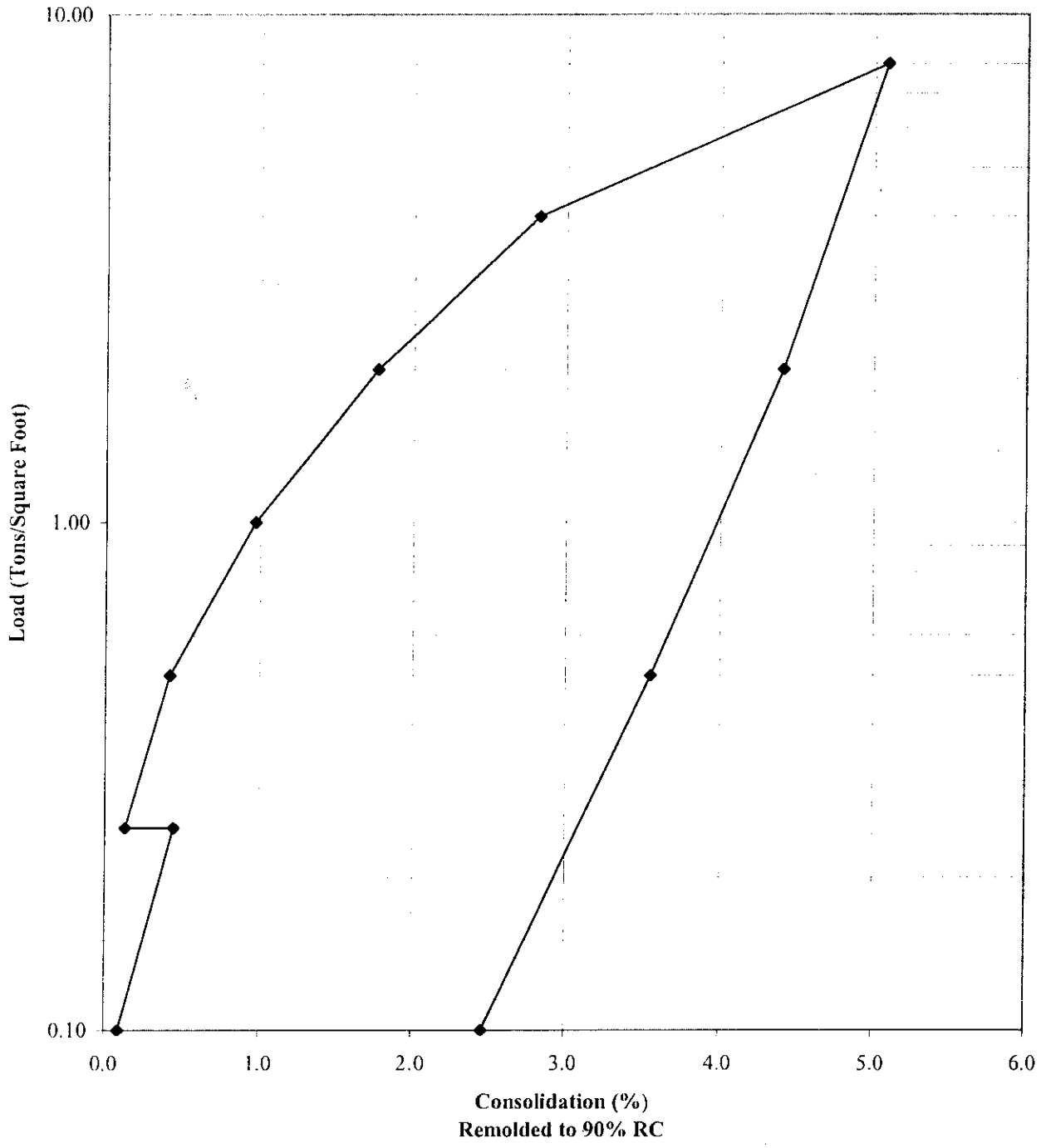
Figure 1

City of Los Angeles
Department of General Services
Standards Divison

CONSOLIDATION DIAGRAM

Job Title: Glassell Park Synthetic Soccer Field W.O. NO.: E170187B

BORING No.	DEPTH (Feet)	LOAD WATER ADDED (Tons per Square Foot)	IN-PLACE DRY DENSITY (Pounds per Cubic Foot)	MOISTURE	
				START	END
B-1	0-2.5	0.25	111.5	10.7%	17.3%

