APPENDIX IV.C

Geotechnical Study

Converse Consultants

Over 50 Years of Dedication in Geotechnical Engineering and Environmental Sciences

REVISED GEOTECHNICAL INVESTIGATION REPORT

Herald Examiner Buildings and 12th Street Building

1111 South Broadway, 1108 South Hill Street
& 1201 Main Street
Los Angeles, California

PREPARED FOR

Herald Examiner Development, LLC
C/O Urban Partners
304 South Broadway, Suite 400
Los Angeles, California 90013

Converse Project No. 04-31-240-02

July 29, 2005

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Converse Consultants
Over 50 Years of Dedication in Geotechnical Engineering and Environmental Sciences

January 29, 2005

Herald Examiner Development, LLC
C/O Urban Partners
304 South Broadway, Suite 400
Los Angeles, California 90013

Attention: Mr. Robert Lyons

Subject: **REVISED GEOTECHNICAL INVESTIGATION REPORT**
Herald Examiner Buildings and 12th Street Building
1111 South Broadway, 1108 South Hill Street & 1201 Main Street
Los Angeles, California
Converse Project No. 04-31-240-02

Mr. Lyons:

We are pleased to present our revised geotechnical investigation report for the proposed Redevelopment of the existing Herald Examiner Building at the southwesterly corner of 11th Street and Broadway and the two proposed mixed use buildings at the southeasterly corner of 11th Street and Hill Street and the southwesterly corner of 12th Street and Main Street, in the Downtown Area of the City of Los Angeles, California. This report was prepared in accordance with our February 10, 2005 proposal and your subsequent notice to proceed.

Subsequent to our original issuance of this report dated January 21, 2005, Converse was notified that there had been significant changes in the project concept. This report has been revised accordingly in order to address the concept changes.

It is our opinion that the subject site can be developed from a geotechnical standpoint to support the proposed development, provided the findings, conclusions, and recommendations presented in this report are incorporated in the preparation of the final grading plan, foundation design, and construction of the project.

Thank you for this opportunity to be of continued service. If you have any questions, or if we can be of additional service, please do not hesitate to contact us.

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EXECUTIVE SUMMARY

The following is a summary of our Geotechnical Investigation, Findings, Conclusions, and Recommendations, as presented in the body of this report. This summary is presented for the cursory review of the investigation report and may not be adequate for other purposes. The summary should not be used separately for design and/or construction. Please refer to the appropriate sections of the report for complete conclusions and recommendations. In the event of a conflict between this summary and the report, or an omission in the summary, the report shall prevail.

- The subject projects are considered suitable from a geotechnical engineering viewpoint, provided that the recommendations presented in the attached report are incorporated into the design and construction.

- The field exploration for the geotechnical investigation consisted of drilling ten exploratory borings to depths ranging from approximately 31.5 to 120. 2 feet below the existing ground surface on December 6 and 7, 2004 and April 23 through 26, 2005. Subsurface conditions encountered in the borings were logged and classified in the field by visual/manual examination, in accordance with the Unified Soil Classification System.

- Laboratory testing of soil samples collected during the geotechnical investigation included moisture and density determinations, sieve analysis, hydrometer, compaction, direct-shear strength, consolidation, expansion index, pH, minimum electrical resistivity, soluble sulfate, and chloride concentration testing.

- The sites are not within a currently designated State of California Fault-Rupture Hazard Zone. The nearest special studies zone is associated with the Newport-Inglewood fault zone, located approximately 10.6 kilometers southeasterly of the subject site. In addition, the Hollywood fault is about 8.5 kilometers northerly of the site. This fault is not within a special study zone. Due to the close proximity of the site to these faults, there is a high probability of strong shaking at the site during a large seismic event. Site parameters for seismic design by the 2002 Los Angeles City Building Code are provided in the report.

- Groundwater was not encountered during this investigation and is not expected to affect the proposed structure. The depth to historical high groundwater as reported in the Seismic Hazard Evaluation Report for the Hollywood Quadrangle is on the order of 120 feet below the ground surface.

- As a result of the apparent soil density and the absence of shallow groundwater, the potential for soil liquefaction at the site is considered to be very low.

- Evidence of shallow fill was identified in the five borings (BH-1, BH-2, BH-3, BH-7 and BH-8) drilled as part of this investigation adjacent to the existing Herald Examiner Buildings and three of the borings (BH-4, BH-9 and BH-10)drilled on the 12th Street property. It is assumed that fill exists at other locations on the property as result of backfilling around the existing basement and as a result of past uses of the property.

- The underlying alluvial soils encountered during this investigation consisted of Gravelly Sand (SP), Sand (SP), Sand with Silt (SP-SM), Clayey Sand (SC), and Lean Clay (CL).

- Laboratory test results indicate that the on-site near-surface soils possess a very low to medium expansion potential, as defined by the Los Angeles Building Code. As a result, special design and/or construction for expansive soil conditions on this project are considered necessary and have been incorporated into the recommendations presented in the report.

- The existing buildings are assumed to be supported on conventional shallow footings.

- An allowable net soil bearing capacity for footings may vary from 4,000 to 10,000 pounds per square foot under the conditions described in the report.

- Backfill placed behind basement walls should be low-expansive soils. Backfill should be compacted to a minimum of 90 percent relative compaction or 95 percent relative compaction in accordance with City of Los Angeles criteria if imported sand is used for backfill.

- Surface drainage should be sloped away from the structure. Ponding of surface water should not be allowed adjacent to the structure.

- Temporary construction slopes, greater than three feet in height, should be sloped or shored in accordance with the requirements of CAL-OSHA. Due to site constrains it is believed that sloping of the excavation walls for the full depth of the basement will not be possible and as a result shoring with possibly tieback anchors is anticipated. Recommendations for design and construction of shoring are presented in the report.

- Underpinning of the footings for the existing Broadway building is expected to be necessary to allow construction of the adjacent subterranean parking basement. In lieu of underpinning, surcharge pressures from the footings will have to be added to the lateral earth pressures for the basement wall and temporary shoring.

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1111 South Broadway, 1108 South Hill Street & 1201 Main Street
Los Angeles, California
Converse Project No. 04-31-240-01

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1.0 INTRODUCTION

This report presents results of a geotechnical investigation performed by Converse Consultants (Converse) for the proposed redevelopment of the existing Herald Examiner Buildings for residential and commercial use and the proposed construction of the a multi-use building at the 12th Street and Main Street property. The purposes of this investigation were to determine the nature and engineering properties of the earth materials at this site, and to provide geotechnical recommendations for design and construction of the proposed structures.

At the time of our original investigation into the subsurface conditions at the two sites, the project concept was to renovate both of the two existing Herald Examiner Buildings adjacent to the southerly side of 11th Street and build a new building at the 12th Street site. The building concept for the 12th Street site consisted of one level of subterranean parking over approximately five mixed-use levels above the ground surface. Subsequent to Converse completing the geotechnical investigation for these structures and submitting a report dated January 21, 2005, we were informed that there had been significant changes to the project concept.

The current project concept calls for renovating only the historical Broadway Building, replacing the existing Press Building with a high rise building and construction a similar high rise building at the 12th Street site. Accordingly, Converse has performed additional subsurface exploration, laboratory testing, engineering analysis and revised the geotechnical investigation report.

This report is for the proposed development described herein, and is intended for use by Herald Examiner Development, LLC, Urban Partners, the Hearst Corporation and their design professionals. Since this report is intended for use by the designer(s), it should be recognized that it is impossible to include all construction details in this report at this phase of the project. Additional consultation may be prudent to interpret these findings for contractors, or possibly refine these recommendations based upon the final design and actual conditions encountered during construction.

2.0 SITE/PROJECT DESCRIPTION

The general location of the site is shown on Figure No. 1, *"Site Location Map"*.

The existing Herald Examiner Buildings are located along the southerly side of 11th Street between Broadway and South Hill Street in the Downtown Area of the City of Los Angeles. Renovation of the existing four-level historic Herald Examiner "Broadway Building located on the easterly half of the property, adjacent to Broadway, will be converted to 52 "loft style" Apartments. It is expected that new footings and shear walls will be required in order to conform with current seismic code requirements

The existing four-level Press Building, on the westerly half of the property will now be demolished and replaced with a new high rise building (Hill Street Building). The new "Hill Street" building will have five levels of subterranean parking, one level of retail at the ground surface and 21 levels of residential above the retail. The top of the building will be approximately 240 feet above the ground surface. Maximum depth of excavation necessary to construct the subterranean parking levels is expected to be on the order of 60 to 70 feet below the adjacent ground surface. The excavation for the new subterranean levels will extend to approximately the property line on three sides and up to the existing Broadway building on the easterly side.

The southerly site is located on the southerly side of West 12th Street between South Broadway and South Main Street. This site is currently occupied by an asphalt concrete paved parking lot. Revised development plans call for the construction of a new tower building with two levels of subterranean parking and between 28 and 36 stories of residential units above the ground surface. The excavation for the new subterranean levels will extend to approximately the property line on all four sides of the structure.

For the purpose of preparing our scope of services we have estimated that maximum column dead load plus live loads to be on the order of 3,000 to 4,500 kips.

Due to site constrains, it is expected that the excavations for the proposed basements and ramps into the existing Herald Examiner Buildings will be supported by shoring consisting of soldier piles, and lagging. Tieback anchors may be necessary for the shoring. It is also expected that most of the exterior basement walls will be constructed directly against the shoring. As a result, no significant backfilling is expected between the shoring and the exterior basement wall.

3.0 SCOPE OF WORK

The scope of geotechnical services performed for this project included review of existing geotechnical reports, exploratory borings, geotechnical laboratory testing of soil samples, geotechnical engineering analyses, and preparation of this written report. This report did *not* include an evaluation of the potential for soil and/or groundwater contamination at this site. The scope of work for this investigation included the following:

- Field exploration was performed in two phases. The first phase included drilling six exploratory hollow stem borings (BH-1 through BH-6) on December 6 and 7, 2004 ranging in depths from 31.0 to 75.5 feet below the existing ground surface. Subsequent to the revision in the project concept, the second phase was performed and consisted of four additional borings (BH-7 through BH-10) on April 23 through 26, 2005 ranging in depths from 41.5 to 120.0 feet below the existing ground surface. The approximate locations of the borings are shown on Figures No. 2 and 3, *Borings Locations Map*. Subsurface conditions encountered in the borings were continuously logged and classified in the field by visual/ manual examination in accordance with the Unified Soil Classification System. Field exploration procedures and boring logs are presented in Appendix A, *Field Exploration.*
- Laboratory testing included moisture and density determinations, compaction, direct-shear strength, consolidation, expansive index, pH, minimum electrical resistivity, soluble sulfate, and chloride concentration testing. Descriptions of the individual tests and test results are presented in Appendix B, *Laboratory Test Program.*
- Engineering analyses and evaluation of results of the report review, field exploration and laboratory testing were performed to develop design and construction recommendations for the proposed parking structure. Findings and recommendations are documented in this written report.

4.0 REGIONAL GEOLOGY

The project site is located in the extreme northern portion of the Central Block of the Los Angeles Basin as defined by Yerkes, et al. (1965). The Central Block is bounded on the north by the Santa Monica and Raymond Hill fault zones, on the northeast and east by the Whittier-Elsinore fault zone and on the west-southwest by the Newport-Inglewood fault zone. This block is underlain by a deep structural depression. In the area of the site, the depression is filled with sedimentary bedrock assigned to the Puente Formation that is overlain by Old Alluvium.

5.0 SUBSURFACE EXPLORATION/CONDITIONS

Evidence of shallow fill was identified in the five borings (BH-1, BH-2, BH-3, BH-7 and BH-8) drilled as part of this investigation adjacent to the existing Herald Examiner Buildings and three of the borings (BH-4, BH-9 and BH-10)drilled on the 12th Street property. It is assumed that fill exists at other locations on the property as result of backfilling around the existing basement and as a result of past uses of the property. The maximum depth of fill was on the order of ten feet. The fill material consists of silty sand, sandy clay and lean clay. The fill material encountered in the Borings No. BH-1, BH-2, and BH-3 have been referred to as potential fill based a limited amount of debris detected in the material and a layer of processed gravel. This fill is likely the result of backfilling around the existing basement. It is expected that deeper fill associated with backfilling around the existing basements and fill associated with past uses of the 12th Street Building Site exist at and adjacent to the other boring locations.

Native soils encountered below the fill consisted of Gravelly Sand (SP), Sand (SP), Sand with Silt (SP-SM), Clayey Sand (SC), and Lean Clay (CL). The predominate soil classification was Sand with Silt and Gravel. These soils were in general moderately dense to dense or firm.

Groundwater was not encountered in any of the ten exploratory borings drilled during this investigation. The depth to historical high groundwater as reported in the Seismic Hazard Evaluation Report for the Hollywood Quadrangle is on the order of 120 feet below the ground surface.

Based on the results of subsurface exploration and experience, variations in the continuity and depth of subsurface conditions should be anticipated. Care should be exercised in interpolating or extrapolating subsurface conditions between or beyond borings. Fill depths should be expected to vary between borings.

6.0 CONCLUSIONS

The following conclusions are based on the results of the field investigation, laboratory testing and our understanding of the scope of the project.

- The sites are suitable from a geotechnical viewpoint for the proposed development, provided that the recommendations presented in this report are incorporated into the design and construction of the project.

- Evidence of shallow fill was encountered in eight borings drilled. The maximum depth of fill identified was on the order of ten feet. It is believed that this fill is the result of backfilling around the existing basement. As a result, additional fill is expected to exist around the existing is also basements and at the 12th Street Building Site associated past uses of the property. The subterranean portions of the two proposed Buildings is expected to extend through any existing fill material.

- The fill materials encountered during the field exploration vary from sand to lean clay and are generally moderately dense/firm.

- Underlying the fill and native soil, consisting of Lean Clay, Silty Sand, Sand, Sand with Silt, and Gravelly Sand was encountered.

- Groundwater was not encountered in the borings drilled. Accordingly, groundwater does not need to be considered in the design and construction of the proposed projects.

- There are no active faults projecting toward or extending across the proposed site. The site is not located within a currently designated State of California Fault-Rupture Hazard Zone. However, due to the close proximity of the site to the Hollywood and Newport-Inglewood fault zones, very strong shaking could result from a major seismic event on these faults.

- Site soils are not susceptible to liquefaction under earthquake ground shaking, due to the apparent density of the material and the absence of shallow groundwater table.

- Site soils should be able to be excavated with conventional heavy-duty earthmoving equipment.

- Based upon the laboratory testing, a medium expansion potential, as defined in Table 18-1-B of the 2002 Los Angeles City Building Code (LBCBC) has been assumed for the near surface clayey soils encountered around the existing Herald Examiner Buildings. Special design and/or construction for expansive soil conditions are considered necessary for this site. These special considerations have been incorporated into the design and construction recommendations presented in this report.

- Test results indicate that the near surface soils at the site of the proposed 12th Street Building have a very low expansion potential. Accordingly, special design and/or construction for expansive soil conditions are not considered necessary for this site.

- The proposed structures may be supported on spread footings that extend into the undisturbed dense native materials or a mat foundation extending over the entire building footprint.

- Site soils contain negligible concentrations of water-soluble sulfate. Accordingly special considerations for sulfate resistant concrete are not considered necessary for the subject project. Concrete in contact with soil should conform to the requirements of the Los Angeles City Building Code for negligible sulfate conditions.

- The site soils appear to have a moderate corrosive potential for ferrous metals. As a result, special design and construction considerations are expected to be necessary in order to protect ferrous metal utility lines if directly in content with soil. A Corrosion Engineer should be consulted for project specific recommendations.

7.0 SEISMICITY

7.1 General

The site, as is all of Southern California, is located within a seismically active area. However, it is not within a currently designed Fault-Rupture Hazard Zone, but is located approximately 8.5 km (5.3 miles) southerly of the Hollywood fault. Accordingly, strong ground shaking due to seismic activity is anticipated at this site. The provisions of the California Building Code (UBC), Los Angeles City Building Code (LACBC) and the Structural Engineers Association of California (SEAOC) guidelines are considered appropriate for design of the facility.

The anticipated peak horizontal ground acceleration for the maximum probable earthquake presented in the Seismic Evaluation Report for the area, CDMG Open File Report 98-17, is 0.46g. The maximum probable earthquake as defined in the Los Angeles City Building Code is the maximum seismic event anticipated with a 10 percent probability of exceedence in 50 years.

7.2 Near Source Parameters

Based on the available site data, it is our opinion that Soil Profile Type S_c, as defined in Section 1636 of the 2002 LACBC, is appropriate for the site. Faults within 20 km of the site are given in Table No. 1, 2002 LACBC Seismic Design Parameters. This fault information was taken from California Division of Mines and Geology — California Fault Parameters. According to Tables 16-S and 16-T of the 1997 UBC Type A faults more than 15 km and Type B faults more than 10 km from a site do not affect near-source factors. All faults closer than 30 km are classified as Seismic Source Type B faults based on parameters in Table 16-U. Based on Tables 16-S and 16-T, the largest values of near-source factors N_a and N_v occur for the Hollywood fault. Using a Seismic Zone Factor of 0.4, seismic coefficients C_a and C_v are 0.40 and 0.66, respectively.

TABLE NO. 1
2002 LACBC Seismic Design Parameters

Fault	Moment Magnitude M_w	Slip Rate Mm/year	Closest* Distance to Site (km)	Seismic Source Type	N_a	N_v
Hollywood	6.5	1.0	8.5	B	1.0	1.1
Raymond	6.5	0.5	9.7	B	1.0	1.0
Newport-Inglewood	6.9	1.0	10.6	B	1.0	1.0
Verdugo	6.7	05	13.1	B	1.0	1.0
Santa Monica	6.6	1.0	14.6	B	1.0	1.0

*Closest distance to a vertical projection of the fault rupture surface within 10 km of the ground surface.

7.3 Response Spectra Analysis

As an alternate to the design of the structure in accordance with the CBC and SEAOC guidelines, a probabilistic site-specific response spectra analysis was performed. Two design levels were selected to represent a reasonable range of earthquake energy levels. The first design level is a Design Based Earthquake (DBE) which a ten-percent chance of exceedance in 50 years (return period 475 years). The second design level is the upper bound earthquake (UBE) that represents a ten-percent chance of exceedance in 100 years (return period 1,000 years).

The site-specific response analysis was made using the computer program FRISKSP, (Blake, 2000), and the 2002 CGS State Wide Fault Model. Attenuation relationships proposed by Bozorgnia, Campbell & Niazi (1999) for Holocene age alluvium soil conditions were used in the analysis.

Output of FRISKSP is presented on Figure No. C-1, *Probability of Exceedance vs. Acceleration*. As presented in Figure No. C-1, the analysis indicates that the design maximum horizontal ground accelerations are estimated to be 0.60g and 0.45g for UBE and DBE events, respectively.

Site Specific Response Spectra for horizontal elastic response ground motions were generated using the FRISKSP program and are presented on Figures No. C-2 and C-3 for the two design earthquakes. These curves correspond to response values obtained from Bozorgnia, Campbell & Niazi (1999) attenuation relations for Holocene age alluvium soil conditions for horizontal elastic single-degree-of-freedom systems with equivalent viscous damping of 5 percent of critical damping. The values for 2, 7 and 10 percent damping were derived from the 5 percent damping using the spectral amplification factors developed by Newmark and Hall (1982). The Pseudo Spectral Accelerations for the four levels of damping are presented in tabular form in Appendix C, *Seismic Response Data.*

Vertical acceleration at the site may be estimated by multiplying the horizontal acceleration an adjustment factor. The adjustment factor should be 1.4 for periods less than 0.1 seconds. Between periods of 0.1 and 0.3 seconds, the adjustment factor should linearly decrease to a value of 0.5. For periods greater than 0.3, a value of 0.5 may be used. These adjustment factors were developed by Bozorgnia et al. (1999). When combining horizontal and vertical acceleration in the structural analysis, it should be noted that the vertical motion will have, in general, a 40 to 60 percent higher frequency than the horizontal motions, and the maximum vertical and horizontal accelerations seldom occur simultaneously.