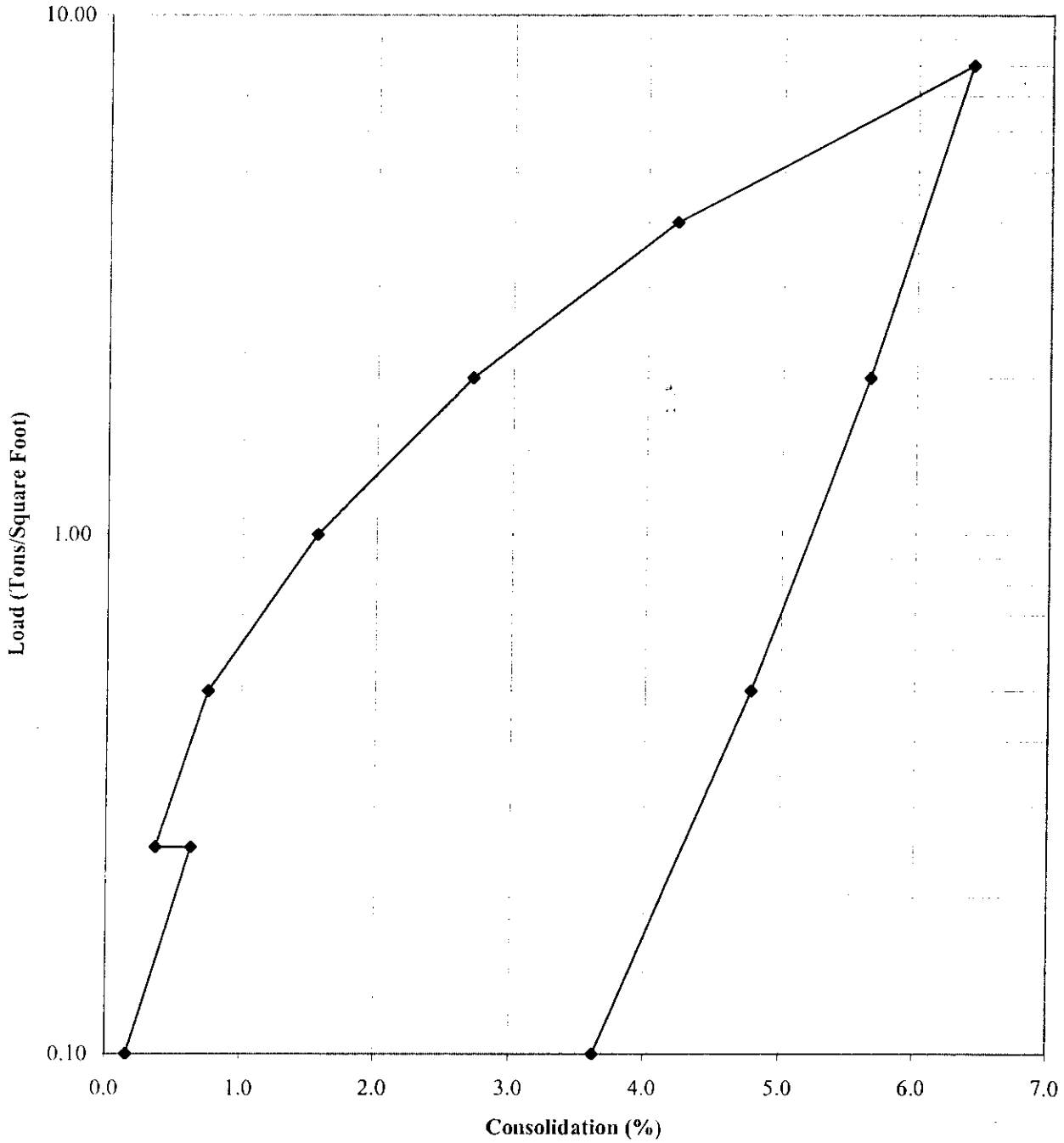


City of Los Angeles
Department of General Services
Standards Divison

CONSOLIDATION DIAGRAM

Job Title: Glassell Park Synthetic Soccer Field W.O. NO.: E170187B

BORING No.	DEPTH (Feet)	LOAD WATER ADDED (Tons per Square Foot)	IN-PLACE DRY DENSITY (Pounds per Cubic Foot)	MOISTURE	
				START	END
B-1	2.5	0.25	109.8	11.5%	16.8%



CITY OF LOS ANGELES
DEPARTMENT OF GENERAL SERVICES
STANDARDS DIVISION, SOILS TESTING LAB
2319 DORRIS PLACE, LOS ANGELES, CA 90031
(213) 485-2242

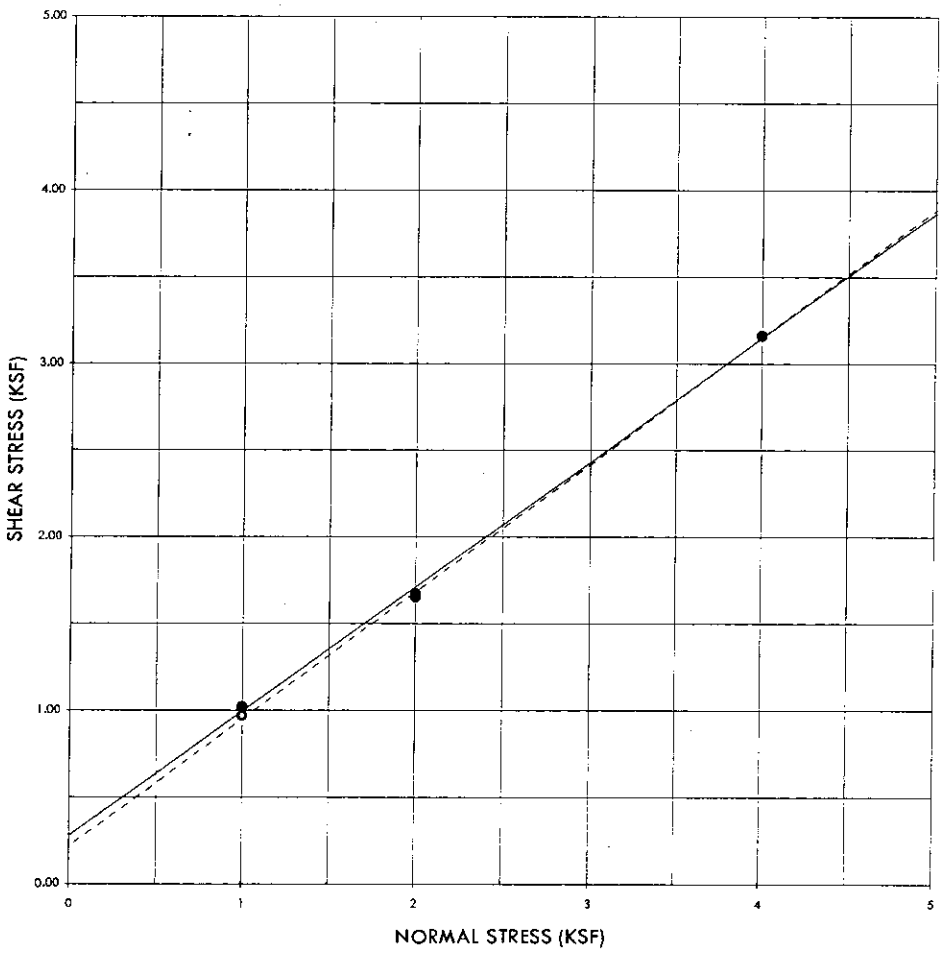
DIRECT SHEAR TEST REPORT (ASTM D 3080)

Project No.:	140-5968
WO No.:	E17087B
Project Title:	Glassell Park Synthetic Soccer Field
Boring No.:	B-1
Depth, feet:	0-2.5
Date Sampled:	10/8/2013
Diameter, in:	2.847
Soil Description:	Dark brown clayey sand.
Disp. Rate, in/min:	0.004
Dry Density, PCF:	111.5
Initial Moisture, %:	10.7%
Final Moisture, %:	21.7%
Test By:	mnr/egj
Remarks:	Undisturbed
	123.5 pcf @ 10.7% MC (LAB MAX)

SHEAR TEST RESULTS

legend: ——●—— - - ⊖ - -

NORMAL STRESS, KSF	PEAK SHEAR STRESS, KSF	FINAL SHEAR STRESS, KSF
1	1.02	0.97
2	1.67	1.65
4	3.16	3.16
C =	**0.28 ksf**	**0.22 ksf**
TAN Φ =	**0.72**	**0.73**
Φ =	**35.7°**	**36.3°**



CITY OF LOS ANGELES
DEPARTMENT OF GENERAL SERVICES
STANDARDS DIVISION, SOILS TESTING LAB
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Dry Density, PCF:	111.5
Initial Maisture, %:	10.7%
Final Moisture, %:	21.7%
Test By:	mnr/egj
Remarks:	Undisturbed
	123.5 pcf @ 10.7% MC (LAB MAX)

SHEAR TEST RESULTS

NORMAL STRESS, KSF	*PEAK SHEAR STRESS, KSF*	*FINAL SHEAR STRESS, KSF*
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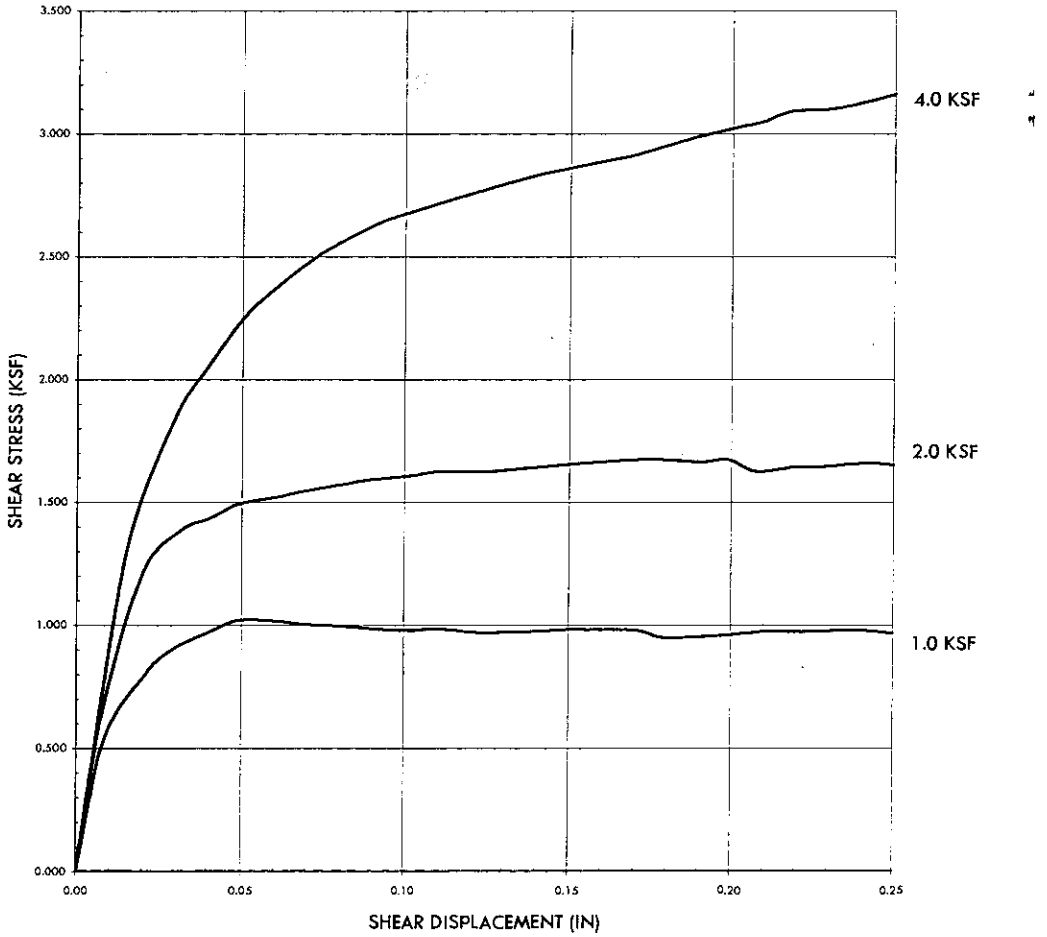
4	3.16	3.16
C =	**0.28 ksf**	**0.22 ksf**
TAN Φ =	**0.72**	**0.73**
Φ =	**35.7°**	**36.3°**



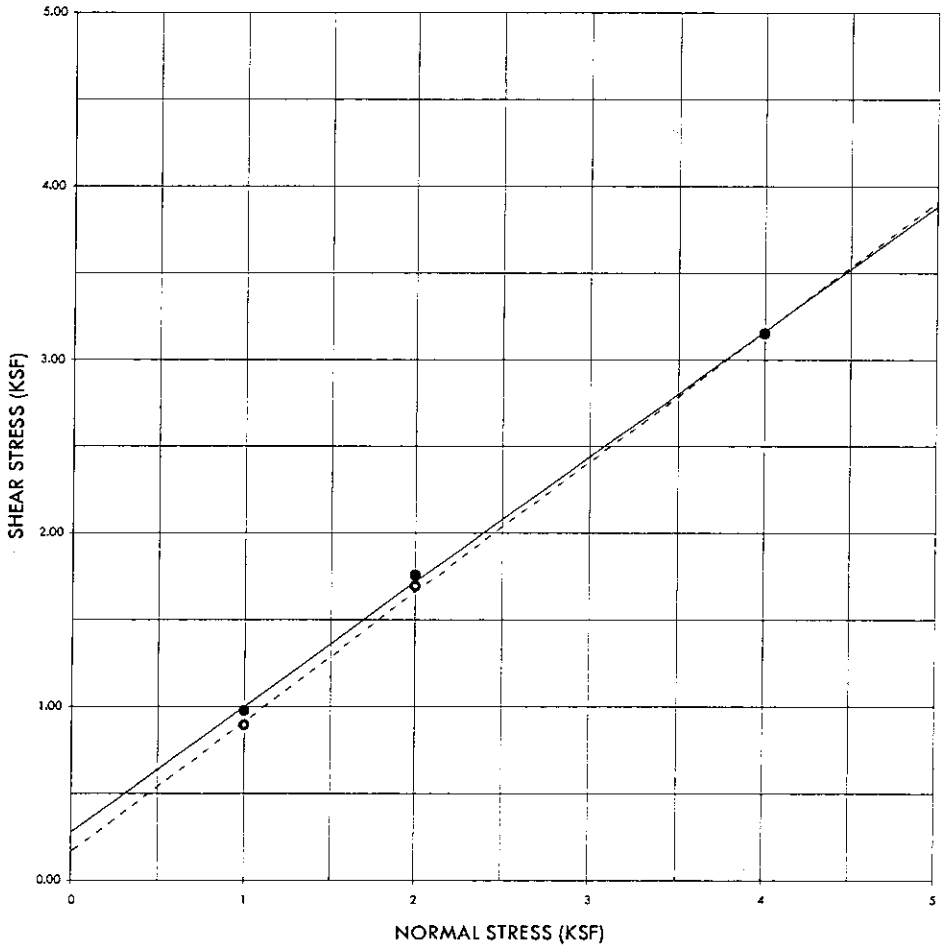
CITY OF LOS ANGELES
DEPARTMENT OF GENERAL SERVICES
STANDARDS DIVISION, SOILS TESTING LAB
2319 DORRIS PLACE, LOS ANGELES, CA 90031
(213) 485-2242

DIRECT SHEAR TEST REPORT (ASTM D 3080)

Project No.:	140-5968
WO No.:	E17087B
Project Title:	Glassell Park Synthetic Soccer Field
Boring No.:	B-2
Depth, feet:	7.5
Date Sampled:	10/8/2013
Diameter, in:	2.847
Soil Description:	Medium brawn lean clay with sand.
Disp. Rate, in/min:	0.002
Dry Density, PCF:	113.3
Initial Moisture, %:	11.8%
Final Moisture, %:	17.4%
Test By:	mnr
Remarks:	Undisturbed