7.4 Liquefaction Evaluation

Liquefaction is the sudden decrease in shearing strength of cohesionless soils due to vibration. During dynamic or cyclic shaking, the soil mass is distorted, and interparticulate stresses are transferred from the sand grains to the pore water. When the pore water pressure increases to the point that the interparticulate effective stresses are reduced to zero, the soil behaves temporarily as a viscous fluid (liquefaction) and, consequently, loses its capacity to support the structures founded thereon.

Liquefaction potential has been found to be the greatest where the groundwater level and loose sands occur within a depth of about 50 feet or less. The potential for liquefaction decreases with increasing grain size and clay and gravel content, but increases as the ground acceleration and duration of shaking increase.

Historical high groundwater has been reported to be on the order of 120 feet below the ground surface. Based upon this depth to groundwater and the apparent density of the soils encountered, it has been concluded that the potential for liquefaction at the site is considered very low to nil.

7.5 Secondary Seismic Effects

In addition to ground shaking and liquefaction, secondary effects of seismic activity that could impact the project site include surface fault rupture, differential settlement of the structures, ground lurching, landsliding, lateral spreading, earthquake-induced flooding, seiches, and Tsunamis. The results of a site-specific evaluation of the potential for these secondary effects affecting the project site are presented below:

- Surface Fault Rupture: The project site is located approximately 5.3 miles (8.5 km) from the surface projection of the Hollywood Fault. As a result, the potential for surface rupture resulting from the movement of this fault or other nearby faults, although not known with certainty, is considered to be low.

- Landslides: The potential for seismically induced landslides and/or other types of slope failures, such as lateral spreading on or adjacent to slope surfaces, adversely affecting the site is considered to be very low, due to the absence of slopes on or adjacent to the site.

- Differential Settlement Due to Seismic Shaking: Seismically induced differential settlement occurs as the result of loose, medium to coarse sands densifying during strong shaking from an earthquake. Classification of the samples and sampling blow counts indicate that the soils underlying the site are predominately moderately dense to dense sands that are not sensitive to seismically induced settlement. .

- Tsunamis/Seiches: Tsunamis and seiches are large seismic generated waves in the ocean (Tsunamis) or large enclosed bodies of water (Seiches). Based upon the distance of the site from the ocean and/or lakes and/or reservoirs, the potential of Tsunamis and/or Seiches affecting the site are considered to be very low.

- Earthquake-Induced Flooding: This is flooding caused by failure of dams or other water-retaining structures up gradient of the site as a result of an earthquake. Review of the area adjacent to the site indicates that there are no significant up gradient lakes or reservoirs with the potential of flooding the site.

8.0 DESIGN RECOMMENDATIONS

8.1 General

The proposed subterranean parking with above grade mixed use structures may be supported on conventional spread footings or mat foundation bearing on undisturbed native soils. Excavation for the subterranean structure is expected to remove any existing fill that may exist. In the subsections below, design recommendations for seismicity, earthwork, foundations, slabs-on-grade, and corrosion and chemical attack resistance are provided. Construction considerations, such as temporary excavations, are discussed in the Construction Considerations section, presented later in this report.

8.2 Earthwork

Earthwork is expected to consist of excavation of the basement, subgrade preparation for basement slab-on-grade, placement of limited backfill around the outside of basement walls, placement of utility trench backfill and limited fine grading around the perimeter of the structure in conjunction with the construction of walkways, driveways and landscaping. Earthwork recommendations are presented in Appendix C, *Recommended Earthwork Specifications*, and also in the following subsections.

As a result of the low to medium expansion characteristics of the on-site clayey soils, continued maintenance of the moisture content of the subgrade soils will be required during the construction until the concrete slab-on-grade has been completely constructed.

8.2.1 Removals: Prior to the start of construction, the existing structures, concrete pavement, and landscaping should be removed from the site. All undocumented fill extending below the bottom of the design excavation should be removed. It is anticipated that excavation for the subterranean structure will remove any existing fill from within the limits of the structure. Any loose, disturbed, or otherwise unsuitable materials encountered at the bottom of the excavation should be excavated to firm acceptable material. Excavation activities should not disturb adjacent utilities, buildings, and structures to remain. Existing utilities should be removed and adequately capped at the project boundary line, or salvaged/rerouted as designed.

8.2.2 Subgrade Preparation and Compaction: All exposed subgrade soil surfaces, including subgrade surfaces below the proposed basement floor slabs, should be observed by a Converse representative prior to placement of fill or placement of slabs. If soft, yielding, or unsuitable soils are exposed at the subgrade surface, then the unsuitable soils should be removed and replaced with properly compacted fill soils. Sandy soils should be maintained at within three percent of optimum moisture until the concrete slab-on-grade has been completed

8.2.3 Fill Compaction: All fill and backfill soils should be placed in lifts not exceeding eight inches in thickness, moisture-conditioned at near optimum moisture, and compacted to 90 percent of the laboratory maximum density determined in accordance with ASTM Test Method D-1557 (95 percent relative compaction in accordance with City of Los Angeles criteria if sand is used for backfill). All fill and backfill should be placed and compacted under observation and testing performed by Converse.

8.2.4 Fill Materials: Fill soils should consist of site sand soils or imported sandy soils free of organics, cobbles, boulders, rubble, or rock larger than three inches in largest dimension. Any imported soils should be sandy soils and have an EI less than 40. Import soils should be evaluated and possibly tested by Converse if the materials are questionable. Imported soils should, also, have a minimum of 25 percent fines (material passing #200 sieve).

8.2.5 Site Grading: Final grades should slope at one to two percent away from the structure to prevent ponding and to reduce percolation of water into foundation soils.

8.3 Foundations

8.3.1 Conventional Spread Footings: Conventional spread footings founded on undisturbed natural soils may be used to support the proposed subterranean parking structure. Footings for the proposed building should be founded at least 24 inches below lowest adjacent final grade. Continuous spread footings and isolated rectangular footings should have a minimum width of 24 inches.

Conventional Footings supported by native soil with the above minimum size and embedment depths may be designed for the net allowable vertical bearing pressure presented in Table No. 2, Vertical Bearing Capacity, Conventional Spread Footings.

The maximum anticipated settlement of a square footing below the bottom of structures founded on undisturbed native soils is estimated to be less than 0.50 inch for a column load of 800 kips. Differential settlements are expected to be on the order of 0.25 inch between similarly loaded adjacent footings below the bottom of the parking structure.

TABLE NO. 2
Vertical Bearing Capacity, Conventional Spread Footings

Building/Location	Vertical Bearing Capacity (Ksf)
Broadway Building	4.0
Hill Street Building	10.0
12th Street Building	7.0

8.3.2 Mat Foundation: As an alternate to conventional spread footings a mat foundation may be used to support the new structures. A mat foundation should be founded on undisturbed natural soils. Mats should be founded at least 18 inches thick. A coefficient of vertical subgrade reaction, may, *k(in* pounds-per-cubic-inch (pci)), can be calculated as $k = 250\ ([B+1]/2B)^2$, where *B* is mat width in feet, for mats of various size.

8.3.3 Lateral Capacity: Resistance to lateral loads can be provided by friction acting at the base of the foundations and by passive earth pressure. A coefficient-of-friction of 0.40 may be assumed with the dead-load forces. An allowable passive lateral earth pressure of 350 psf per foot of depth, up to a maximum of 3,500 psf, may be used for sides of footings or basement walls poured against undisturbed native soils or with compacted backfill. This lateral pressure should be considered to be actual earth pressure. An appropriate factor of safety should be added in the structural design of the structure.

8.3.4 Dynamic Increases: Bearing values and passive pressure indicated above are for total dead-load and frequently applied live loads. The above vertical bearing and passive pressure may be increased by 33 percent for a short duration of loading which will include the effect of wind or seismic forces.

8.4 Slabs-on-Grade

Slabs-on-grade should be placed on native soils or properly compacted subgrade soils as described in Section 8.2.2.

Slabs-on-grade should have a minimum thickness of four inches for support of nominal ground-floor live loads without hydrostatic uplift pressures. Minimum reinforcement for slabs-on-grade should be No. 3 reinforcing bars, spaced at 18 inches on-center each way. The thickness and reinforcement of more heavily-loaded slabs will be dependent upon the anticipated loads and should be designed by a structural engineer. A static modulus of subgrade reaction equal to 200 pounds per square inch per inch may be used in structural design of concrete slabs-on-grade.

If approved by the owner, equivalent welded wire mesh may be used for reinforcement of concrete slabs-on-grade. However, to be effective, it is imperative that the reinforcement be located within the center third of the slab thickness. The commonly used procedure of "hooking" the reinforcement during concrete placement seldom, if ever, results in proper location of the slab reinforcing.

Care should be taken during concrete placement to avoid slab curling.

Slabs should be designed and constructed as promulgated by the American Concrete Institute (ACI) and the Portland Cement Association (PCA). Prior to the slab pour, all utility trenches should be properly backfilled and compacted.

In areas where a moisture-sensitive floor covering (such as vinyl tile or carpet) is used, slabs should be protected by at least a ten-mil-thick polyethylene vapor barrier between the slab and compacted subgrade. Where a vapor barrier is used, it should be protected with two inches of sand placed above the barrier, to reduce the potential for punctures and to aid concrete curing. Polyethylene sheets should be overlapped a minimum of six inches, and should be taped or otherwise sealed.

8.5 Subterranean Walls

Basement wall footings that are a load carrying structural part of the basement structure may be evaluated and/or designed in accordance with the vertical bearing value presented above. Lateral bearing pressure and coefficient-of-friction given above may also be used for design of retaining walls.

Walls, which are top-restrained, and support level on-site or similar soil backfill may be evaluated and/or designed for a uniform earth pressure distribution. An earth pressure equal to 21H psf, where H is the height of the wall in feet, is recommended.

Freestanding cantilever retaining walls designed to retain level on-site or similar soil backfill should be designed to resist an equivalent fluid pressure of 32 pounds per cubic foot (pcf).

Basement walls for the easterly side of the proposed Hill Street Building should include surcharge pressures from the adjacent footings of the existing Broadway Building. At the time that this report was prepared the exact type, location and bearing pressure for the existing footings along the westerly side of the Broadway Building were not known. For the purpose of analysis the Englekirk Partners, Project Structural Engineers, have provided Converse with estimates of footing loads. For individual column footing with a spacing of 20 feet on center, they estimated that the dead load will be on the order of 210 kips and the live load will be on the order of 50 kips for each column. For a continuous footing supporting the westerly wall of the Broadway Building, they estimate that the footing loads are 15 kips/lineal foot for dead loads and 2.6 kips/lineal foot for live loads.

In the calculating the horizontal surcharge values presented in Figure No. 4, *Lateral Surcharge from Broadway Building*, Converse assumed a bearing pressure of five kips per square foot. The surcharge pressures presented in Figure No. 4, *Lateral Surcharge from Broadway Building,* should added to the earth pressure presented above and be considered actual pressures (factor of safety equal to 1.0)

If loading from any source other than the Broadway Building is located within a distance equal to the height of the wall, its surcharge effect should be added to the above earth pressure. Surcharge coefficients of 30% and 45% of any other surcharge may be used in the design of cantilever and braced walls, respectively. The surcharge for automotive and truck traffic within 10 feet horizontally of the wall should a uniform lateral pressure of 100 psf applied to the top ten feet of the wall.

No increase in the lateral earth pressure is considered necessary for seismic loading.

The lateral pressure values presented herein considered actual earth pressure with no increase for factors of safety. The design engineer should add an appropriate factor of safety to the wall design.

Where a wet wall condition is not desirable, the wall should be waterproofed.

Care must be exercised during construction to avoid over-stressing retaining walls during the compaction of backfill.

8.6 Corrosivity and Chemical Attack

In order to determine the potential affects of the soil on concrete and buried metal pipes, minimum electrical resistivity, pH, soluble chloride and soluble sulfate test results were performed on a portions of bulk soil sample recovered from the site, and the results are presented below and in Appendix B, *Laboratory Test Program.*

A sulfate concentration of 0.009 to 0.011 percent by weight of dry soil was measured in the laboratory tests. These sulfate concentrations are defined as a negligible concentration by Table 19-A-3 of the LACBC (2002 Edition). As a result, special sulfate resisting concrete is not currently considered necessary for this project. However, additional testing during construction, prior to the placement of footings, should be performed to confirm this condition.

Tests performed on a portion of a bulk sample representative of the near surface indicates that the near surface soils have a chloride content of 100 to 108 ppm, a pH of 7.27 to 8.10, and a saturated resistivity of 1200 to 1500 ohms-centimeter. The resistivity value indicates a moderate corrosivity potential for ferrous metals in contact with these soils. Therefore, conventional corrosion mitigation measures may not be adequate for metal in contact with the on-site soils. Additional special design and construction is expected to be necessary. The services of a Corrosion Engineer should be retained to develop project specific recommendations for the protection of ferrous metal in contact with the soil.

9.0 CONSTRUCTION CONSIDERATIONS

9.1 Temporary Excavations

Temporary slopes may be used during excavations where not constrained by adjacent utilities and structures. Where space is limited due to adjacent facilities and buried utilities to be salvaged and protected, shoring may be required.

Based upon the soils encountered in the borings, it is our opinion that sloped temporary excavations may be cut according to the slope ratios presented in the following table:

TABLE NO. 3
Temporary Excavation Slopes

Maximum Depth of Cut (feet)	Maximum Slope Ratio* (horizontal:vertical)
0 – 3	vertical
3 – 20	1.5 : 1

*Slope ratio assumed to be uniform from top to toe of slope.

Slope ratios given above are assumed to be uniform from top to toe of slope. Surfaces exposed in sloped excavations should be kept moist, but not saturated, to retard raveling and sloughing during construction. Adequate provisions should be made by the contractor to protect slopes from erosion during periods of rainfall. Surcharge loads should not be permitted within a horizontal distance equal to the depth of the cut from the top of slopes. There is the potential that sandy strata may be encountered that will require temporary cut slopes to be less steep than tabulated above. As a result the excavation slope should be observed on a periodic basis during the excavation of the subterranean portion of the structure, in order to verify soil conditions. Workers entering excavations should be protected from possible caving and raveling soils.

9.2 Temporary Shoring

General

Due to site constrains it is anticipated that it may not be possible to slope the entire excavation with the slope ratios presented above and shoring of the excavation will be necessary. Shoring for the deeper portions of the excavation will probably require bracing with tieback anchors, while the shallower portions may possibly be supported with cantilever systems.

Earth materials encountered in our borings generally varied from clay to gravelly sand. Due to the sandy nature of the on-site soils, construction difficulties including caving should be expected during installation of solider piles and tiebacks.

Cantilevered Shoring

Temporary shoring is expected to be necessary for support of construction excavations. A soldier-pile shoring system may be used to maintain temporary support of vertical wall excavations. Due to the sandy nature of some of the soils encountered during this investigation and the presence of shallow groundwater, caving during the drilling of soldier-pile borings should be expected. A soldier-pile system will also most likely require continuous lagging to control caving and sloughing in the excavation between soldier piles. Shoring design must consider the support of adjacent underground utilities and/or structures, and should consider the effects of shoring deflection on supported improvements.

Temporary cantilever shoring should be designed to resist a lateral earth pressure equivalent to a fluid density of 28 pounds per cubic foot (pcf). This equivalent fluid pressure is valid only for shoring retaining level ground.

Surcharge pressures should be added to the above earth pressures for surcharges within a distance from the top of the shoring less than or equal to the shoring height. A surcharge coefficient of 30 percent of any uniform vertical surcharge should be added as a horizontal shoring pressure for cantilever shoring. Surcharge pressure from the existing footings from the Broadway Building as presented in Figure No. 3, *Lateral Surcharge from Broadway Building Footings*, may be used in the shoring design.

These values for earth pressure are considered actual earth pressure with no increase for factors of safety. The shoring design engineer in designing the shoring system should add an appropriate factor of safety.

Vertical skin friction against soldier piles extending below the bottom of the parking structure may be taken as 400 psf.

Lateral resistance for soldier piles may be assumed to be provided by passive pressure below the bottom of excavations. The allowable passive pressure for soldier piles spaced at least 3 diameters on center may be taken as 700 psf on the pile per foot of depth, measured below the bottom of excavation. Closer spaced soldier piles should be designed using a passive resistance of 350 psf. The allowable maximum passive resistance should not exceed 7,000 psf. It should be noted that the above values for passive earth pressure given for the design of soldier piles have been adjusted for potential arching between piles and no additional increases for arching should be assumed.

Caving soils should be anticipated between the piles. To limit local sloughing, caving soils can be supported by continuous lagging or guniting. All lumber to be left in the ground should be treated in accordance with Section 204-2 of the *"Standard Specifications for Public Works Construction"* (2000 Edition, Green Book).

It is recommended that Converse review plans and specifications for proposed shoring and that a Converse representative observes the installation of shoring. A licensed surveyor should be retained to establish monuments on shoring and the surrounding ground prior to excavation. Such monuments should be monitored for horizontal and vertical movement during construction. Results of the monitoring program should be provided immediately to the project Structural (shoring) Engineer and Converse for review and evaluation. Adjacent buildings should be photo-documented prior to construction.

Braced (Tied-Back) Shoring

A tied-back soldier-pile shoring system may be used to maintain temporary support of deep vertical wall excavations. Braced or tied-back shoring, retaining a level ground surface, should be designed for a uniform pressure distribution of 19 H psf where H is the height of the retained cut in feet.

Surcharge pressures should be added to this earth pressure for surcharges within a distance from the top of the shoring less than or equal to the shoring height. A surcharge coefficient of 45 percent of any uniform vertical surcharge should be added as a horizontal shoring pressure for braced shoring. Surcharge pressure from the existing footings from the Broadway Building as presented in Figure No. 3, *Lateral Surcharge from Broadway Building Footings*, may be used in the shoring design. These values for earth pressure are considered actual earth pressure with no increase for factors of safety. The shoring design engineer in designing the shoring system should add an appropriate factor of safety.

For design of tied-back used as part of the shoring, it should be assumed that the potential wedge of failure is determined by a plane at 30 degrees from the vertical, through the bottom of the excavation. Tieback anchors may be installed at angles of 15 to 40 degrees below a horizontal plane. Tieback installation and testing guidelines and procedures are presented in Appendix D, *"Guide Specifications for Installation and Acceptance of Tie-back Anchors."*

An average soil friction value of 400 pounds per square foot may be used for estimating the allowable capacity of conventional drilled friction anchors,

The capacity of "Post Grouted" anchors should be determined in accordance with the Caltrans *"Trenching and Shoring Manual"* Criteria.

Only the frictional resistance developed beyond the assumed failure plane should be included in the tieback design for resisting lateral loads.

9.3 Geotechnical Services During Construction

This report has been prepared to aid in the evaluation of the proposed Wilshire Vermont Apartments and to assist architects and engineers in design of the structure. It is recommended that this office be provided an opportunity to review final design drawings and specifications to determine if the recommendations of this report have been properly implemented.

Foundation recommendations in this report are based on the assumption that all structural foundations will be placed on undisturbed native soils. All foundation excavations should be observed by Converse prior to placement of steel and concrete, to verify that foundation elements are founded on satisfactory materials and that excavations are free of loose and disturbed soils. All structural fill and backfill should be placed and compacted during observation and testing by Converse.

During construction, the geotechnical engineer and/or their authorized representatives should be present at the site to provide a source of advice to the client regarding the geotechnical aspects of the project and to observe and test the earthwork performed. Their presence should not be construed as an acceptance of responsibility for the performance of the completed work, since it is the sole responsibility of the contractor performing the work to ensure that it complies with all applicable plans, specifications, ordinances, etc.

This firm does not practice or consult in the field of safety engineering. We do not direct the contractor's operations, and cannot be responsible for other than our own personnel on the site; therefore, the safety of others is the responsibility of the contractor. The contractor should notify the owner if he considers any recommended actions presented herein to be unsafe.

10.0 CLOSURE

The findings and recommendations of this report were prepared in accordance with generally accepted professional geotechnical engineering and geology principles and practice for Southern California at this time. We make no other warranty, either expressed or implied. Conclusions and recommendations presented in this report are based on results of this field and laboratory investigation, combined with an interpolation and extrapolation of subsurface conditions between and beyond boring locations. If conditions encountered during construction appear to be different from those assumed in this report, this office should be notified immediately.

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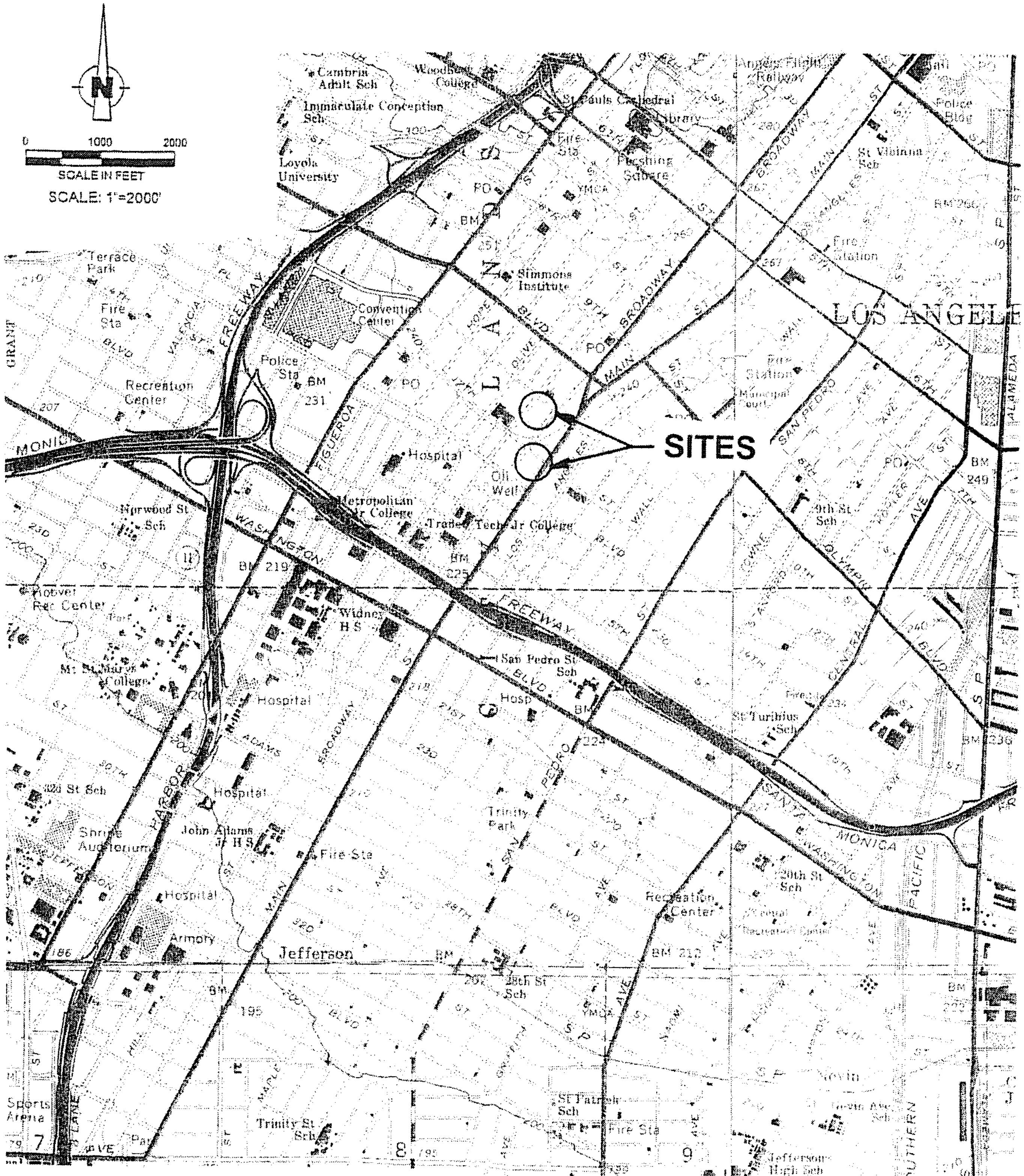


REFERENCES: USGS 7.5 MINUTE QUADRANGLE MAPS
HOLLYWOOD,1966, PHOTOREVISED 1981
LOS ANGELES,1966,PHOTOREVISED 1972

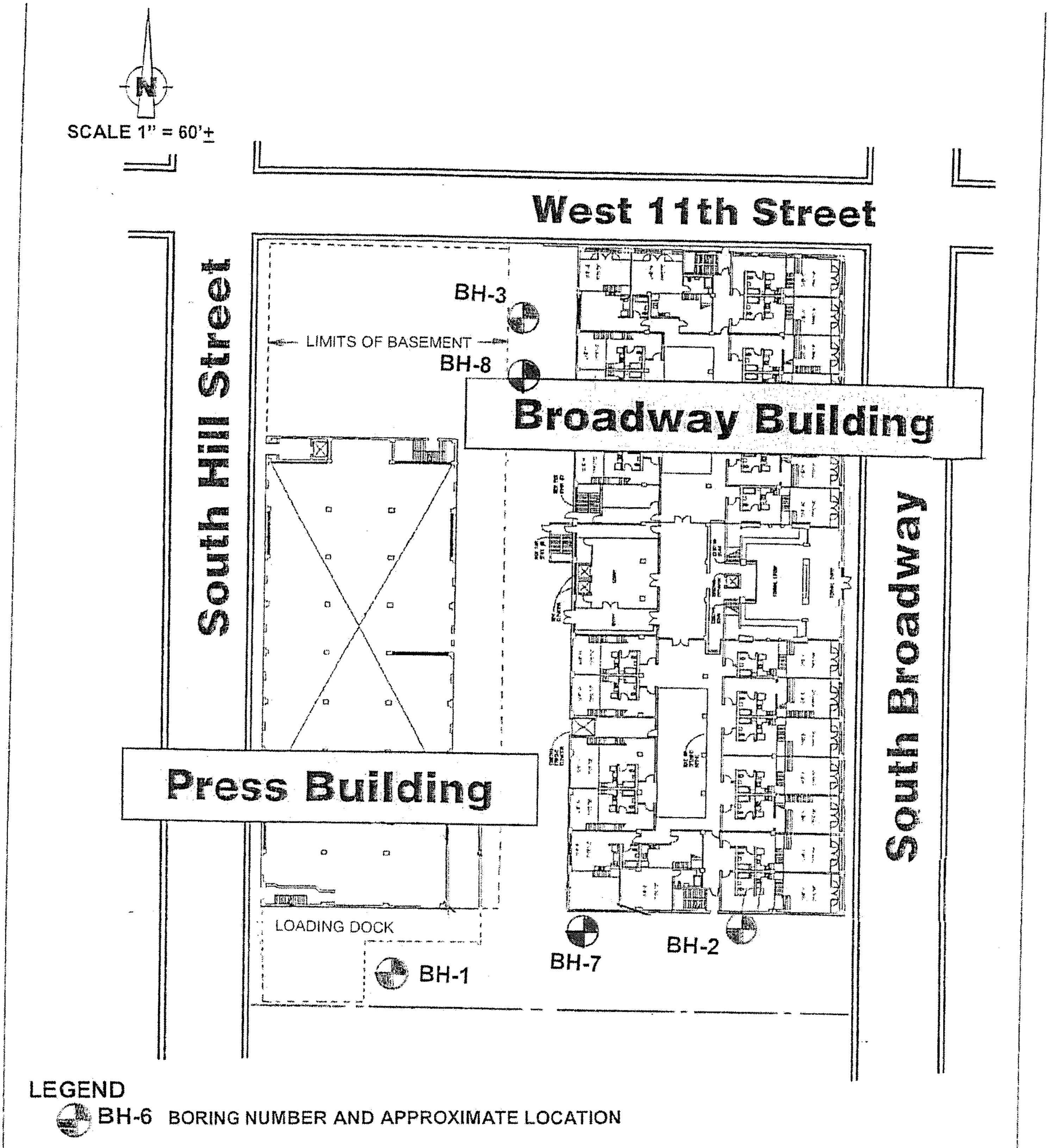
SITE LOCATION MAP

Herald Examiner Buildings and 12th Street Building
1111 South Broadway, 1108 South Hill Street & 1201 Main Street
LOS ANGLES, CALIFORNIA
FOR: Urban Partners

Project No.
04-31-240-02

Figure No.
1

Converse Consultants



BORINGS LOCATIONS MAP

Herald Examiner Buildings and 12th Street Building
1111 South Broadway, 1108 South Hill Street & 1201 Main Street
LOS ANGLES, CALIFORNIA
FOR: Urban Partners

Project No.
04-31-240-02

Converse Consultants

Figure No.
2

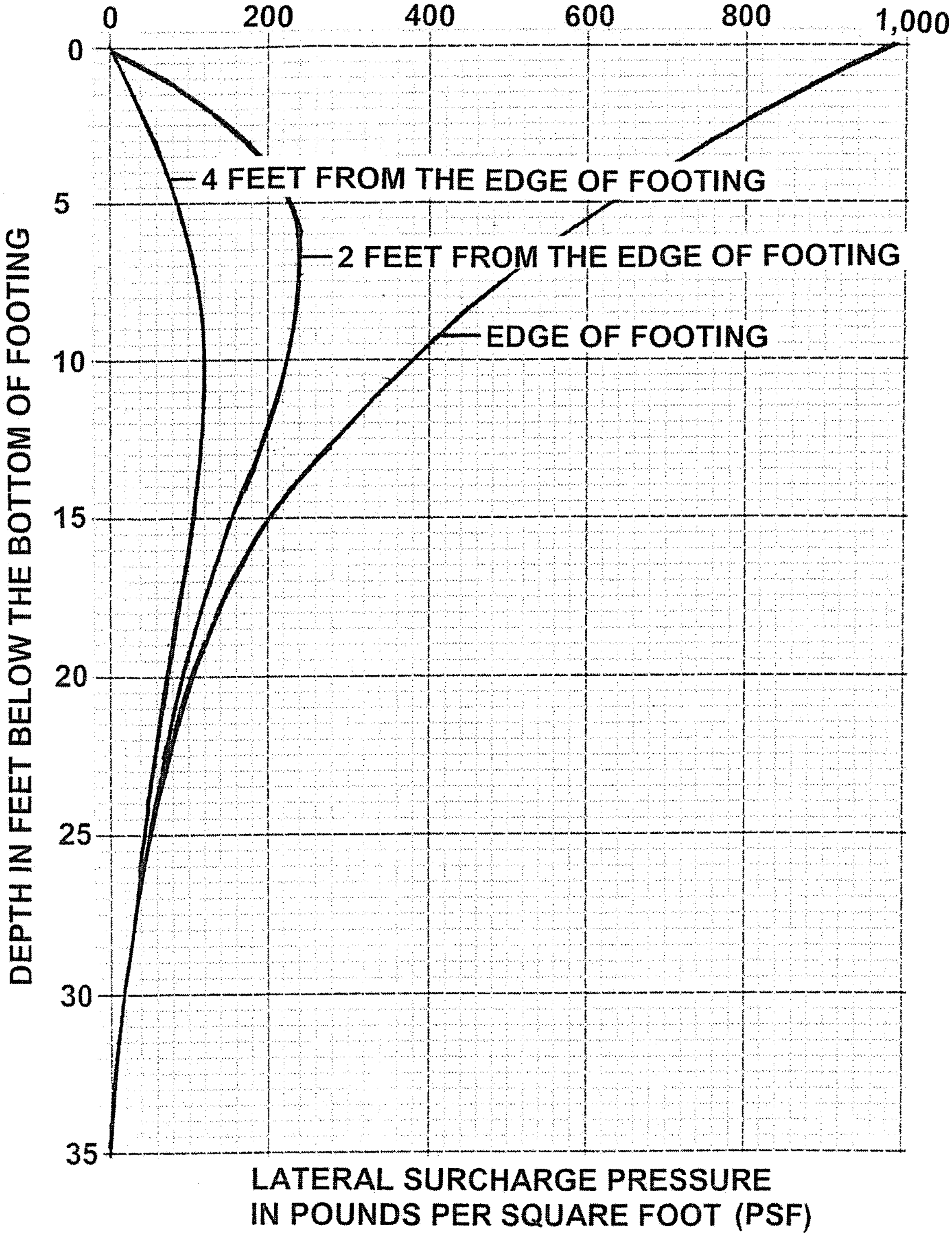
BORINGS LOCATIONS MAP

Herald Examiner Buildings and 12th Street Building
1111 South Broadway, 1108 South Hill Street & 1201 Main Street
LOS ANGLES, CALIFORNIA
FOR: Urban Partners

Project No. 04-31-240-02

Converse Consultants

Figure No. 3



LATERAL SURCHARGE FROM BROADWAY BUILDING

Converse Consultants	HERALD EXAMINER BLDGS & 12th STREET BUILDING LOS ANGELES, CALIFORNIA FOR: URBAN PARTNERS	Project No. 04-31-240-02	Figure No. 4

APPENDIX A

FIELD EXPLORATION

APPENDIX A

FIELD EXPLORATION

Field exploration included a site reconnaissance and subsurface drilling. During the site reconnaissance, surface conditions were noted, and the locations of the test borings were determined. Borings were approximately located using existing features as a guide.

Field exploration was performed in two phases. The first phase included drilling six exploratory hollow stem borings (BH-1 through BH-6) on December 6 and 7, 2004 ranging in depths from 31.0 to 75.5 feet below the existing ground surface. Subsequent to the revision in the project concept, the second phase was performed and consisted of four additional borings (BH-7 through BH-10) on April 23 through 26, 2005 ranging in depths from 41.5 to 120.0 feet below the existing ground surface. Soils were continuously logged and classified in the field by visual/manual examination, in accordance with the Unified Soil Classification System. Field descriptions have been modified, where appropriate, to reflect laboratory test results.

Relatively undisturbed samples of the subsurface soils were obtained at frequent intervals in the borings using a drive sampler (2.4-inch inside diameter, 3-inch outside diameter) lined with sample rings. The steel sampler was driven approximately 18 inches into the bottom of the borehole with successive 30-inch drops of a 140-pound drive weight. An automatic ("safety") hammer was used. Blows required to drive the sampler each six inches are shown on the boring logs in the "blows " column. Samples were retained in brass rings (2.4 inches in diameter, 1.0 inch in height) and carefully sealed in waterproof plastic containers for shipment to the Converse geotechnical laboratory. Bulk samples of the near surface soils were also obtained.

Standard Penetration Tests (SPT) were performed in general accordance with the ASTM Standard Test Method D1586. Blow counts given for the three 6-inch increments are indicated on the boring logs, which is the uncorrected SPT *"N"*-value. Bulk samples of the near surface soils were also obtained.

Drawing No. A-1, *Exploration Log Key,* describes the various symbols and nomenclature shown on the logs. Logs of the borings are presented on Drawings Nos. A-2 through A-11c, which also include descriptions of the soils encountered, pertinent field data, and supplemental laboratory results.

SOIL CLASSIFICATION CHART

MAJOR DIVISIONS			SYMBOLS GRAPH	SYMBOLS LETTER	TYPICAL DESCRIPTIONS
COARSE GRAINED SOILS	GRAVEL AND GRAVELLY SOILS	CLEAN GRAVELS (LITTLE OR NO FINES)		GW	WELL-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
				GP	POORLY-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
	MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES)		GM	SILTY GRAVELS, GRAVEL - SAND - SILT MIXTURES
				GC	CLAYEY GRAVELS, GRAVEL - SAND - CLAY MIXTURES
MORE THAN 50% OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	SAND AND SANDY SOILS	CLEAN SANDS (LITTLE OR NO FINES)		SW	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
				SP	POORLY-GRADED SANDS, GRAVELLY SAND, LITTLE OR NO FINES
	MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)		SM	SILTY SANDS, SAND - SILT MIXTURES
				SC	CLAYEY SANDS, SAND - CLAY MIXTURES
FINE GRAINED SOILS	SILTS AND CLAYS	LIQUID LIMIT LESS THAN 50		ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
				OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
MORE THAN 50% OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	SILTS AND CLAYS	LIQUID LIMIT GREATER THAN 50		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS
				CH	INORGANIC CLAYS OF HIGH PLASTICITY
				OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS				PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

NOTE: DUAL SYMBOLS ARE USED TO INDICATE BORDERLINE SOIL CLASSIFICATIONS

BORING LOG SYMBOLS

SAMPLE TYPE

- STANDARD PENETRATION TEST Split barrel sampler in accordance with ASTM D-1586-84 Standard Test Method
- DRIVE SAMPLE 2.42" I.D. sampler.
- DRIVE SAMPLE No recovery
- BULK SAMPLE
- GROUNDWATER WHILE DRILLING
- GROUNDWATER AFTER DRILLING

LABORATORY TESTING ABBREVIATIONS

TEST TYPE
(Results shown in Appendix B)

CLASSIFICATION

Plasticity	pi
Grain Size Analysis	ma
Passing No. 200 Sieve	wa
Sand Equivalent	se
Expansion Index	ei
Compaction Curve	max
Hydrometer	h

STRENGTH

Pocket Penetrometer	p
Direct Shear	ds
Direct Shear (single point)	ds*
Unconfined Compression	uc
Triaxial Compression	tx
Vane Shear	vs
Consolidation	c
Collapse Test	col
Resistance (R) Value	r
Chemical Analysis	ca
Electrical Resistivity	er

UNIFIED SOIL CLASSIFICATION AND KEY TO BORING LOG SYMBOLS

Converse Consultants

Project Name	Project No.	Drawing No.
HERALD EXAMINER BLDGS & 12th STREET BUILDING LOS ANGELES, CALIFORNIA FOR: URBAN PARTNERS	04-31-240-02	A-1

Project ID: 04-31-240-02-1TO6.GPJ; Template: KEY

Log of Boring No. BH-1

Dates Drilled: 12/6/2004 | Logged by: JLM | Checked By: JSS

Equipment: 8" HOLLOW STEM AUGER | Driving Weight and Drop: 140 lbs / 30 in

Ground Surface Elevation (ft): N/A | Depth to Water (ft): NOT ENCOUNTERED

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.	SAMPLES: DRIVE	SAMPLES: BULK	BLOWS	MOISTURE (%)	DRY UNIT WT. (pcf)	OTHER
		4" ASPHALT CONCRETE PAVEMENT						
		FILL: **LEAN CLAY (CL):** dark brown.		X				
			X	X	7/13/16	18	109	
5		**SILTY SAND (SM):** some gravel to 1" in size, fine grained, brown.	X		4/7/23			
		GRAVEL (GP): angular, gray.						
10		**ALLUVIUM:** **SAND WITH SILT (SP-SM):** fine-grained, some gravel, brown.	X		29/28/40	3		
		-no gravel						
15		**SILTY SAND (SM):** medium to fine-grained, brown.	X		15/21/38	16	116	ds
20		-some gravel, light brown	X		15/15/36	12	101	c
		SAND WITH SILT AND GRAVEL (SP-SM): medium to coarse-grained, light brown.						
25			X		50	3		
30			X		17,50	7	112	

Converse Consultants

Project Name: HERALD EXAMINER BLDGS & 12th STREET BUILDING, LOS ANGELES, CALIFORNIA, FOR: URBAN PARTNERS

Project No. 04-31-240-02

Drawing No. A-2a

Log of Boring No. BH-1

Dates Drilled: 12/6/2004 Logged by: JLM Checked By: JSS

Equipment: 8" HOLLOW STEM AUGER Driving Weight and Drop: 140 lbs / 30 in

Ground Surface Elevation (ft): N/A Depth to Water (ft): NOT ENCOUNTERED

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.	SAMPLES DRIVE	SAMPLES BULK	BLOWS	MOISTURE (%)	DRY UNIT WT. (pcf)	OTHER
		SAND WITH SILT AND GRAVEL (SP-SM): medium to coarse-grained sand, light brown.	■		17,50	5	114	
40		**SILTY SAND (SM):** with gravel, medium to coarse-grained sand, light brown.	■		7/34/50	15	108	
		Bottom of boring at 41.5 feet. Groundwater not encountered. Boring backfilled with soil cuttings.						