SHEAR TEST RESULTS

legend:	—●—	- - ⊖ - -
NORMAL STRESS, KSF	*PEAK SHEAR STRESS, KSF*	*FINAL SHEAR STRESS, KSF*
1	0.98	0.90
2	1.76	1.69
4	3.15	3.15
C =	**0.28 ksf**	**0.17 ksf**
TAN Φ =	**0.72**	**0.75**
Φ =	**35.8°**	**36.8°**



CITY OF LOS ANGELES
DEPARTMENT OF GENERAL SERVICES
STANDARDS DIVISION, SOILS TESTING LAB
2319 DORRIS PLACE, LOS ANGELES, CA 90031
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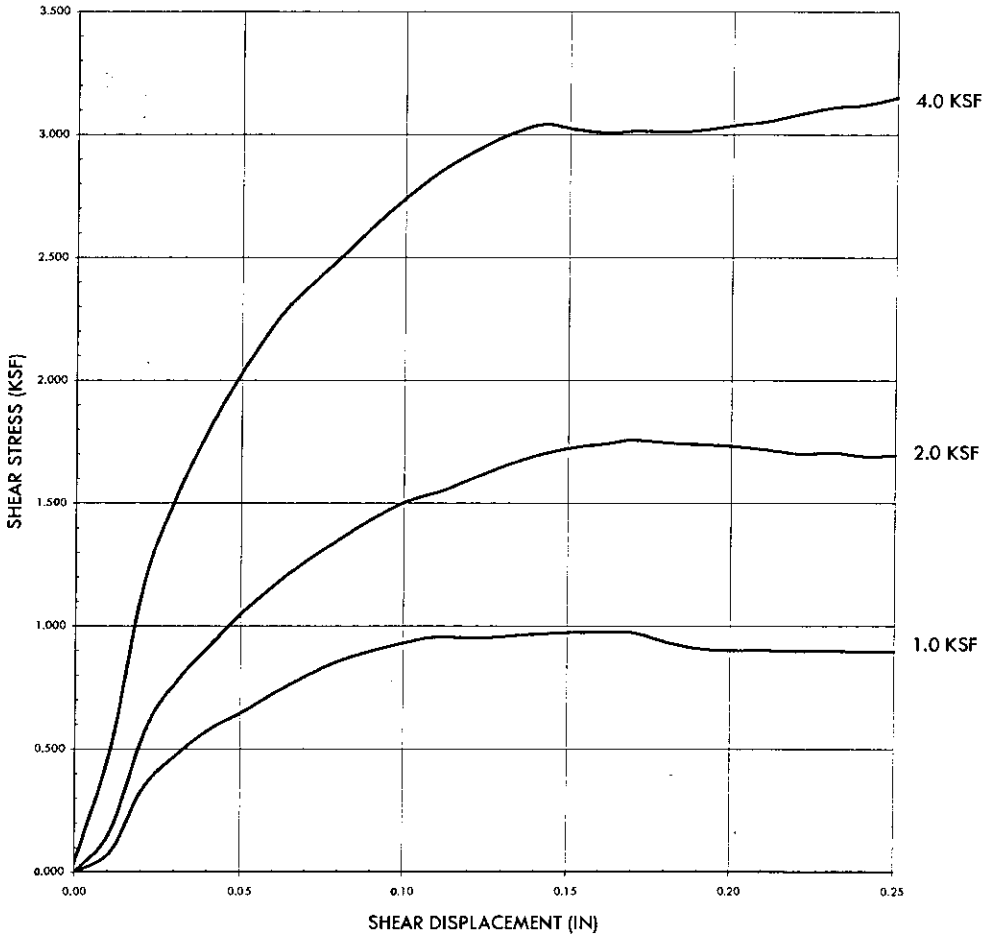
DIRECT SHEAR TEST REPORT (ASTM D 3080)

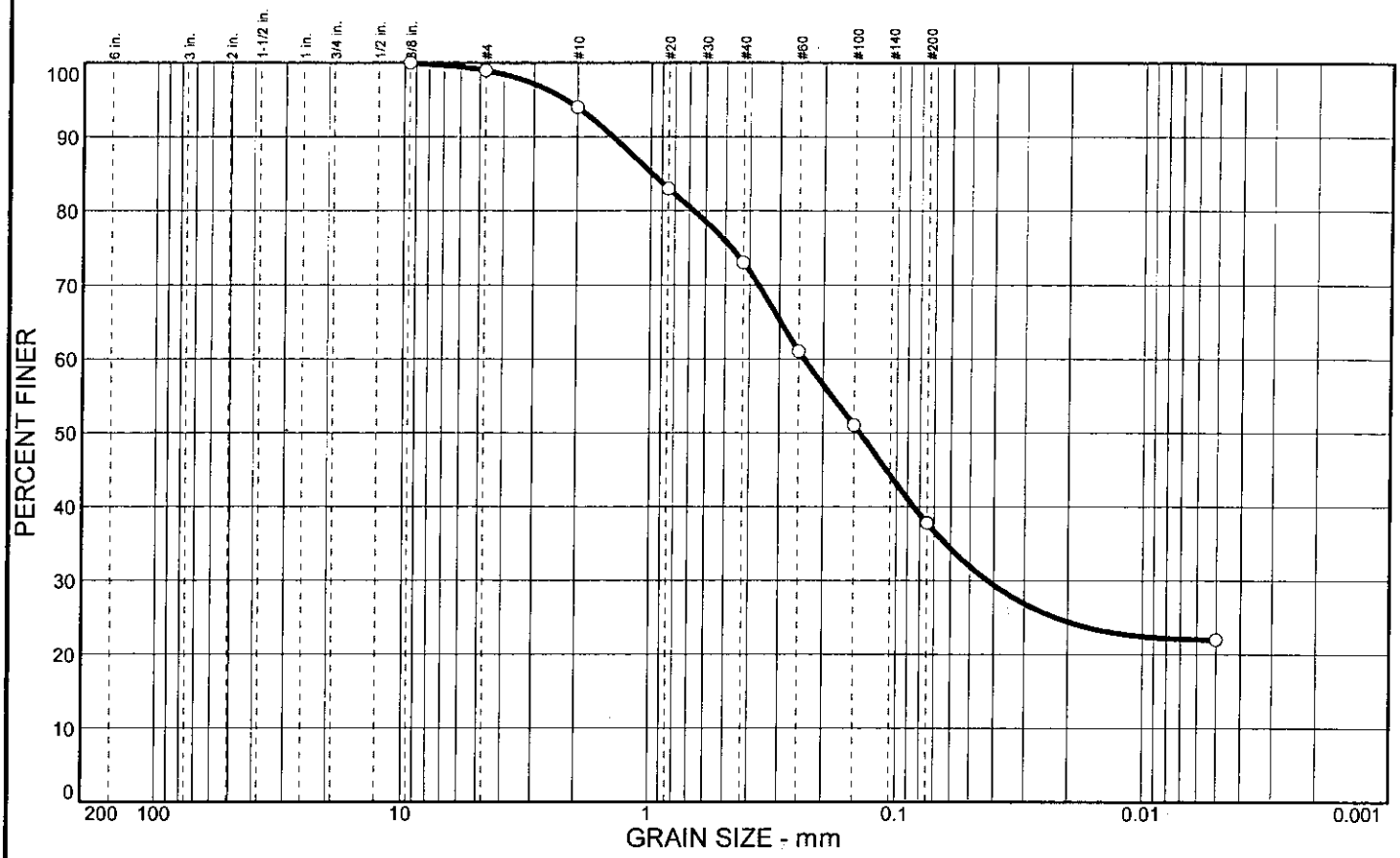
Project No.:	140-5968
WO No.:	E17087B
Project Title:	Glassell Park Synthetic Soccer Field
Boring No.:	B-2
Depth, feet:	7.5
Date Sampled:	10/8/2013
Diameter, in:	2.847
Soil Description:	Medium brown lean clay with sand.
Disp. Rate, in/min:	0.002
Dry Density, PCF:	113.3
Initial Moisture, %:	11.8%
Final Moisture, %:	17.4%
Test By:	mnr
Remarks:	Undisturbed