Converse Consultants

Project Name
HERALD EXAMINER BLDGS &
12th STREET BUILDING
LOS ANGELES, CALIFORNIA
FOR: URBAN PARTNERS

Project No. 04-31-240-02

Drawing No. A-2b

Log of Boring No. BH-2

Dates Drilled: 12/6/2004 Logged by: JLM Checked By: JSS

Equipment: 8" HOLLOW STEM AUGER Driving Weight and Drop: 140 lbs / 30 in

Ground Surface Elevation (ft): N/A Depth to Water (ft): NOT ENCOUNTERED

SUMMARY OF SUBSURFACE CONDITIONS

This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.

Depth (ft)	Graphic Log	Summary of Subsurface Conditions	Samples: Drive	Samples: Bulk	Blows	Moisture (%)	Dry Unit Wt. (pcf)	Other
		5" ASPHALT CONCRETE PAVEMENT						
		FILL: **SILTY SAND (SM):** fine to medium-grained, some small pieces of debris, dark brown -.	X	X	9/17/19	11	119	
		LEAN CLAY (CL): brown.						
5		**SILTY SAND (SM):** with some gravel, medium to coarse-grained sand, light brown.	X	X	13/40/42	3	136	
		CRUSHED GRAVEL (GP): gravel.						
10		**ALLUVIUM:** **SAND WITH SILT AND GRAVEL (SP-SM):** medium to coarse-grained, light brown.	X		50	3	130	
15			X		24/21/31	3		
20			X		35,50	7	126	
25			X	X	50	5	128	ma,h
30		-greenish brown	X		13,50	6	122	

Log of Boring No. BH-2

Dates Drilled: 12/6/2004 Logged by: JLM Checked By: JSS

Equipment: 8" HOLLOW STEM AUGER Driving Weight and Drop: 140 lbs / 30 in

Ground Surface Elevation (ft): N/A Depth to Water (ft): NOT ENCOUNTERED

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.	SAMPLES: DRIVE	SAMPLES: BULK	BLOWS	MOISTURE (%)	DRY UNIT WT. (pcf)	OTHER
		SAND WITH SILT AND GRAVEL (SP-SM): medium to coarse-grained, light brown.	■		12/43/50	7	125	
40			■		18/30/50	10	120	
		Bottom of boring at 41.5 feet. Groundwater not encountered. Boring backfilled with soil cuttings.						

Converse Consultants

Project Name
HERALD EXAMINER BLDGS &
12th STREET BUILDING
LOS ANGELES, CALIFORNIA
FOR: URBAN PARTNERS

Project No.
04-31-240-02

Drawing No.
A-3b

Log of Boring No. BH-3

Dates Drilled: 12/6/2004   Logged by: JLM   Checked By: JSS

Equipment: 8" HOLLOW STEM AUGER   Driving Weight and Drop: 140 lbs / 30 in

Ground Surface Elevation (ft): N/A   Depth to Water (ft): NOT ENCOUNTERED

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.	SAMPLES DRIVE	SAMPLES BULK	BLOWS	MOISTURE (%)	DRY UNIT WT. (pcf)	OTHER
		4" ASPHALT CONCRETE OVER 4" PORTLAND CEMENT CONCRETE PAVEMENT						max,ds,ei ca,er
		FILL: **SANDY CLAY (CL):** fine to medium-grained sand, brown.			6/12/13	18	110	
5		**SILTY SAND (SM):** fine to medium-grained, brown.			4/13/21	16	115	
		GRAVEL (GP): subrounded, gray.						
10		**ALLUVIUM:** **SAND WITH SILT AND GRAVEL (SP-SM):** fine to medium-grained, light brown.			32,50	4	132	
15					50	4	136	
20					10/31/30	4		
25					18,50	7	120	
30					15/30/32			

Converse Consultants

Project Name: HERALD EXAMINER BLDGS & 12th STREET BUILDING LOS ANGELES, CALIFORNIA FOR: URBAN PARTNERS

Project No. 04-31-240-02   Drawing No. A-4a

Project ID: 04-31-240-02-1TO6.GPJ, Template: LOG

Log of Boring No. BH-3

Dates Drilled: 12/6/2004 Logged by: JLM Checked By: JSS

Equipment: 8" HOLLOW STEM AUGER Driving Weight and Drop: 140 lbs / 30 in

Ground Surface Elevation (ft): N/A Depth to Water (ft): NOT ENCOUNTERED

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.	SAMPLES DRIVE	SAMPLES BULK	BLOWS	MOISTURE (%)	DRY UNIT WT. (pcf)	OTHER
		SAND WITH SILT AND GRAVEL (SP-SM): fine to medium-grained, light brown.	■		26/34/50	8	135	
40		-greenish gray	☒		40/17/30			
45		-light brown	■		18,50	7		
		SANDY SILT (SM): fine to medium-grained sand, light brown.						
50		**SAND WITH SILT AND GRAVEL (SP-SM):** fine to medium-grained, light brown.	☒		17/18/40			
55			■		29,50	4	119	
60			☒		14/23/18			
65			■		50	3	131	

Converse Consultants

Project Name
HERALD EXAMINER BLDGS & 12th STREET BUILDING
LOS ANGELES, CALIFORNIA
FOR: URBAN PARTNERS

Project No. 04-31-240-02

Drawing No. A-4b

Log of Boring No. BH-3

Dates Drilled: 12/6/2004 Logged by: JLM Checked By: JSS

Equipment: 8" HOLLOW STEM AUGER Driving Weight and Drop: 140 lbs / 30 in

Ground Surface Elevation (ft): N/A Depth to Water (ft): NOT ENCOUNTERED

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.	SAMPLES: DRIVE	SAMPLES: BULK	BLOWS	MOISTURE (%)	DRY UNIT WT. (pcf)	OTHER
		SAND WITH SILT AND GRAVEL (SP-SM): fine to medium-grained, light brown.	X		28,50			
75			■		50			
		Bottom of boring at 75.5 feet. Groundwater not encountered. Boring backfilled with soil cuttings						

Converse Consultants

Project Name
HERALD EXAMINER BLDGS & 12th STREET BUILDING LOS ANGELES, CALIFORNIA FOR: URBAN PARTNERS

Project No. **04-31-240-02**

Drawing No. **A-4c**

Log of Boring No. BH-4

Dates Drilled: 12/7/2004 Logged by: JLM Checked By: JSS

Equipment: 8" HOLLOW STEM AUGER Driving Weight and Drop: 140 lbs / 30 in

Ground Surface Elevation (ft): N/A Depth to Water (ft): NOT ENCOUNTERED

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.	SAMPLES: DRIVE	SAMPLES: BULK	BLOWS	MOISTURE (%)	DRY UNIT WT. (pcf)	OTHER
0		5" ASPHALT CONCRETE PAVEMENT						max,ei ca,er
		FILL: **SILTY SAND (SM):** fine to medium-grained, some small pieces of debris, brown.	■	⊠	3/5/11	10	115	
5		**ALLUVIUM:** **SAND WITH SILT (SP-SM):** medium to coarse-grained, light to greenish brown.	■		21/34/50	14	134	ds
		-gravelly						
10			■	⊠	39/38/46			
15			■		39,50	3	126	
20			☒		4/21/30			
25		**SANDY GRAVEL (GP):** fine to coarse-grained, brown.	■		19,50	4	133	
30		**SAND WITH SILT (SP-SM):** medium to coarse-grained, light brown.	☒		19/31/16	1		

Converse Consultants

Project Name: HERALD EXAMINER BLDGS & 12th STREET BUILDING LOS ANGELES, CALIFORNIA FOR: URBAN PARTNERS

Project No. 04-31-240-02

Drawing No. A-5a

Log of Boring No. BH-4

Dates Drilled: 12/7/2004 | Logged by: JLM | Checked By: JSS

Equipment: 8" HOLLOW STEM AUGER | Driving Weight and Drop: 140 lbs / 30 in

Ground Surface Elevation (ft): N/A | Depth to Water (ft): NOT ENCOUNTERED

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.	SAMPLES DRIVE	SAMPLES BULK	BLOWS	MOISTURE (%)	DRY UNIT WT. (pcf)	OTHER
		SAND WITH SILT (SP-SM): medium to coarse-grained, light brown.	■		9/21/31	13	119	
40		-gravelly	☒		24,50			
45			■		36,50	5	119	
50			☒		41,50			
		Bottom of boring at 51 feet. Groundwater not encountered. Boring backfilled with soil cuttings.						

Converse Consultants

Project Name: HERALD EXAMINER BLDGS & 12th STREET BUILDING LOS ANGELES, CALIFORNIA FOR: URBAN PARTNERS

Project No. 04-31-240-02

Drawing No. A-5b

Log of Boring No. BH-5

Dates Drilled: 12/7/2004 Logged by: JLM Checked By: JSS

Equipment: 8" HOLLOW STEM AUGER Driving Weight and Drop: 140 lbs / 30 in

Ground Surface Elevation (ft): N/A Depth to Water (ft): NOT ENCOUNTERED

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.	SAMPLES DRIVE	SAMPLES BULK	BLOWS	MOISTURE (%)	DRY UNIT WT. (pcf)	OTHER
		4" ASPHALT CONCRETE						
		ALLUVIUM: **SANDY CLAY (CL):** fine-grained sand, brown.						
			■	☒	5/12/8	12	122	ma
5		**SAND WITH SILT (SP-SM):** medium to coarse-grained, light brown.	■		33/34/31	4	128	
10		-some gravel	□		8,50			
15			■	☒	32,50	4	127	ma
20			■		50/4"	4	118	
25			■		33,50	4	127	
30			■		45,50	8	111	
		Bottom of boring at 31 feet. Groundwater not encountered. Boring backfilled with soil cuttings.						

Converse Consultants

Project Name
HERALD EXAMINER BLDGS & 12th STREET BUILDING LOS ANGELES, CALIFORNIA FOR: URBAN PARTNERS

Project No. **04-31-240-02**

Drawing No. **A-6**

Log of Boring No. BH-6

Dates Drilled: 12/7/2004 | Logged by: JLM | Checked By: JSS

Equipment: 8" HOLLOW STEM AUGER | Driving Weight and Drop: 140 lbs / 30 in

Ground Surface Elevation (ft): N/A | Depth to Water (ft): NOT ENCOUNTERED

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.	SAMPLES DRIVE	SAMPLES BULK	BLOWS	MOISTURE (%)	DRY UNIT WT. (pcf)	OTHER
		4" ASPHALT CONCRETE						
		ALLUVIUM: **SANDY CLAY (CL):** fine-grained, dark brown.	■	▩	6/15/22	5	129	
5		**SILTY SAND (SM):** fine to medium-grained, light brown.	■		6/16/48	6	113	
		SAND WITH SILT AND GRAVEL (SP-SM): fine to medium-grained sand, gravel to 1" size.						
10		-medium to coarse grained sand	■		20/37/50	3	124	
15		-no gravel	■		25/28/36	6	113	c
20			■		20/25/25	6	122	
25		**SANDY CLAY (CL):** fine-grained sand, light brown to reddish brown.	■	▩	6/21/34	17	113	
30		-light brown	■		3/10/24	18	108	
		Bottom of boring at 31.5 feet. Groundwater not encountered. Boring backfilled with soil cuttings.						

Converse Consultants

Project Name: HERALD EXAMINER BLDGS & 12th STREET BUILDING, LOS ANGELES, CALIFORNIA, FOR: URBAN PARTNERS

Project No. 04-31-240-02

Drawing No. A-7

Log of Boring No. BH-7

Dates Drilled: 4/23/2005 Logged by: RAM Checked By: JSS

Equipment: 8" HOLLOW STEM AUGER Driving Weight and Drop: 140 lbs / 30 in

Ground Surface Elevation (ft): N/A Depth to Water (ft): NOT ENCOUNTERED

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.	SAMPLES DRIVE	SAMPLES BULK	BLOWS	MOISTURE (%)	DRY UNIT WT. (pcf)	OTHER
		5" ASPHALT CONCRETE PAVEMENT						
		FILL: **SANDY CLAY (CL):** fine-grained sand, dark brown.		X				
5			X		11,9,20	13	120	
10		**ALLUVIUM (Qal):** **SAND WITH SILT AND GRAVEL (SP-SM):** fine to coarse-grained, brown.	X		9,50/4"	4	102	
15			X		50	4	110	
20		-light brown	X		50	5	126	
25		-orange brown	X		19,30,24			
30		-brown	X		50,4,16	4	116	

Converse Consultants

Project Name
HERALD EXAMINER BLDGS & 12th STREET BUILDING
LOS ANGELES, CALIFORNIA
FOR: URBAN PARTNERS

Project No. 05-31-240-02

Drawing No. A8a

Log of Boring No. BH-7

Dates Drilled: 4/23/2005 | Logged by: RAM | Checked By: JSS

Equipment: 8" HOLLOW STEM AUGER | Driving Weight and Drop: 140 lbs / 30 in

Ground Surface Elevation (ft): N/A | Depth to Water (ft): NOT ENCOUNTERED

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.	SAMPLES DRIVE	SAMPLES BULK	BLOWS	MOISTURE (%)	DRY UNIT WT. (pcf)	OTHER
		SAND WITH SILT AND GRAVEL (SP-SM): fine to coarse-grained, brown.			19,50			
40					35,50	5	109	
45		**SILTY SAND (SM):** fine-grained, olive brown.			4,18,18			
50		-brown			14,50	17	119	ds
55		**SAND WITH SILT AND GRAVEL (SP-SM):** fine to coarse-grained, brown.			28,25,30			
60					50,3,115	3	115	ds
65		**SILTY SAND (SM):** fine-grained, brown.			16,24,35			

Log of Boring No. BH-7

Dates Drilled: 4/23/2005 Logged by: RAM Checked By: JSS

Equipment: 8" HOLLOW STEM AUGER Driving Weight and Drop: 140 lbs / 30 in

Ground Surface Elevation (ft): N/A Depth to Water (ft): NOT ENCOUNTERED

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.	SAMPLES DRIVE	SAMPLES BULK	BLOWS	MOISTURE (%)	DRY UNIT WT. (pcf)	OTHER
		SAND WITH SILT AND GRAVEL (SP-SM): fine to coarse-grained sand, brown.			17,21,40	28	99	ds,ma,h
75					50			
80		**SILTY SAND WITH GRAVEL (SM):** fine to coarse-grained, brown.			50	4	110	
85		-light brown			50			
90					50/3"			
95		**SAND WITH SILT AND GRAVEL (SP-SM):** fine to coarse-grained, brown.			30,50			
100		-light gray brown			50	4	100	ma

Converse Consultants

Project Name
HERALD EXAMINER BLDGS & 12th STREET BUILDING LOS ANGELES, CALIFORNIA FOR: URBAN PARTNERS

Project No. **05-31-240-02**

Drawing No. **A8c**

Log of Boring No. BH-7

Dates Drilled: 4/23/2005 Logged by: RAM Checked By: JSS

Equipment: 8" HOLLOW STEM AUGER Driving Weight and Drop: 140 lbs / 30 in

Ground Surface Elevation (ft): N/A Depth to Water (ft): NOT ENCOUNTERED

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.	SAMPLES: DRIVE	SAMPLES: BULK	BLOWS	MOISTURE (%)	DRY UNIT WT. (pcf)	OTHER
		SAND WITH SILT AND GRAVEL (SP-SM): fine to coarse-grained, light brown.	X		48,41,50			
110			■	▨	50	4	116	ma
115		-light gray brown						
120			■		50/2"			
		Bottom of boring at 120.2 feet. Groundwater not encountered. Boring backfilled with soil cuttings.						

Converse Consultants

Project Name: HERALD EXAMINER BLDGS & 12th STREET BUILDING, LOS ANGELES, CALIFORNIA, FOR: URBAN PARTNERS

Project No. 05-31-240-02

Drawing No. A8d

Log of Boring No. BH-8

Dates Drilled: 4/24/2005 Logged by: RAM Checked By: JSS

Equipment: 8" HOLLOW STEM AUGER Driving Weight and Drop: 140 lbs / 30 in

Ground Surface Elevation (ft): N/A Depth to Water (ft): NOT ENCOUNTERED

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.	SAMPLES DRIVE	SAMPLES BULK	BLOWS	MOISTURE (%)	DRY UNIT WT. (pcf)	OTHER
		3" ASPHALT CONCRETE PAVEMENT						
		FILL: **SANDY CLAY (CL):** fine-grained sand, brown.						
5		**ALLUVIUM (Qal):** **SAND WITH SILT AND GRAVEL (SP-SM):** fine to coarse-grained, brown.			18,20,21	7	122	
10		-light brown			32,30,41	6	129	
15		-olive brown			50/3"			
20		**SILTY SAND (SM):** fine-grained, brown.			24,37,35	11	108	
25		**SAND WITH SILT AND GRAVEL (SP-SM):** fine to coarse-grained, brown.			16,16,24			
30		**SILTY SAND (SM):** fine-grained, orange brown.			35,50/2"	9	126	

Converse Consultants

Project Name
HERALD EXAMINER BLDGS &
12th STREET BUILDING
LOS ANGELES, CALIFORNIA
FOR: URBAN PARTNERS

Project No.
05-31-240-02

Drawing No.
A9a

Log of Boring No. BH-8

Dates Drilled: 4/24/2005 | Logged by: RAM | Checked By: JSS

Equipment: 8" HOLLOW STEM AUGER | Driving Weight and Drop: 140 lbs / 30 in

Ground Surface Elevation (ft): N/A | Depth to Water (ft): NOT ENCOUNTERED

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.	SAMPLES DRIVE	SAMPLES BULK	BLOWS	MOISTURE (%)	DRY UNIT WT. (pcf)	OTHER
		SAND WITH SILT AND GRAVEL (SP-SM): fine to coarse-grained, orange brown.	X		46,50			
40		**SILTY SAND (SM):** fine-grained, dark gray.	■		24,23,23			ds
		Bottom of boring at 41.5 feet. Boring terminated due to petrolifours odor at 41 feet. Groundwater not encountered. Boring backfilled with soil cuttings and bentonite grout.						

Converse Consultants

Project Name: HERALD EXAMINER BLDGS & 12th STREET BUILDING, LOS ANGELES, CALIFORNIA, FOR: URBAN PARTNERS

Project No. 05-31-240-02

Drawing No. A9b

Log of Boring No. BH-9

Dates Drilled: 4/25/2005 | Logged by: RAM | Checked By: JSS

Equipment: 8" HOLLOW STEM AUGER | Driving Weight and Drop: 140 lbs / 30 in

Ground Surface Elevation (ft): N/A | Depth to Water (ft): NOT ENCOUNTERED

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.	SAMPLES DRIVE	SAMPLES BULK	BLOWS	MOISTURE (%)	DRY UNIT WT. (pcf)	OTHER
0		3" ASPHALT CONCRETE PAVEMENT OVER 2" PORTLAND CEMENT CONCRETE OVER 3" BASE MATERIAL						
		FILL: **SAND WITH SILT AND GRAVEL (SP-SM):** fine to medium-grained, dark gray.		X				
5			X		5,5,6	13	118	ma,h
10		**ALLUVIUM (Qal):** **SAND WITH SILT AND GRAVEL (SP-SM):** fine to coarse-grained, gray brown.	X		18,22,27	3	139	
15		-light brown	X		21,38,50	8	126	
20		-brown	X		28,39,50	4	133	
25		-orange brown	X		7,32,50			
30		-light gray brown	X		59,50/3"	9	122	

Converse Consultants

Project Name: HERALD EXAMINER BLDGS & 12th STREET BUILDING, LOS ANGELES, CALIFORNIA, FOR: URBAN PARTNERS

Project No. 05-31-240-02

Drawing No. A-10a

Log of Boring No. BH-9

Dates Drilled: 4/25/2005 Logged by: RAM Checked By: JSS

Equipment: 8" HOLLOW STEM AUGER Driving Weight and Drop: 140 lbs / 30 in

Ground Surface Elevation (ft): N/A Depth to Water (ft): NOT ENCOUNTERED

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.	SAMPLES: DRIVE	SAMPLES: BULK	BLOWS	MOISTURE (%)	DRY UNIT WT. (pcf)	OTHER
		SAND WITH SILT AND GRAVEL (SP-SM): fine to coarse-grained, orange brown.	X		8,10,16			
40		-gray brown	■		21,50	9	121	
45		-orange brown	X		26,31,50			
50			■		50/4"			
55		**SANDY SILT (ML):** fine-grained sand, orange brown.	X		25,18,50			
60		**SAND WITH SILT AND GRAVEL (SP-SM):** fine to coarse-grained, gray brown.	■		30/50	4	113	
65		-light olive brown	X		50/4"			

Converse Consultants

Project Name
HERALD EXAMINER BLDGS & 12th STREET BUILDING LOS ANGELES, CALIFORNIA FOR: URBAN PARTNERS

Project No. **05-31-240-02**

Drawing No. **A-10b**

Log of Boring No. BH-9

Dates Drilled: 4/25/2005 Logged by: RAM Checked By: JSS

Equipment: 8" HOLLOW STEM AUGER Driving Weight and Drop: 140 lbs / 30 in

Ground Surface Elevation (ft): N/A Depth to Water (ft): NOT ENCOUNTERED

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.	SAMPLES DRIVE	SAMPLES BULK	BLOWS	MOISTURE (%)	DRY UNIT WT. (pcf)	OTHER
		SAND WITH SILT AND GRAVEL (SP-SM): fine to coarse-grained, orange olive.			50	4		
75		**SANDY SILT (ML):** fine-grained sand, orange olive.			29,30,20			
80		**SAND WITH SILT AND GRAVEL (SP-SM):** fine to coarse-grained sand, orange brown.			15,20	4	113	
85		-light gray brown			26,40,46			
90		**SANDY CLAY (CL):** fine-grained sand, olive brown.			21,50			
		SAND WITH SILT AND GRAVEL (SP-SM): fine to coarse-grained, light brown.						
95					44,44,44			
100		**SANDY CLAY (CL):** fine-grained sand, olive brown.			15,22,50	28	95	ma
		Bottom of boring at 101.5 feet. Groundwater not encountered. Boring backfilled with soil cuttings and bentonite grout.						

Converse Consultants

Project Name
HERALD EXAMINER BLDGS &
12th STREET BUILDING
LOS ANGELES, CALIFORNIA
FOR: URBAN PARTNERS

Project No. **05-31-240-02**

Drawing No. **A-10c**

Log of Boring No. BH-10

Dates Drilled: 4/26/2005 Logged by: RAM Checked By: JSS

Equipment: 8" HOLLOW STEM AUGER Driving Weight and Drop: 140 lbs / 30 in

Ground Surface Elevation (ft): N/A Depth to Water (ft): NOT ENCOUNTERED

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.	SAMPLES DRIVE	SAMPLES BULK	BLOWS	MOISTURE (%)	DRY UNIT WT. (pcf)	OTHER
		3" ASPHALT CONCRETE PAVEMENT OVER 4" PORTLAND CEMENT CONCRETE OVER 3" BASE MATERIAL						
		FILL: **SANDY CLAY (CL):** fine-grained sand, dark brown.						
5			■		5,30,39			
		ALLUVIUM (Qal): **SAND WITH SILT AND GRAVEL (SP-SM):** fine to coarse-grained, dark gray.						
10		-brown	■		20,20,35	5	132	
15			■		30,50	4	138	
20			■		23,37,33	5	128	
25		**SANDY CLAY (CL):** fine-grained sand, light brown.	☒		4,7,11			
30		**CLAYEY SAND (SC):** fine-grained, olive brown.	■		8,24,26	6	115	

Converse Consultants

Project Name
HERALD EXAMINER BLDGS & 12th STREET BUILDING LOS ANGELES, CALIFORNIA FOR: URBAN PARTNERS

Project No. **05-31-240-02**

Drawing No. **A-11a**

Log of Boring No. BH-10

Dates Drilled: 4/26/2005 Logged by: RAM Checked By: JSS

Equipment: 8" HOLLOW STEM AUGER Driving Weight and Drop: 140 lbs / 30 in

Ground Surface Elevation (ft): N/A Depth to Water (ft): NOT ENCOUNTERED

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.	SAMPLES DRIVE	SAMPLES BULK	BLOWS	MOISTURE (%)	DRY UNIT WT. (pcf)	OTHER
		SANDY SILT (ML): fine-grained sand, light brown.			6,12,14			
40		**SAND WITH SILT AND GRAVEL (SP-SM):** fine to coarse-grained, light orange brown.			50/3"			
45					18,22,21			
50		**SILTY SAND (SM):** fine to coarse-grained, olive brown.			15,33,50	21	112	ds
55					5,14,50/3"			
60		**SAND WITH GRAVEL (SP):** coarse-grained, light brown.			19,50	6	108	
65		**SAND WITH SILT AND GRAVEL (SP-SM):** fine to coarse-grained, light brown.			50			

Converse Consultants

Project Name
HERALD EXAMINER BLDGS & 12th STREET BUILDING
LOS ANGELES, CALIFORNIA
FOR: URBAN PARTNERS

Project No. 05-31-240-02

Drawing No. A-11b

Log of Boring No. BH-10

Dates Drilled: 4/26/2005 Logged by: RAM Checked By: JSS

Equipment: 8" HOLLOW STEM AUGER Driving Weight and Drop: 140 lbs / 30 in

Ground Surface Elevation (ft): N/A Depth to Water (ft): NOT ENCOUNTERED

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.	SAMPLES DRIVE	SAMPLES BULK	BLOWS	MOISTURE (%)	DRY UNIT WT. (pcf)	OTHER
		SAND WITH SILT AND GRAVEL (GP): fine to coarse-grained, brown.			32,50	7	132	ma
75		**SILTY SAND WITH GRAVEL (SM):** fine to medium-grained, light brown.			5,40,41			
80					50			
85					22,48,50			
90		**SAND WITH SILT AND GRAVEL (SP-SM):** fine-grained, light brown.			23,50	90	101	ma
95					25,45,50			
100					32,50			
		Bottom of boring at 101.5 feet. Groundwater not encountered. Boring backfilled with soil cuttings and bentonite grout.						

Converse Consultants

Project Name
HERALD EXAMINER BLDGS &
12th STREET BUILDING
LOS ANGELES, CALIFORNIA
FOR: URBAN PARTNERS

Project No. 05-31-240-02

Drawing No. A-11c

APPENDIX B

LABORATORY TEST PROGRAM

APPENDIX B

LABORATORY TEST PROGRAM

Tests were conducted in our laboratory on representative soil samples for the purpose of classification and evaluation of their relevant physical characteristics and engineering properties. The amount and selection of tests were based on the geotechnical requirements of the project. Test results are presented herein and on the Logs of Borings in Appendix A, *Field Exploration*. The following is a summary of the various laboratory tests conducted for this project.

Moisture Content and Dry Density

Results of moisture content and dry density tests performed on relatively undisturbed ring samples were used to aid in the classification of the soils and to provide quantitative measure of the *in situ* dry density. Data obtained from this test provides qualitative information on strength and compressibility characteristics of site soils. For test results, see the Logs of Borings in Appendix A, *Field Exploration*.

Particle-Size Analysis

To aid in classification of the soils, mechanical particle-size analysis was performed on three representative soil samples. Tests were performed in accordance with the ASTM Standard D422 test method. For test results, see Drawing No. B-1 and B-2, *Grain Size Distribution Results*.

Laboratory Maximum Density Tests

Laboratory maximum dry density-optimum moisture content relationship tests were performed on two representative bulk samples. The tests were conducted in accordance with the ASTM Standard D1557 test method. The test results are presented in Drawing No. B-3, *Moisture-Density Relationship Results.*

Direct Shear Tests

Six direct shear tests were performed - five on relatively undisturbed ring samples and one on a sample remolded to 90 percent relative compaction. The remolded sample was sieved through a No. 10 sieve prior to remolding. All samples were tested at soaked moisture conditions. For each test, three specimens contained in brass sampler rings were placed, one at a time, directly into the test apparatus and subjected to a range of normal loads appropriate for the anticipated conditions. Each sample was then sheared at a constant strain rate of 0.01 inch/minute. Shear deformation was recorded until a maximum of about 0.25-inch shear displacement was achieved. Ultimate strength was selected from the shear stress vs. deformation data and plotted to determine the shear strength parameters. Test results are summarized in the following table. For test data, see Drawings No. B-4 through B-9, *Direct Shear Test Results*.

Table No. B-1, Summary of Direst Shear Test Results

Boring No.	Depth (feet)	Soil Description	Cohesion (psf)	Friction Angle (degree)
BH-1	15	Silty Sand (SM)	400	35
BH-3	0 – 5*	Sand Clay (CL)	450	23
BH-4	5	Sand with Silt (SP-SM)	500	38
BH-7	50	Silty Sand (SM)	350	33
BH-7	70	Sand with Silt (SP-SM)	550	28
BH-10	50	Silty Sand (SM)	300	32

*Sample remolded to 90 percent relative compaction

Consolidation Tests

Two consolidation tests were performed on relatively undisturbed ring samples. Preparation for this test involved trimming the sample, placing it in a one-inch high brass ring and loading it into the test apparatus, which contained porous stones to accommodate drainage during testing. The samples were tested at field moisture up to a normal load of 2.8 kips per square feet (ksf) and then in submerged conditions. Normal axial loads were applied to one end of the sample through the porous stones, and the resulting deflections were recorded at various times. The load was increased after the sample reached a reasonable state of equilibrium. Normal loads were applied at a constant load-increment ratio, successive loads being generally twice the preceding load.

Consolidation tests, including sample density and moisture content, are shown in Drawings No. B-10 and B-11, *Consolidation Test Results*.

Expansion Index Tests

Two representative samples were tested for expansion index to evaluate the expansion potential of material encountered at the sites. The tests were conducted in accordance with UBC Standard 29-2 (ASTM D4829). The test results are presented in the following table:

Table No. B-2, Summary of Expansion Index Test Results

Boring Number	Depth (feet)	Soil Description	Expansion Index	Expansion Potential
BH-3	0 — 5	Clay (CL)	64	Medium
BH-4	0 — 5	Silty Sand (SM)	17	Very Low

Soil Corrosivity

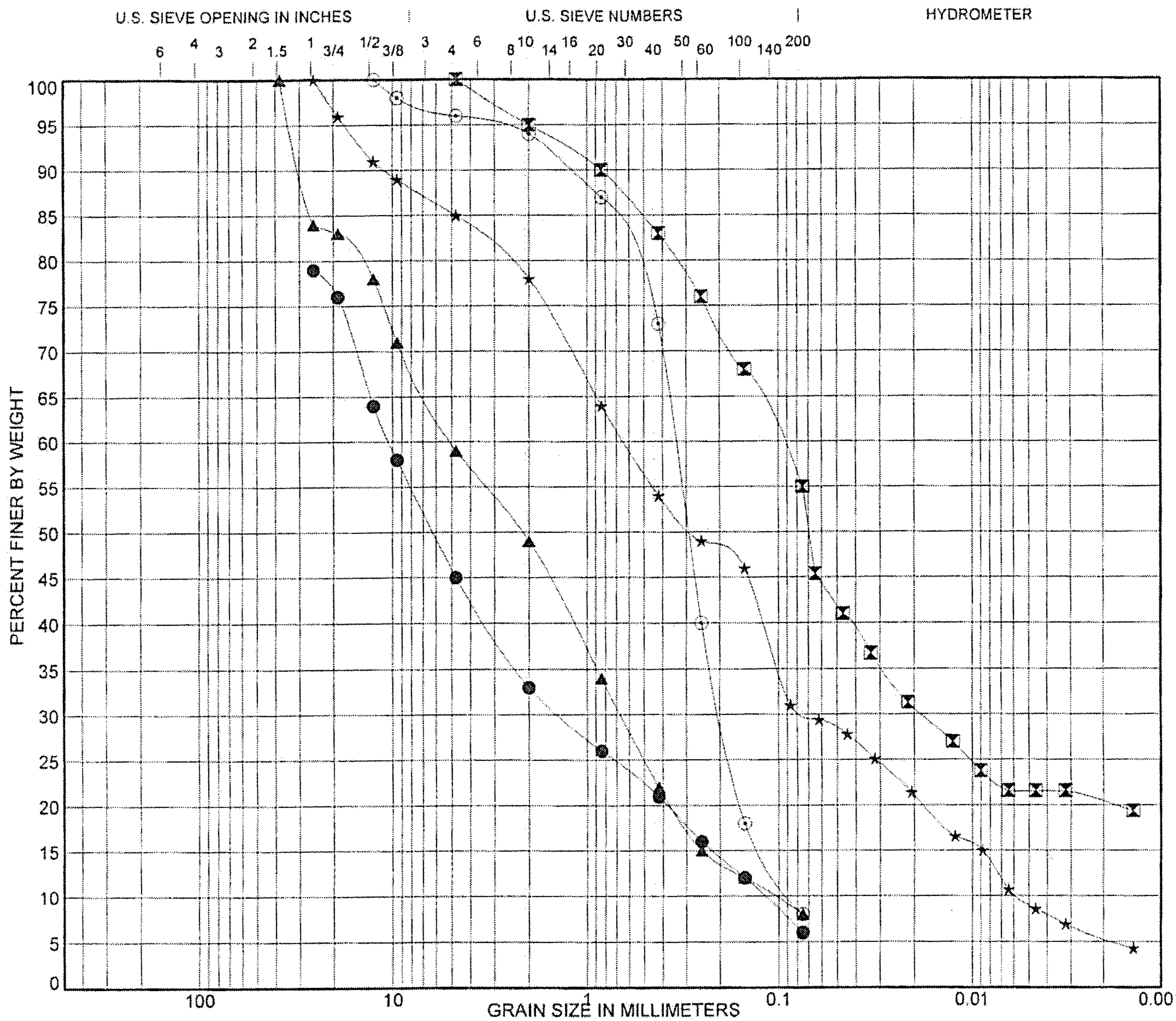
Two representative soil sample was tested to determine minimum electrical resistivity, pH, and chemical content, including soluble sulfate and chloride concentrations. The purpose of these tests is to determine the corrosion potential of site soils when placed in contact with common construction materials. Converse retained the Environmental Geotechnology Laboratory to perform the test. For test results, see the following table.

Table No. B-3, Soil Corrosivity Test Results

Boring No.	Depth (ft)	pH (Caltrans 643)	Chloride Content (Caltrans 422) (ppm)	Sulfate Content (Caltrans 417) (% by weight)	Minimum Resistivity (Caltrans 532) (ohm-cm)
BH-3	0 — 5	8.10	108	0.011	1,200
BH-4	0 — 5	7.27	100	0.009	1,500

Sample Storage

Samples presently stored in the Converse laboratory will be discarded 30 days after the date of this report, unless this office receives a specific request to retain samples for a longer period.



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

	Boring No.	Depth (ft)	Description	LL	PL	PI	Cc	Cu
●	BH-2	25	SAND WITH SILT AND GRAVEL (SP-SM)				1.54	87.83
⧗	BH-5	2	SANDY CLAY (CL)					
▲	BH-5	15	SAND WITH SILT (SP-SM)				0.84	47.61
★	BH-7	70	SAND WITH SILT AND GRAVEL (SP-SM)				1.35	111.04
⊙	BH-7	100	SAND WITH SILT AND GRAVEL (SP-SM)				1.33	3.98

	Boring No.	Depth (ft)	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	BH-2	25	25.4	10.41	1.379	0.119	34.0	39.0	6.0	
⧗	BH-5	2	4.75	0.098	0.018		0.0	45.0	55	
▲	BH-5	15	38.1	5.032	0.667	0.106	41.0	51.0	8.0	
★	BH-7	70	25.4	0.637	0.07	0.006	15.0		9.1	
⊙	BH-7	100	12.5	0.342	0.198	0.086	4.0	88.0	8.0	

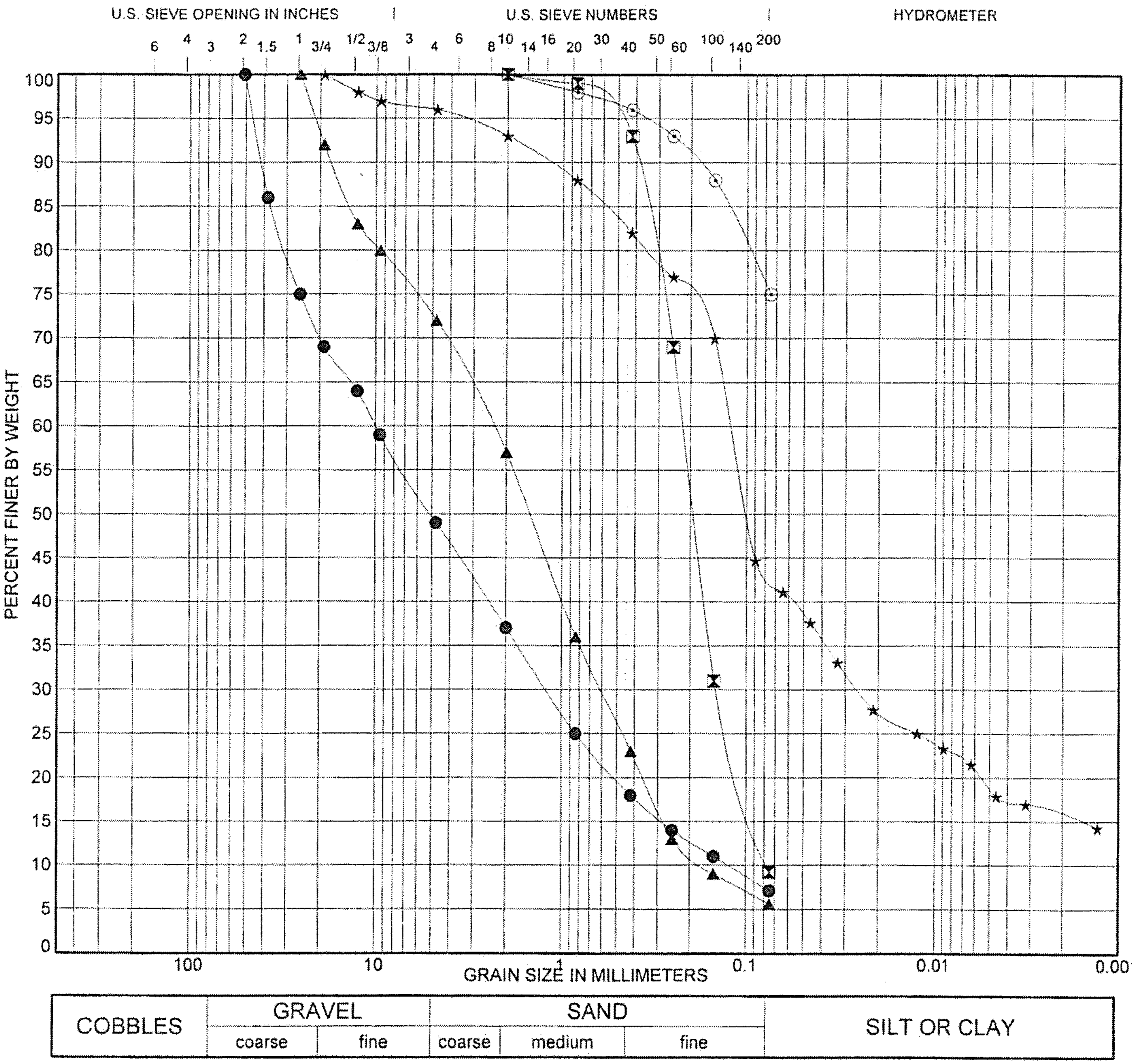
GRAIN SIZE DISTRIBUTION RESULTS

Converse Consultants

Project Name
HERALD EXAMINER BLDGS & 12th STREET BUILDING LOS ANGELES, CALIFORNIA FOR: URBAN PARTNERS

Project No.
05-31-240-02

Drawing No.
B-1



	Boring No.	Depth (ft)	Description	LL	PL	PI	Cc	Cu
●	**BH-10**	**70**	**SANDY GRAVEL WITH SILT (GP)**				**1.16**	**80.32**
⧗	**BH-10**	**90**	**SAND WITH SILT (SP-SM)**				**1.23**	**2.88**
▲	**BH-7**	**110**	**SAND WITH SILT AND GRAVEL (SP-SM)**				**0.92**	**14.02**
★	**BH-9**	**5**	**SANDY WITH SILT AND GRAVEL (SP-SM)**					
⊙	**BH-9**	**100**	**SAND CLAY (CL)**					