SHEAR TEST RESULTS

NORMAL STRESS, KSF	PEAK SHEAR STRESS, KSF	FINAL SHEAR STRESS, KSF
1	0.98	0.90
2	1.76	1.69
4	3.15	3.15
C =	**0.28 ksf**	**0.17 ksf**
TAN Φ =	**0.72**	**0.75**
Φ =	**35.8°**	**36.8°**



STANDARDS DIVISION: Particle Size Distribution Report



	% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○		1.0	61.2	15.8	22.0	SC		19	35

SIEVE inches size	PERCENT FINER ○		
3/8"	100.0		
GRAIN SIZE			
D_{60}	0.239		
D_{30}	0.0423		
D_{10}			
COEFFICIENTS			
C_c			
C_u			

SIEVE number size	PERCENT FINER ○		
#4	99.0		
#10	94.0		
#20	83.0		
#40	73.0		
#60	61.0		
#100	51.0		
#200	37.8		

SOIL DESCRIPTION

○ Clayey sand

REMARKS:

○

○ Location: T.H. NO. B-1 @ 0-2.5 DEPTH

CITY OF LOS ANGELES - STANDARDS DIVISION

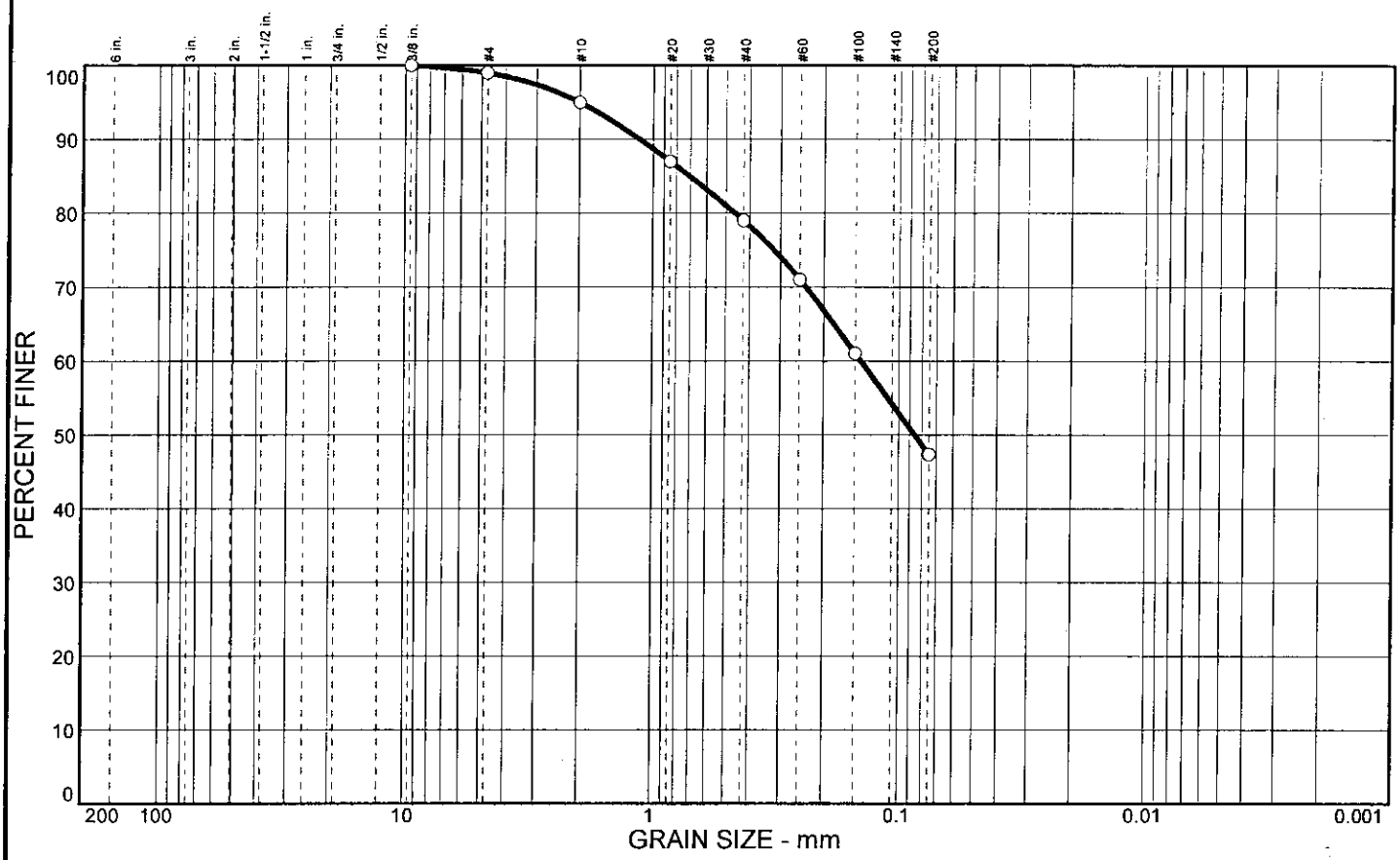
Client: Geotechnical Engineering Group

Project: Glassell Park Synthetic Soccer Field

Project No.: E170187B

Figure B1@0-2.5

STANDARDS DIVISION: Particle Size Distribution Report



	% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○		1.0	51.7	47.3		SC		15	35