	Boring No.	Depth (ft)	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	**BH-10**	**70**	**50.8**	**10.036**	**1.206**	**0.125**	**51.0**	**41.9**	**7.1**	
⧗	**BH-10**	**90**	**2**	**0.221**	**0.144**	**0.077**	**0.0**	**90.8**	**9.2**	
▲	**BH-7**	**110**	**25.4**	**2.378**	**0.61**	**0.17**	**28.0**	**66.4**	**5.6**	
★	**BH-9**	**5**	**19**	**0.122**	**0.026**		**4.0**	77.1	**18.9**	
⊙	**BH-9**	**100**	**2**				**0.0**	**25.0**	**75.0**	

GRAIN SIZE DISTRIBUTION RESULTS

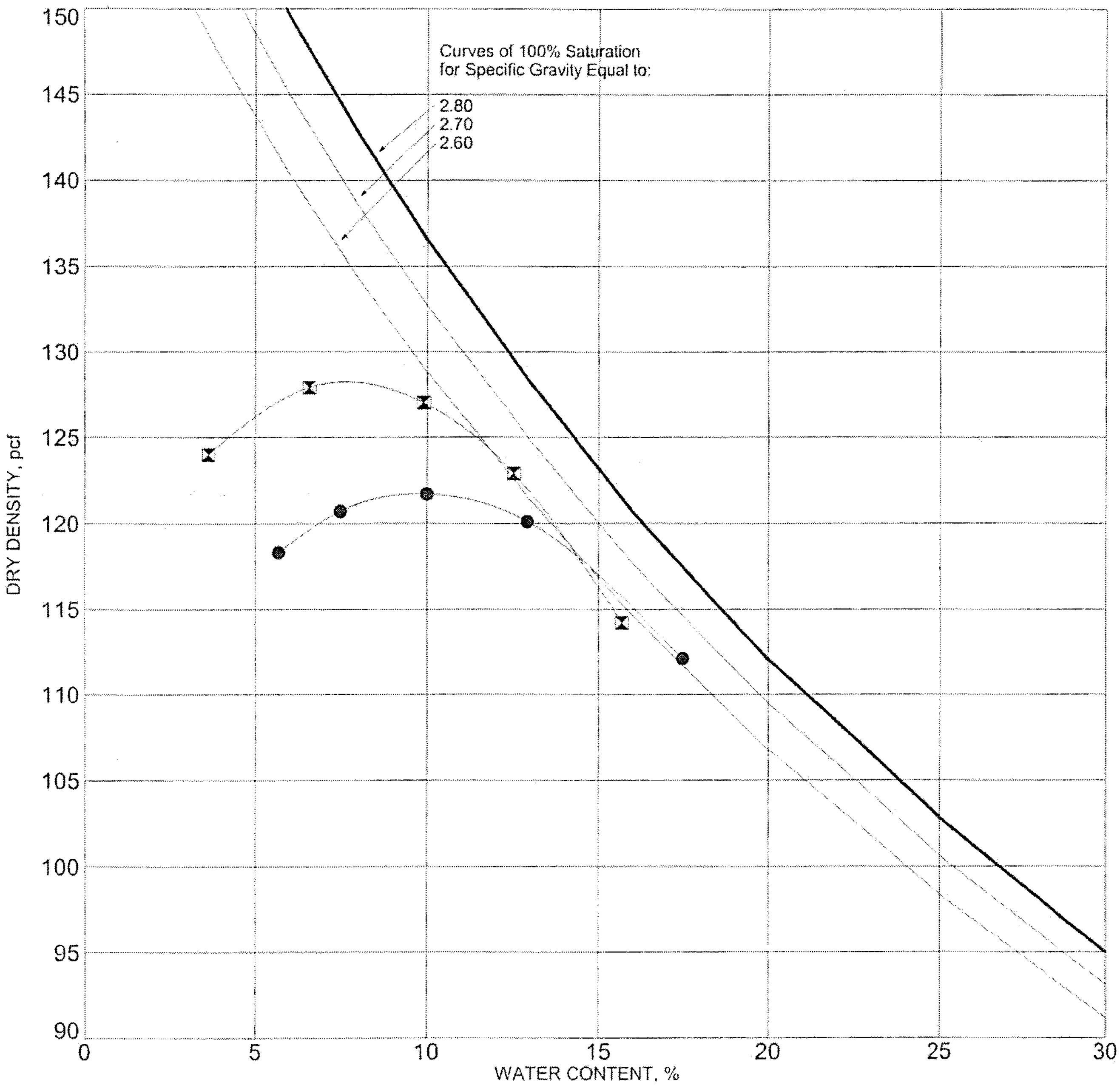
Converse Consultants

Project Name
HERALD EXAMINER BLDGS &
12th STREET BUILDING
LOS ANGELES, CALIFORNIA
FOR: URBAN PARTNERS

Project No.
05-31-240-02

Drawing No.
B-2

Project ID: 05-31-240-02.GPJ; Template: GRAIN SIZE



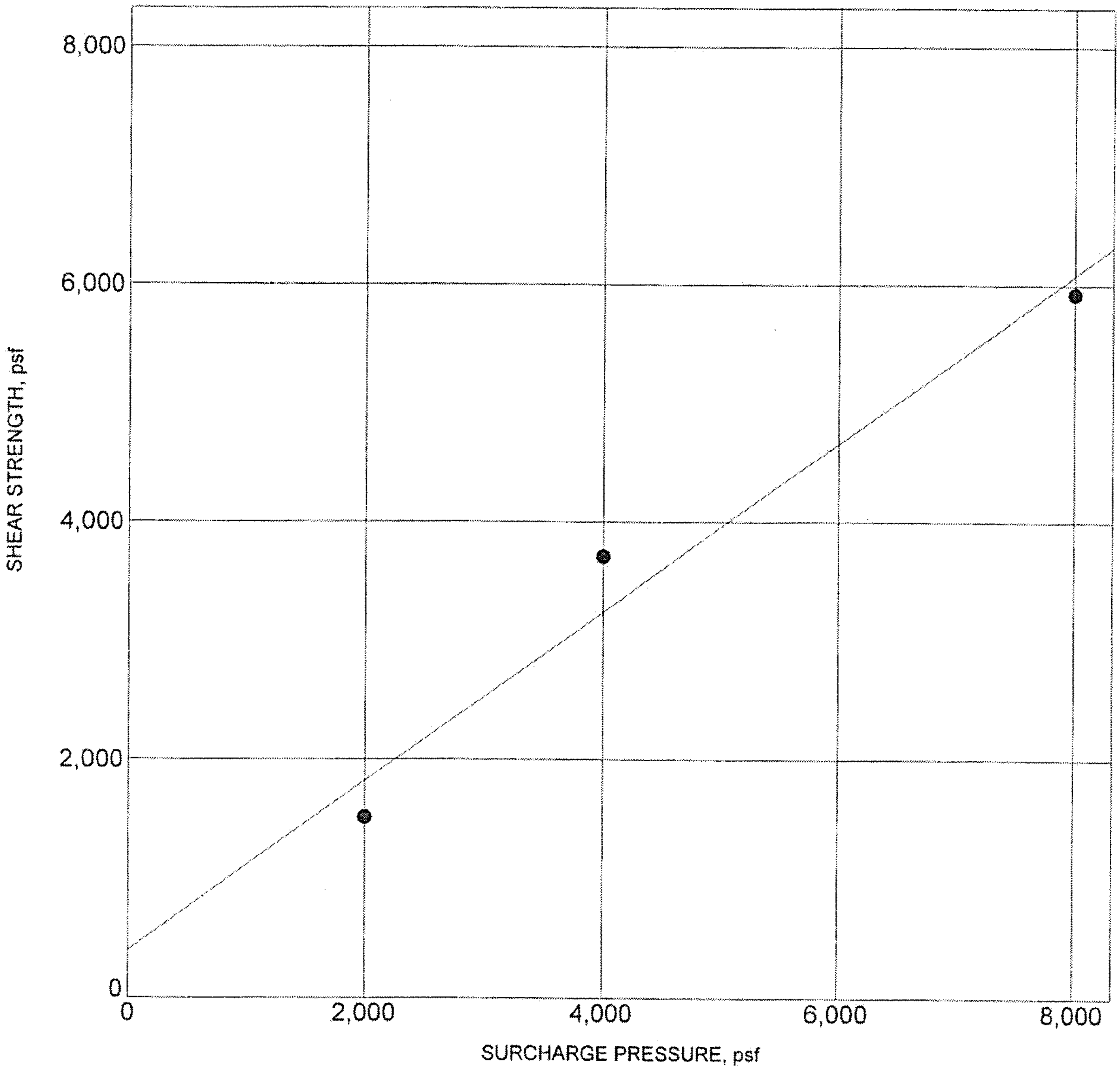
SYMBOL	BORING NO.	DEPTH (ft)	DESCRIPTION	ASTM TEST METHOD	OPTIMUM WATER, %	MAXIMUM DRY DENSITY, pcf
●	BH-3	0-5	SANDY CLAY (CL)	D1557 Method B	9.8	121.7
⧗	BH-4	0-5	SILTY SAND (SM)	D1557 Method B	6.6	127.9

NOTE:

MOISTURE-DENSITY RELATIONSHIP RESULTS

Converse Consultants

Project Name	Project No.	Drawing No.
HERALD EXAMINER BLDGS & 12th STREET BUILDING LOS ANGELES, CALIFORNIA FOR: URBAN PARTNERS	04-31-240-02	B-3



BORING NO. :	BH-1	DEPTH (ft) :	15
DESCRIPTION :	SILTY SAND (SM)		
COHESION (psf) :	400	FRICTION ANGLE (degrees):	35
MOISTURE CONTENT (%) :	16.3	DRY DENSITY (pcf) :	116.3

NOTE: Ultimate Strength.

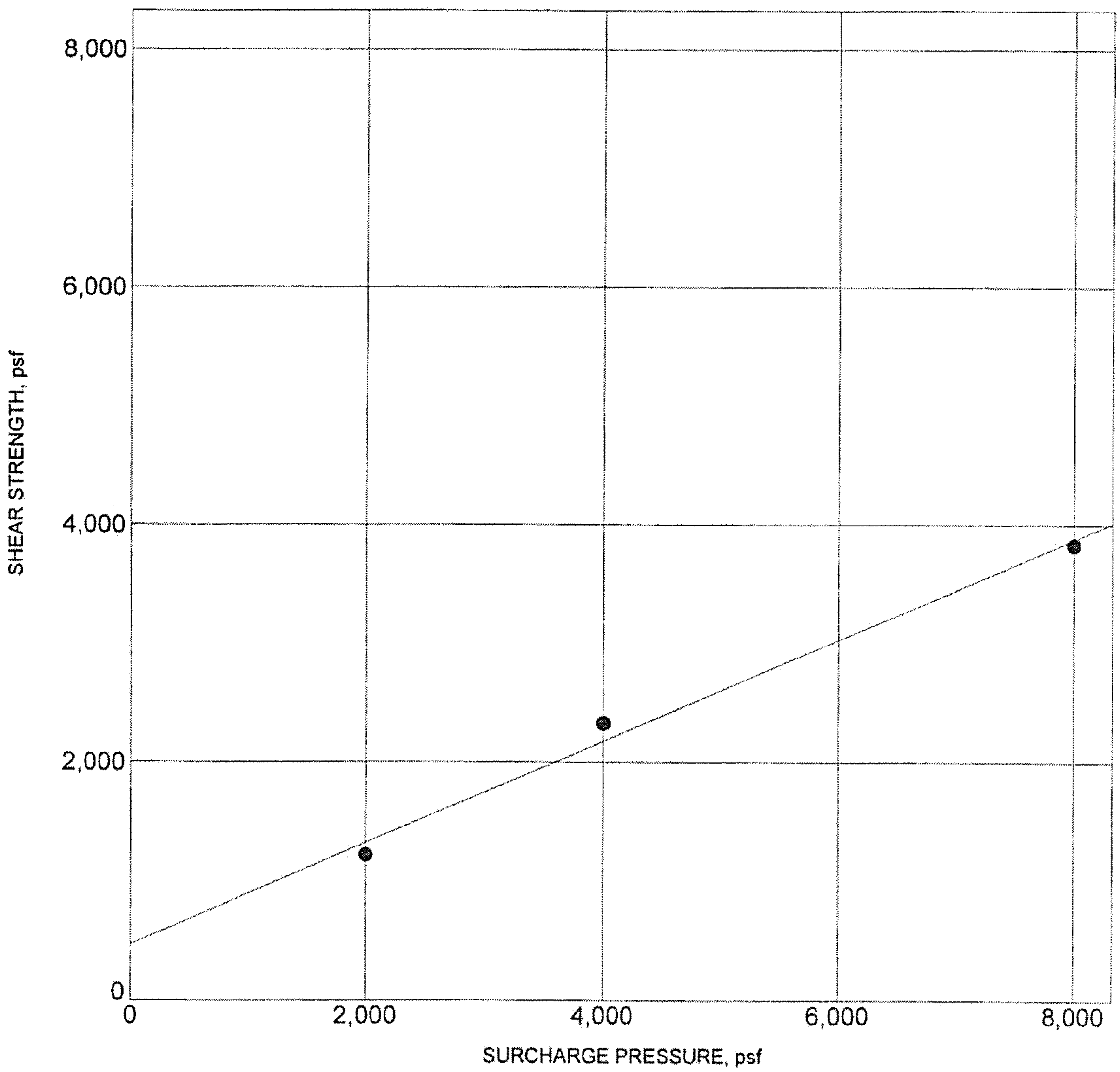
DIRECT SHEAR TEST RESULTS

Converse Consultants

Project Name
HERALD EXAMINER BLDGS & 12th STREET BUILDING LOS ANGELES, CALIFORNIA FOR: URBAN PARTNERS

Project No.
04-31-240-02

Drawing No.
B-4



BORING NO. :	BH-3	DEPTH (ft) :	0-5
DESCRIPTION :	SANDY CLAY (CL)		
COHESION (psf) :	450	FRICTION ANGLE (degrees):	23
MOISTURE CONTENT (%) :	20.2	DRY DENSITY (pcf) :	110.6