SIEVE inches size	PERCENT FINER ○		
3/8"	100.0		
	GRAIN SIZE		
D_{60}	0.143		
D_{30}			
D_{10}			
	COEFFICIENTS		
C_C			
C_u			

SIEVE number size	PERCENT FINER ○		
#4	99.0		
#10	95.0		
#20	87.0		
#40	79.0		
#60	71.0		
#100	61.0		
#200	47.3		

SOIL DESCRIPTION

○ Clayey sand

REMARKS:

○

○ Location: T.H. NO. B-1 @ 2.5 DEPTH

CITY OF LOS ANGELES - STANDARDS DIVISION

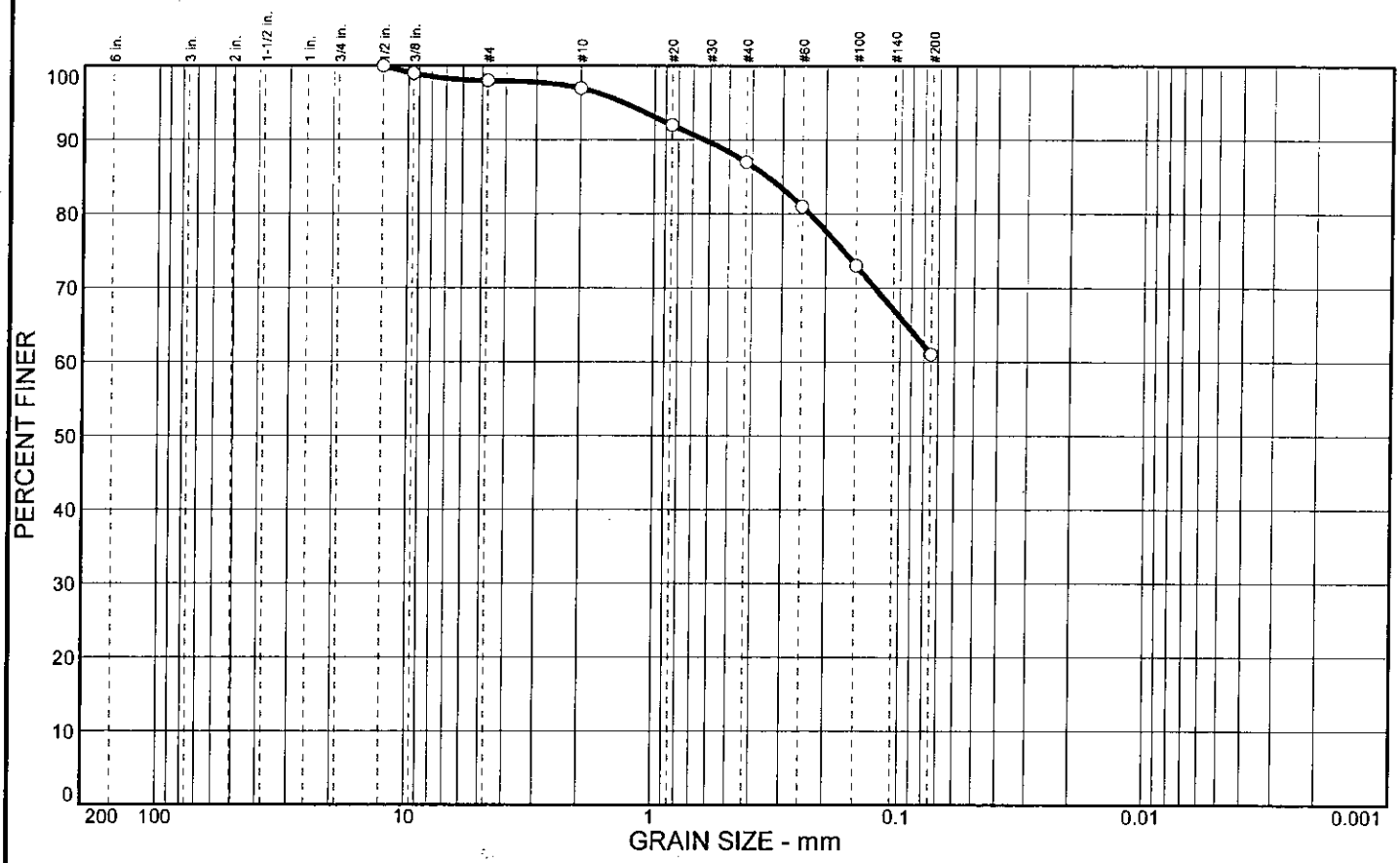
Client: Geotechnical Engineering Group

Project: Glassell Park Synthetic Soccer Field

Project No.: E170187B

Figure B1@2.5

STANDARDS DIVISION: Particle Size Distribution Report



	% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○		2.0	37.0	61.0		CL		16	37

SIEVE inches size	PERCENT FINER ○		
1/2"	100.0		
3/8"	99.0		
	GRAIN SIZE		
D_{60}			
D_{30}			
D_{10}			
	COEFFICIENTS		
C_c			
C_u			

SIEVE number size	PERCENT FINER ○		
#4	98.0		
#10	97.0		
#20	92.0		
#40	87.0		
#60	81.0		
#100	73.0		
#200	61.0		

SOIL DESCRIPTION

○ Sandy lean clay

REMARKS:

○

○ Location: T.H. NO. B-2 @ 2.5 DEPTH

CITY OF LOS ANGELES - STANDARDS DIVISION

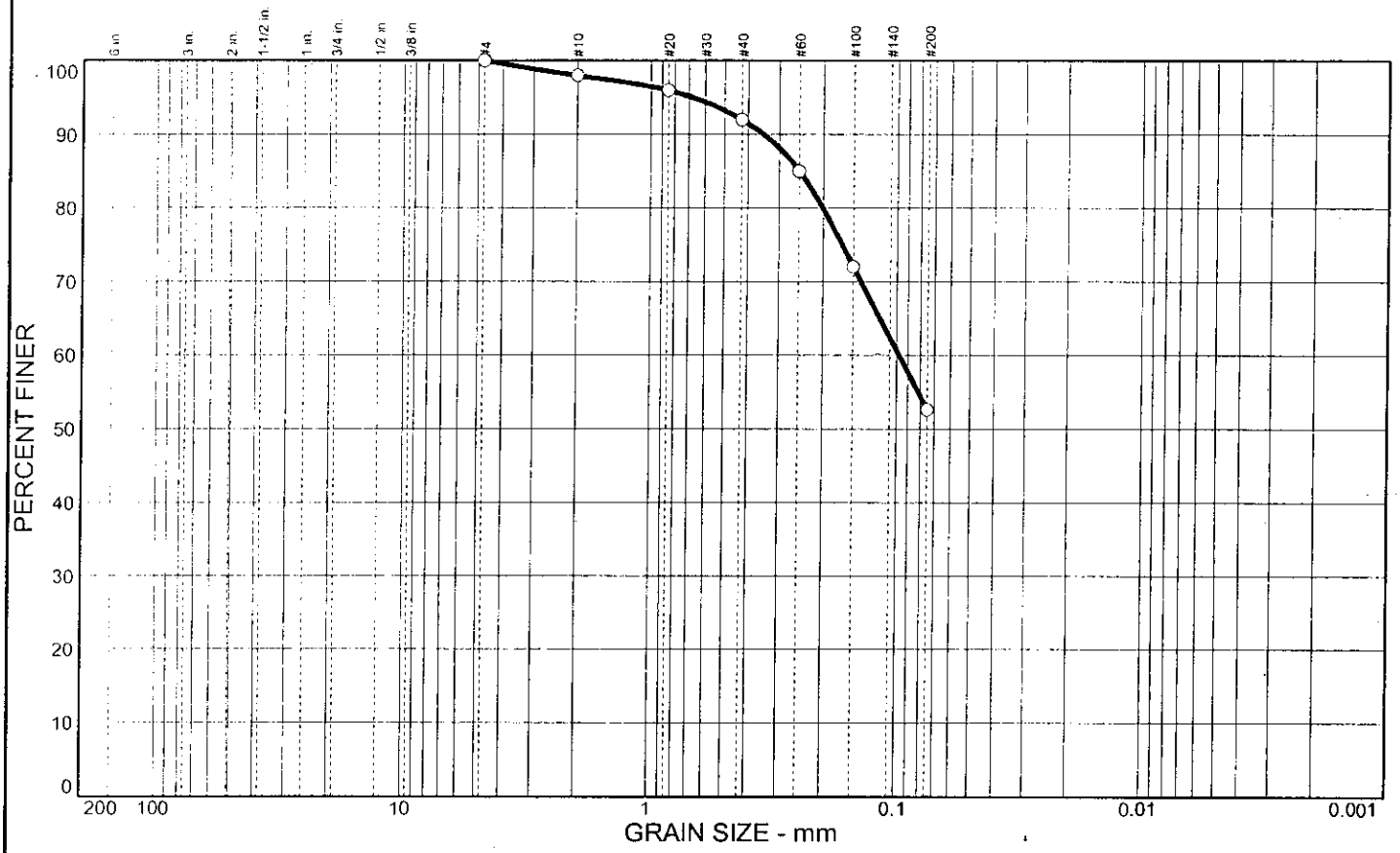
Client: Geotechnical Engineering Group

Project: Glassell Park Synthetic Soccer Field

Project No.: E170187B

Figure B2@2.5

STANDARDS DIVISION: Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
		47.4	52.6		CL		14	25

SIEVE inches size	PERCENT FINER ○		
	GRAIN SIZE		
D_{60}	0.0978		
D_{30}			
D_{10}			
	COEFFICIENTS		
C_c			
C_u			

SIEVE number size	PERCENT FINER ○		
#4	100.0		
#10	98.0		
#20	96.0		
#40	92.0		
#60	85.0		
#100	72.0		
#200	52.6		

SOIL DESCRIPTION

○ Sandy lean clay

REMARKS:

○

Location: T.H. NO. B-2 @ 7.5 DEPTH

CITY OF LOS ANGELES - STANDARDS DIVISION

Client: Geotechnical Engineering Group

Project: Glassell Park Synthetic Soccer Field

Project No.: E170187B

Figure B2@7.5

PERCOLATION TEST DATA

Project Title: GLASSELL PARK SYNTHETIC SOCCER FIELD
Work Order No.: E170187B

Location ID: TW-1 Date: 10/18/2013
Total Borehole Depth: 78" Test Personnel: J. Kunesh

Comments: Percolation Zone from 24"-78" depth
(Official Test)

GPS Coordinates: North 34° 06' 56.10" West 118° 13' 59.50"

Clock Time (hh:mm)	Total Test Time (min)	Increment of Time (min)	Total Cumulative Water added (gallons)	Incremental Water Added (gallons)	Average Incremental Flow Rate (gal/min)
8:15	0	0	0	0	0.000
8:20	5	5	0.65	0.65	0.130
8:25	10	5	1.25	0.60	0.120
8:30	15	5	1.79	0.54	0.108
8:35	20	5	2.31	0.52	0.104
8:40	25	5	2.75	0.44	0.088
8:45	30	5	3.21	0.46	0.092
8:50	35	5	3.70	0.49	0.098
8:55	40	5	4.23	0.53	0.106
9:00	45	5	4.64	0.41	0.082
9:05	50	5	5.22	0.58	0.116
9:10	55	5	5.72	0.50	0.100
9:15	60	5	6.30	0.58	0.116
9:20	65	5	6.80	0.50	0.100
9:25	70	5	7.32	0.52	0.104
9:30	75	5	7.90	0.58	0.116
9:35	80	5	8.42	0.52	0.104
9:40	85	5	8.99	0.57	0.114
9:45	90	5	9.49	0.50	0.100
9:50	95	5	10.02	0.53	0.106
9:55	100	5	10.57	0.55	0.110
10:00	105	5	11.11	0.54	0.108
10:05	110	5	11.70	0.59	0.118
10:10	115	5	12.30	0.60	0.120
10:15	120	5	12.96	0.66	0.132
10:20	125	5	13.50	0.54	0.108
10:25	130	5	14.08	0.58	0.116
10:30	135	5	14.57	0.49	0.098
10:35	140	5	15.16	0.59	0.118
10:40	145	5	15.76	0.60	0.120
10:45	150	5	16.34	0.58	0.116
10:50	155	5	16.96	0.62	0.124
10:55	160	5	17.54	0.58	0.116
11:00	165	5	18.10	0.56	0.112

PERCOLATION TEST DATA

Project Title: GLASSELL PARK SYNTHETIC SOCCER FIELD Work Order No.: E170187B

Location ID: TW-1 Total Borehole Depth: 78"

Comments: Percolation Zone from 24"-78" depth (Official Test)

GPS Coordinates: North 34° 06' 56.10" West 118° 13' 59.50"