NOTE: Ultimate Strength. Sample remolded to 90% relative compaction

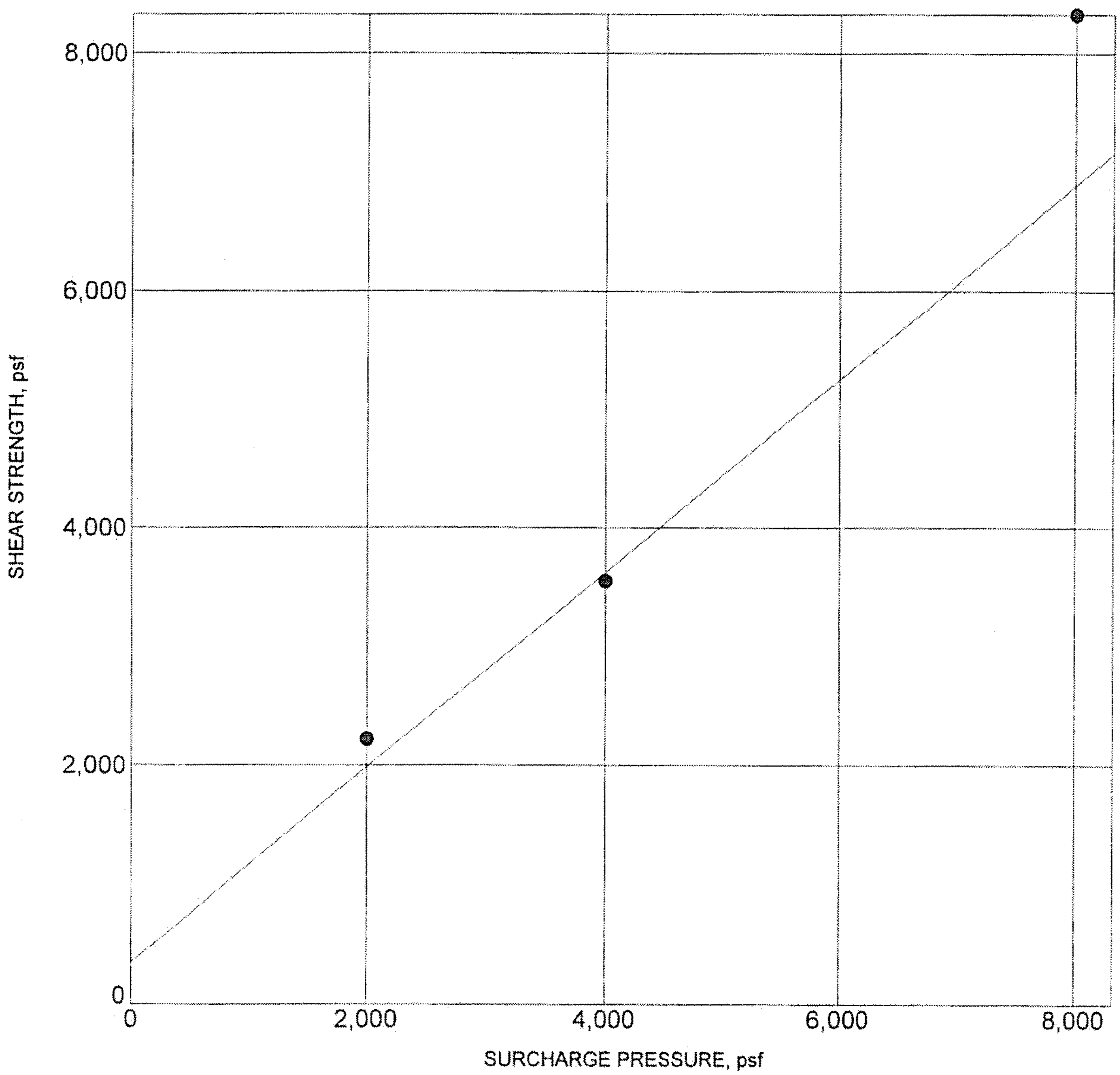
DIRECT SHEAR TEST RESULTS

Converse Consultants

Project Name
HERALD EXAMINER BLDGS &
12th STREET BUILDING
LOS ANGELES, CALIFORNIA
FOR: URBAN PARTNERS

Project No.
04-31-240-02

Drawing No.
B-5



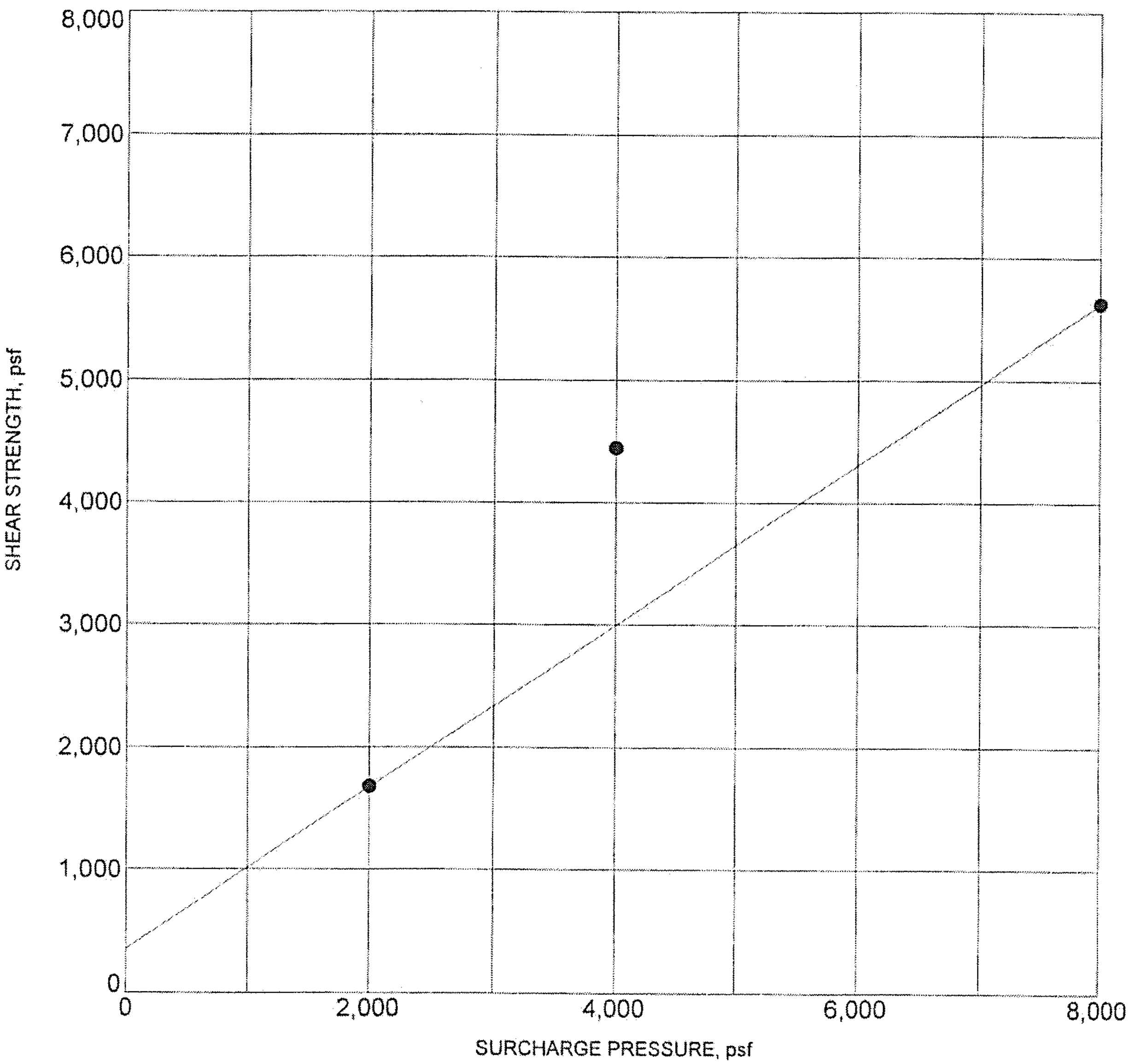
BORING NO. :	BH-4	DEPTH (ft) :	5
DESCRIPTION :	SAND WITH SILT (SP-SM)		
COHESION (psf) :	500	FRICTION ANGLE (degrees):	38
MOISTURE CONTENT (%) :	14.0	DRY DENSITY (pcf) :	133.8

NOTE: Ultimate Strength.

DIRECT SHEAR TEST RESULTS

Converse Consultants

Project Name	Project No.	Drawing No.
HERALD EXAMINER BLDGS & 12th STREET BUILDING LOS ANGELES, CALIFORNIA FOR: URBAN PARTNERS	04-34-240-01	B-6



BORING NO. :	BH-7	DEPTH (ft) :	50
DESCRIPTION :	SILTY SAND (SM)		
COHESION (psf) :	350	FRICTION ANGLE (degrees):	33
MOISTURE CONTENT (%) :	17.2	DRY DENSITY (pcf) :	119.0

NOTE: Ultimate Strength.

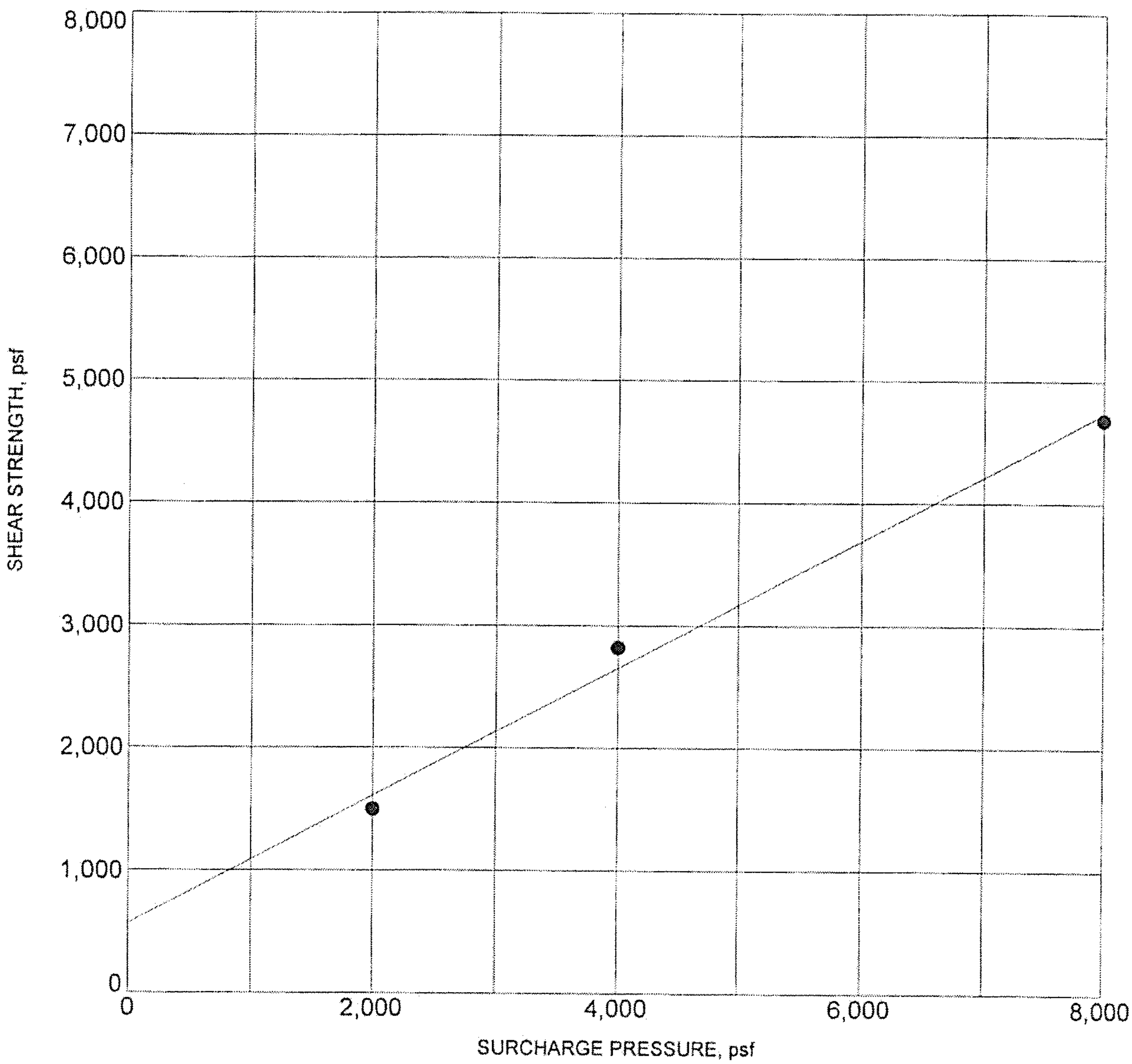
DIRECT SHEAR TEST RESULTS

Converse Consultants

Project Name
HERALD EXAMINER BLDGS &
12th STREET BUILDING
LOS ANGELES, CALIFORNIA
FOR: URBAN PARTNERS

Project No.
05-31-240-02

Drawing No.
B-7



BORING NO. :	BH-7	DEPTH (ft) :	70
DESCRIPTION :	SAND WITH SILT AND GRAVEL (SP-SM)		
COHESION (psf) :	550	FRICTION ANGLE (degrees):	28
MOISTURE CONTENT (%) :	28.2	DRY DENSITY (pcf) :	99.3

NOTE: Ultimate Strength.

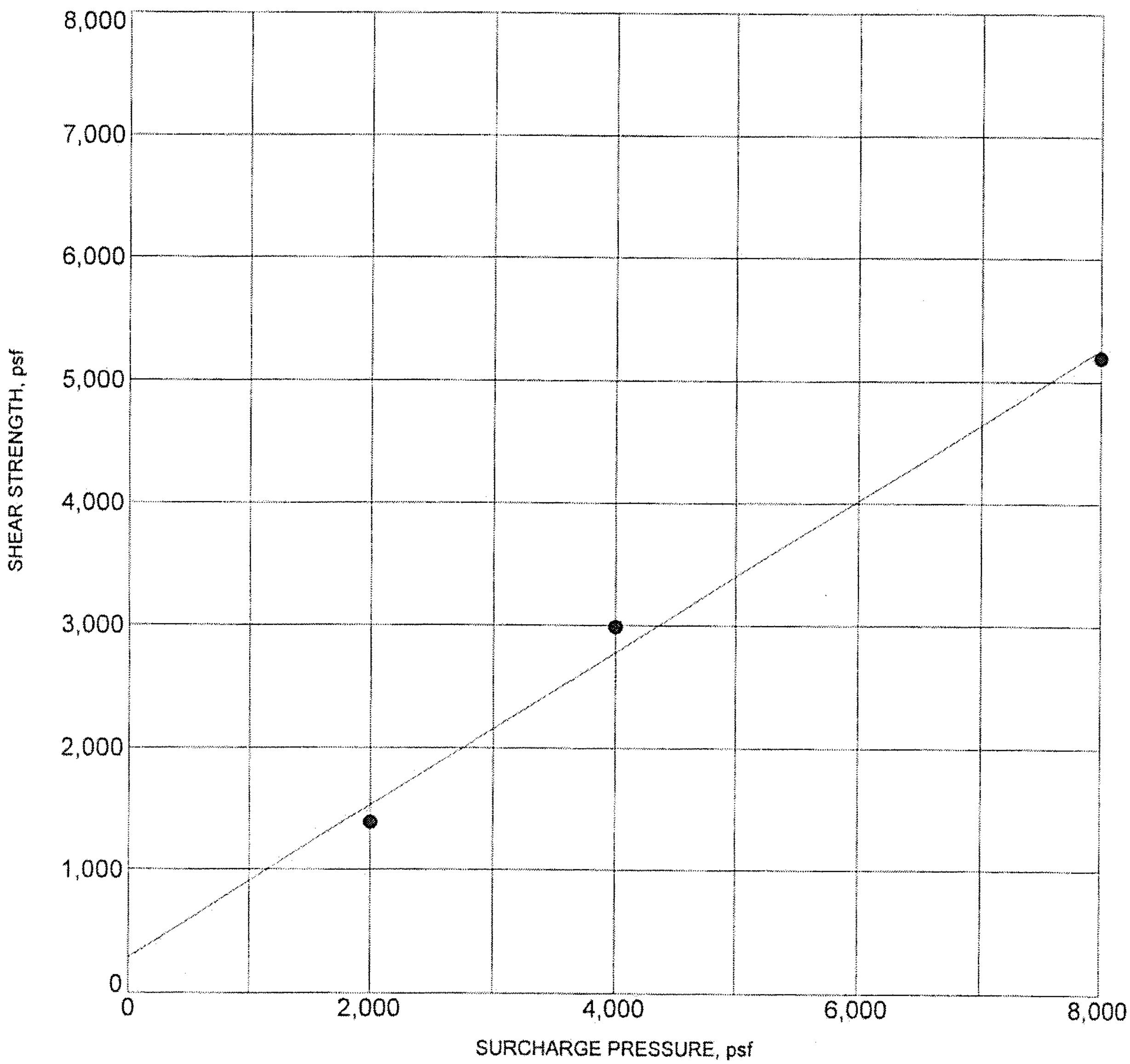
DIRECT SHEAR TEST RESULTS

Converse Consultants

Project Name
HERALD EXAMINER BLDGS &
12th STREET BUILDING
LOS ANGELES, CALIFORNIA
FOR: URBAN PARTNERS

Project No.
05-31-240-02

Drawing No.
B-8



BORING NO. :	BH-10	DEPTH (ft) :	50
DESCRIPTION :	SILTY SAND (SM)		
COHESION (psf) :	300	FRICTION ANGLE (degrees):	32
MOISTURE CONTENT (%) :	21.2	DRY DENSITY (pcf) :	112.3

NOTE: Ultimate Strength.

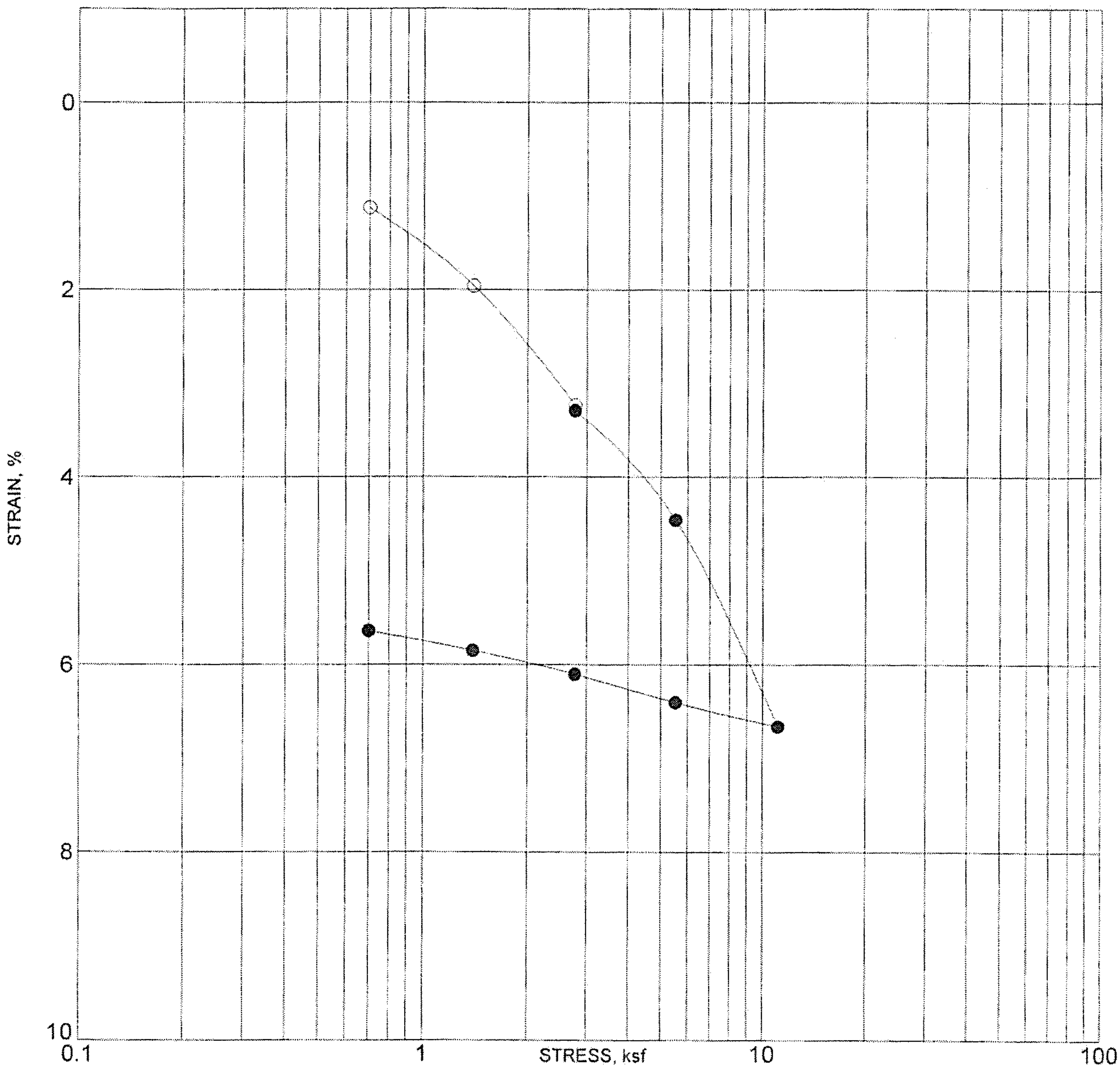
DIRECT SHEAR TEST RESULTS

Converse Consultants

Project Name
HERALD EXAMINER BLDGS & 12th STREET BUILDING LOS ANGELES, CALIFORNIA FOR: URBAN PARTNERS

Project No. **05-31-240-02**

Drawing No. **B-9**



BORING NO. :	BH-1	DEPTH (ft) :	20
DESCRIPTION :	SILTY SAND (SM)		

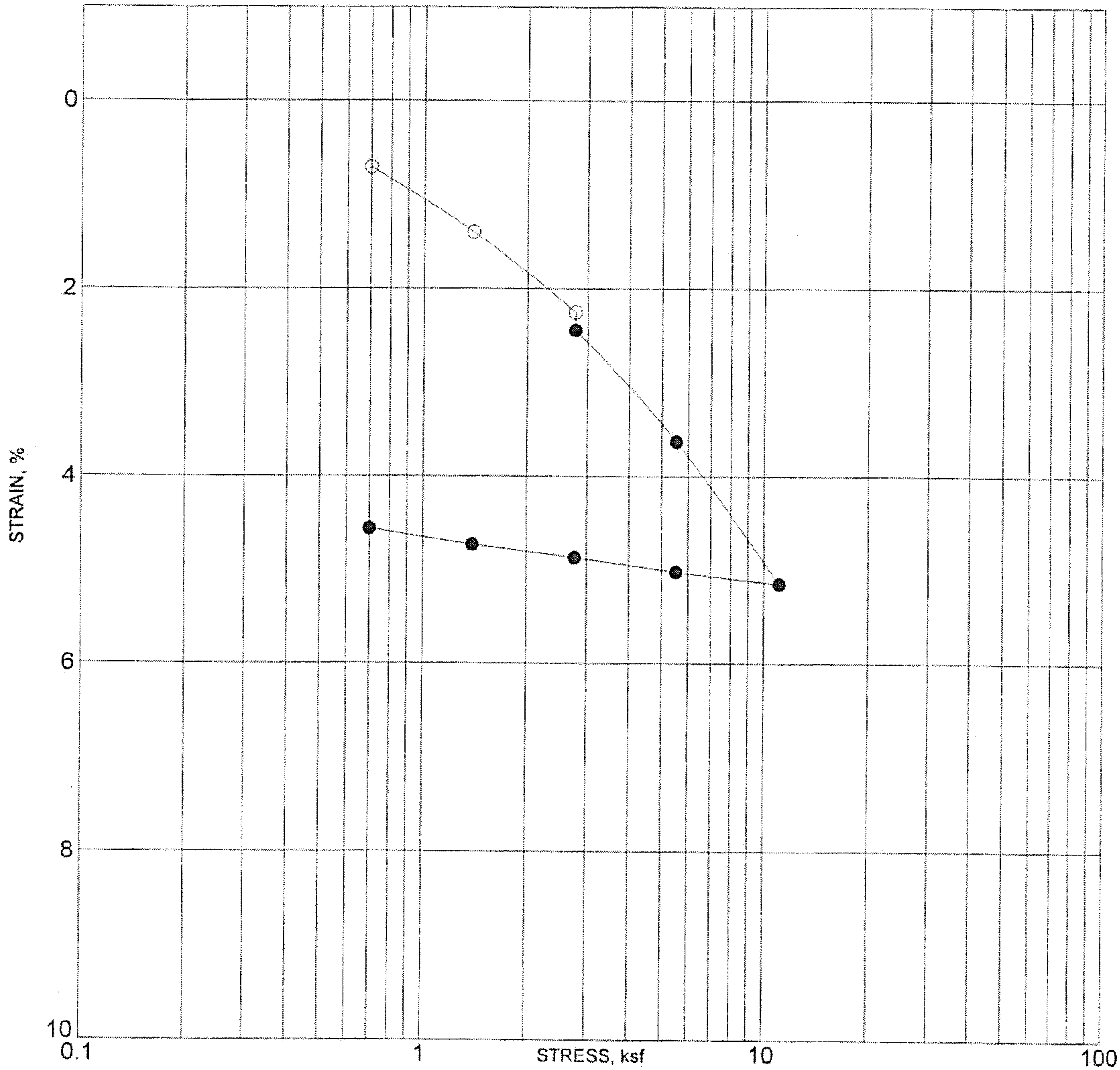
	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	PERCENT SATURATION	VOID RATIO
INITIAL	12	101		
FINAL	14	119		