Clock Time (hh:mm)	Total Test Time (min)	Increment of Time (min)	Total Cumulative Water added (gallons)	Incremental Water Added (gallons)	Average Incremental Flow Rate (gal/min)
11:05	170	5	18.70	0.60	0.120
11:10	175	5	19.28	0.58	0.116
11:15	180	5	19.86	0.58	0.116
11:25	190	10	21.00	1.14	0.114
11:35	200	10	22.12	1.12	0.112
11:45	210	10	23.25	1.13	0.113
11:55	220	10	24.43	1.18	0.118
12:05	230	10	25.68	1.25	0.125
12:15	240	10	26.84	1.16	0.116
12:25	250	10	28.02	1.18	0.118
12:35	260	10	29.20	1.18	0.118
12:45	270	10	30.40	1.20	0.120
12:55	280	10	31.58	1.18	0.118
13:05	290	10	32.80	1.22	0.122
13:15	300	10	34.00	1.20	0.120
13:25	310	10	35.16	1.16	0.116
13:35	320	10	36.33	1.17	0.117
13:45	330	10	37.47	1.14	0.114
13:55	340	10	38.65	1.18	0.118
14:05	350	10	39.78	1.13	0.113
14:15	360	10	40.94	1.16	0.116
14:30	375	15	42.65	1.71	0.114
14:45	390	15	44.40	1.75	0.117
15:00	405	15	46.15	1.75	0.117
15:15	420	15	47.81	1.66	0.111
15:30	435	15	49.50	1.69	0.113
15:45	450	15	51.32	1.82	0.121
16:00	465	15	53.00	1.68	0.112
16:15	480	15	54.69	1.69	0.113

END OF TEST

Notes:

a) 5 Gallons of water added prior to test period - establish head 12" below ground surface

b) Diameter of percolation zone - 9 inches

c) Test well TW-1 established at original B-1 soil boring location

PERCOLATION TEST DATA

Project Title: GLASSELL PARK SYNTHETIC SOCCER FIELD
Work Order No.: E170187B
Location ID: TW-2 Date: 10/24/2013
Total Borehole Depth: 138" Test Personnel: J. Kunesh
Comments: Percolation Zone from 24"-138" depth
(Official Test)
GPS Coordinates: North 34° 06' 55.53" West 118° 14' 01.1"

Clock Time (hh:mm)	Total Test Time (min)	Increment of Time (min)	Total Cumulative Water added (gallons)	Incremental Water Added (gallons)	Average Incremental Flow Rate (gal/min)
8:10	0	0	0	0	0.000
8:15	5	5	4.62	4.62	0.924
8:20	10	5	8.46	3.84	0.768
8:25	15	5	12.63	4.17	0.834
8:30	20	5	16.55	3.92	0.784
8:35	25	5	20.40	3.85	0.770
8:40	30	5	24.27	3.87	0.774
8:45	35	5	28.06	3.79	0.758
8:50	40	5	31.89	3.83	0.766
8:55	45	5	35.60	3.71	0.742
9:00	50	5	39.46	3.86	0.772
9:05	55	5	43.14	3.68	0.736
9:10	60	5	46.86	3.72	0.744
9:15	65	5	50.54	3.68	0.736
9:20	70	5	54.30	3.76	0.752
9:25	75	5	57.95	3.65	0.730
9:30	80	5	61.71	3.76	0.752
9:35	85	5	65.44	3.73	0.746
9:40	90	5	69.03	3.59	0.718
9:45	95	5	72.65	3.62	0.724
9:50	100	5	76.29	3.64	0.728
9:55	105	5	80.04	3.75	0.750
10:00	110	5	83.54	3.50	0.700
10:05	115	5	87.28	3.74	0.748
10:10	120	5	90.84	3.56	0.712
10:15	125	5	94.50	3.66	0.732
10:20	130	5	98.09	3.59	0.718
10:25	135	5	101.79	3.70	0.740
10:30	140	5	105.43	3.64	0.728
10:35	145	5	108.90	3.47	0.694
10:40	150	5	112.50	3.60	0.720
10:45	155	5	116.18	3.68	0.736
10:50	160	5	119.72	3.54	0.708
10:55	165	5	123.31	3.59	0.718

PERCOLATION TEST DATA

Project Title: GLASSELL PARK SYNTHETIC SOCCER FIELD
Work Order No.: E170187B
Location ID: TW-2
Total Borehole Depth: 138"
Comments: Percolation Zone from 24"-138" depth
(Official Test)
GPS Coordinates: North 34° 06' 55.53" West 118° 14' 01.1"

Clock Time	Total Test Time	Increment of Time	Total Cumulative Water added	Incremental Water Added	Average Incremental Flow Rate
(hh:mm)	(min)	(min)	(gallons)	(gallons)	(gal/min)
11:00	170	5	126.90	3.590	0.718
11:05	175	5	130.32	3.420	0.684
11:10	180	5	133.98	3.660	0.732
11:20	190	10	141.09	7.110	0.711
11:30	200	10	148.17	7.080	0.708
11:40	210	10	155.18	7.010	0.701
11:50	220	10	162.24	7.060	0.706
12:00	230	10	169.45	7.210	0.721
12:10	240	10	176.49	7.040	0.704
12:20	250	10	183.63	7.140	0.714
12:30	260	10	190.84	7.21	0.721
12:40	270	10	197.88	7.04	0.704
12:50	280	10	205.06	7.18	0.718
13:00	290	10	212.01	6.95	0.695
13:10	300	10	219.01	7.00	0.700
13:20	310	10	226.15	7.14	0.714
13:30	320	10	233.24	7.09	0.709
13:40	330	10	240.34	7.10	0.710
13:50	340	10	247.40	7.06	0.706
14:00	350	10	254.41	7.01	0.701
14:10	360	10	261.46	7.05	0.705
14:25	375	15	271.87	10.41	0.694
14:40	390	15	282.50	10.63	0.709
14:55	405	15	292.82	10.32	0.688
15:10	420	15	303.45	10.63	0.709
15:25	435	15	313.96	10.51	0.701
15:40	450	15	324.40	10.44	0.696
15:55	465	15	334.90	10.50	0.700
16:10	480	15	345.40	10.50	0.700

END OF TEST

Notes:

a) 11 1/2 Gallons of water added prior to test period - establish head 12" below ground surface
b) Diameter of percolation zone - 9 inches
c) Test well TW-2 established at original B-2 soil boring location

Lab No.: 140-5968

CITY OF LOS ANGELES
DEPARTMENT OF GENERAL SERVICES
STANDARDS DIVISION
2319 DORRIS PLACE
LOS ANGELES
(213) 485-2242

TEST BORING DATA

Job Title: Glassell Park Synthetic Soccer Field

Work Order No: E170187B

Test Boring No.	B-1			B-2			
Sample Depth, ft.	0-2.5	2.5	5	2.5	5	7.5	10
In Place Dry Density, pcf		112.1	109.8	107.3	108.9	113.3	109.4
Field Moisture, %	8.1	11.8	11.5	14.9	15.6	11.8	16.4
Lab Max Dry Density, pcf	123.5						
Lab Optimum Moisture, %	10.7						
Expansion Index, EI	13.0						
Mechanical Analysis (% passing)							
3/4"	100	100		100			
No. 4	99	99		98		100	
No. 10	94	95		97		98	
No. 20	83	87		92		96	
No. 40	73	79		87		92	
No. 60	61	71		81		85	
No. 100	51	61		73		72	
No. 200	37.8	47.3		61.0		52.6	
5 μ (micron), %	22						
Liquid Limit, %	35	35		37		25	
Plasticity Index, %	16	20		21		11	