NOTE: SOLID CIRCLES INDICATE READINGS AFTER ADDITION OF WATER

CONSOLIDATION TEST RESULTS

Converse Consultants

Project Name	Project No.	Drawing No.
HERALD EXAMINER BLDGS & 12th STREET BUILDING LOS ANGELES, CALIFORNIA FOR: URBAN PARTNERS	04-31-240-02	B-10



BORING NO. :	BH-6	DEPTH (ft) :	15
DESCRIPTION :	SAND WITH SILT WITH GRAVEL (SP-SM)		

	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	PERCENT SATURATION	VOID RATIO
INITIAL	6	113		
FINAL	12	125		

NOTE: SOLID CIRCLES INDICATE READINGS AFTER ADDITION OF WATER

CONSOLIDATION TEST RESULTS

Converse Consultants

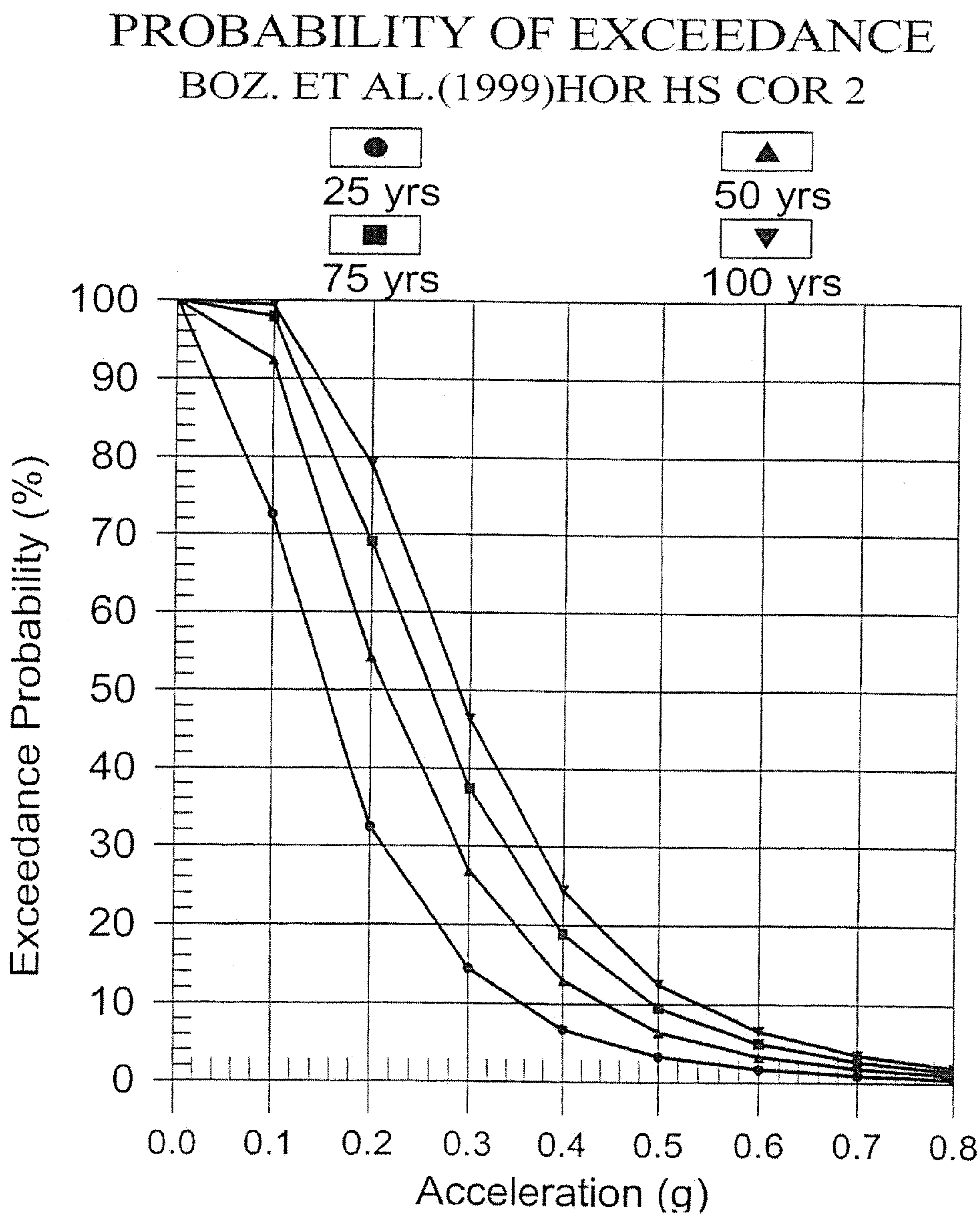
Project Name
HERALD EXAMINER BLDGS &
12th STREET BUILDING
LOS ANGELES, CALIFORNIA
FOR: URBAN PARTNERS

Project No.
04-31-240-02

Drawing No.
B-11

APPENDIX C

SEISMIC RESPONSE DATA

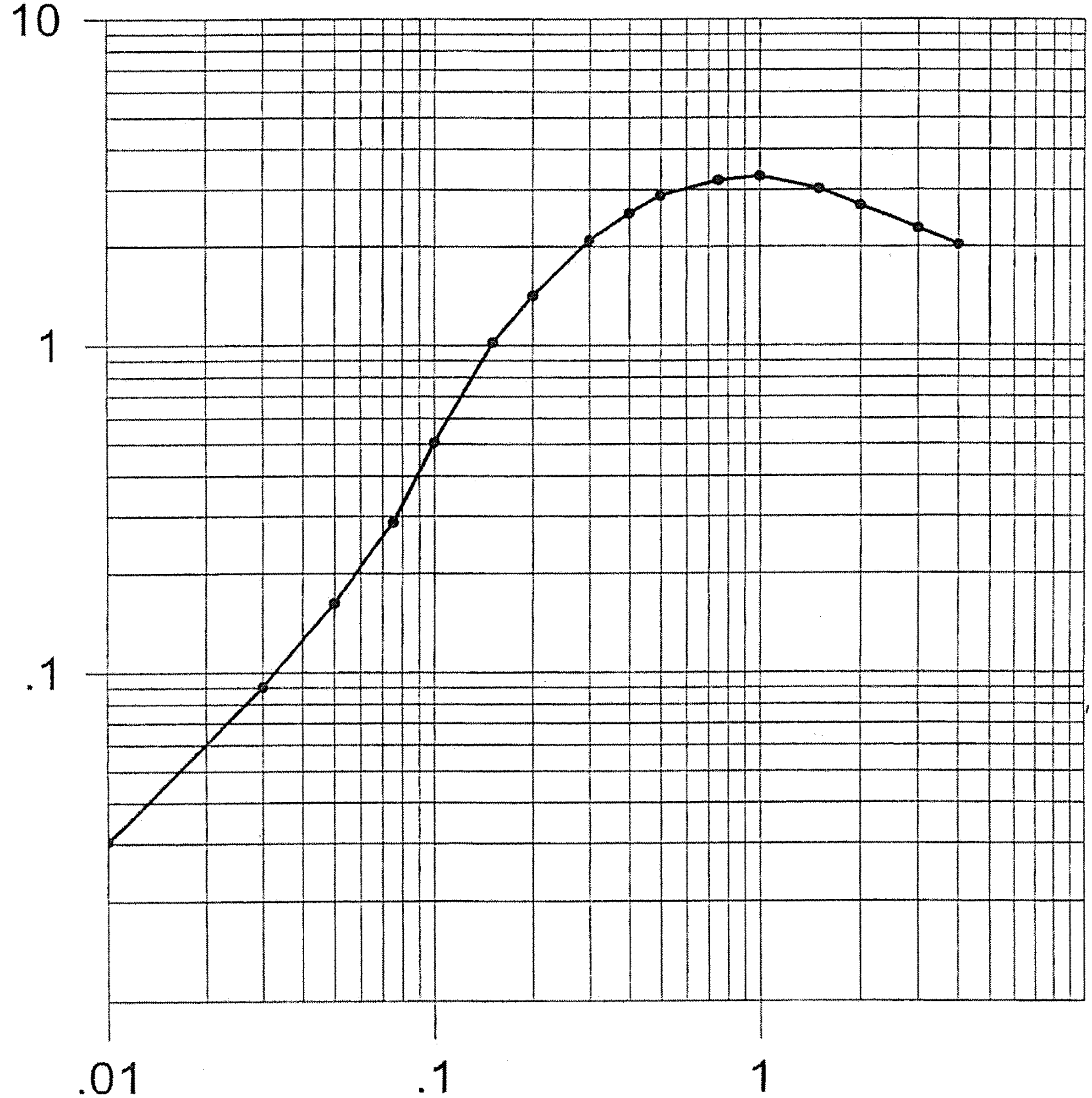


PROBABILITY OF EXCEEDENCE VS ACCELERATION

Converse Consultants	HERALD EXAMINER BLDGS & 12th STREET BUILDING LOS ANGELES, CALIFORNIA FOR: URBAN PARTNERS	Project No. 04-31-240-02	Drawing No. C-1

VELOCITY vs. PERIOD

475-Year Return Period



MAXIMUM PROBABLE EVENT
5% OF CRITICAL DAMPING

UNIFORM PROBABILITY EARTHQUAKE SPECTRA

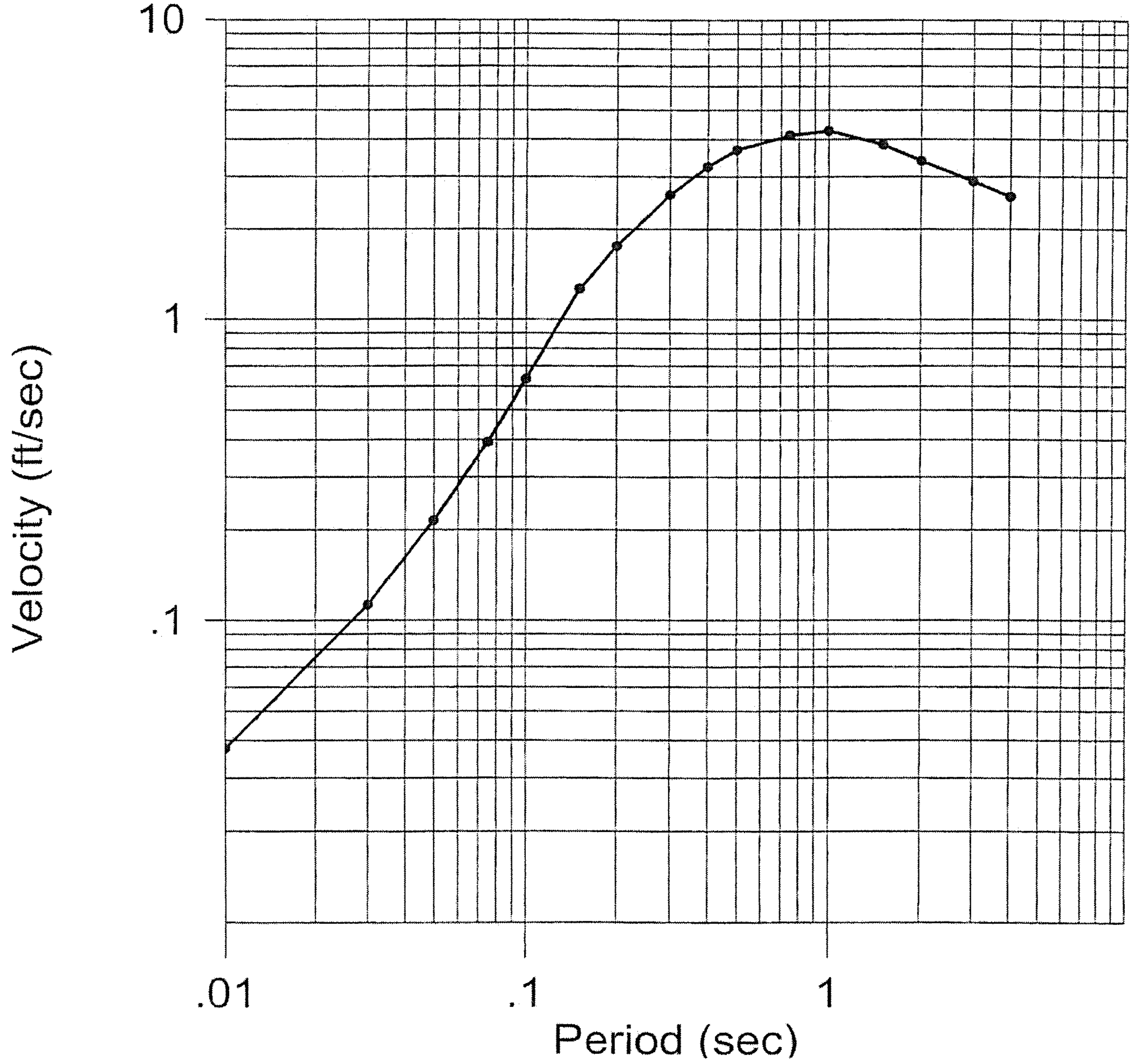
Converse Consultants

HERALD EXAMINER BLDGS &
12th STREET BUILDING
LOS ANGELES, CALIFORNIA
FOR: URBAN PARTNERS

Project No.	Drawing No.
04-31-240-02	C-2

VELOCITY vs. PERIOD

1000-Year Return Period



UPPER BOUND EVENT
5% OF CRITICAL DAMPING

UNIFORM PROBABILITY EARTHQUAKE SPECTRA

Converse Consultants	HERALD EXAMINER BLDGS & 12th STREET BUILDING LOS ANGELES, CALIFORNIA FOR: URBAN PARTNERS	Project No. 04-31-240-02	Drawing No. C-3

TABLE C-1
HERALD EXAMINER DEVELOPMENTS
SEIMIC RESPONSE SPECTRA
PSEUDO VELOCITY & ACCELERATION
FOR VARIOUS DAMPING RATIOS

10% PROBABILITY OF EXCEEDANCE IN 50 YEARS

PERIOD	PSEUDO VELOCITY (FT./SEC.)				PSEUDO ACCELERATION (g)			
(sec)	2% Damping	5% Damping	7% Damping	10% Damping	2% Damping	5% Damping	7% Damping	10% Damping
0.01	0.037	0.030	0.027	0.025	0.717	0.584	0.521	0.483
0.03	1.000	0.089	0.082	0.074	0.711	0.579	0.516	0.479
0.05	0.195	0.159	0.146	0.132	0.763	0.622	0.554	0.515
0.08	0.347	0.283	0.259	0.234	0.904	0.736	0.657	0.610
0.10.	0.614	0.500	0.459	0.414	1.200	0.977	0.872	0.809
0.15	1.239	1.009	0.925	0.835	1.613	1.314	1.172	1.088
0.20	1.713	1.395	1.279	1.155	1.672	1.362	1.215	1.128
0.30	2.538	2.066	1.895	1.711	1.652	1.345	1.200	1.114
0.40	3.073	2.502	2.294	2.072	1.500	1.222	1.090	1.011
0.50	3.490	2.842	2.606	2.353	1.363	1.110	0.990	0.919
0.75	3.891	3.168	2.905	2.623	1.013	0.825	0.736	0.683
1.00	4.017	3.271	2.999	2.708	0.784	0.639	0.570	0.529
1.50	3.675	2.993	2.744	2.478	0.478	0.3896	0.348	0.323
2.00	3.275	2.667	2.445	2.208	0.320	0.260	0.232	0.216
3.00	2.783	2.2665	2.078	1.877	0.181	0.148	0.132	0.122
4.00	2.476	2.016	1.849	1.669	0.121	0.098	0.088	0.081

TABLE C-2
HERALD EXAMINER DEVELOPMENTS
SEIMIC RESPONSE SPECTRA
PSEUDO VELOCITY & ACCELERATION
FOR VARIOUS DAMPING RATIOS

10% PROBABILITY OF EXCEEDANCE IN 100 YEARS

PERIOD	PSEUDO VELOCITY (ft./sec.)				PSEUDO ACCELERATION (g)			
(sec)	2% Damping	5% Damping	7% Damping	10% Damping	2% Damping	5% Damping	7% Damping	10% Damping
0.01	0.045	0.037	0.034	0.031	0.935	0.723	0.645	0.562
0.03	1.000	0.111	0.102	0.092	0.935	0.722	0.644	0.562
0.05	0.260	0.212	0.194	0.175	1.069	0.826	0.737	0.643
0.08	0.473	0.385	0.353	0.319	1.297	1.003	0.894	0.780
0.10.	0.768	0.625	0.573	0.518	1.580	1.221	1.089	0.950
0.15	1.511	1.230	1.128	1.019	2.106	1.628	1.452	1.266
0.20	2.131	1.735	1.591	1.437	2.192	1.694	1.511	1.318
0.30	3.159	2.572	2.359	2.130	2.167	1.675	1.494	1.303
0.40	3.916	3.189	2.924	2.640	2.015	1.557	1.389	1.211
0.50	4.458	3.630	3.329	3.006	1.835	1.418	1.265	1.103
0.75	4.986	4.061	3.723	3.362	1.368	1.057	0.943	0.823
1.00	5.152	4.196	3.847	3.474	1.060	0.819	0.731	0.637
1.50	4.661	3.796	3.481	3.143	0.639	0.494	0.441	0.384
2.00	4.129	3.363	3.084	2.784	0.425	0.328	0.293	0.255
3.00	3.528	2.873	2.635	2.379	0.242	0.187	0.167	0.145
4.00	3.141	2.558	2.345	2.118	0.162	0.125	0.111	0.097

APPENDIX D

RECOMMENDED EARTHWORK SPECIFICATIONS

APPENDIX D

RECOMMENDED EARTHWORK SPECIFICATIONS

D1.1 Scope of Work

The work includes all labor, supplies and construction equipment required to construct the building pads in a good, workmanlike manner, as shown on the drawings and herein specified. The major items of work covered in this section include the following:

- Site Inspection
- Authority of Geotechnical Engineer
- Site Clearing
- Excavations
- Preparation of Fill Areas
- Placement and Compaction of Fills
- Observation and Testing

D1.2 Site Inspection

1. The Contractor shall carefully examine the site and make all inspections necessary, in order to determine the full extent of the work required to make the completed work conform to the drawings and specifications. The Contractor shall satisfy himself as to the nature and location of the work, ground surface and the characteristics of equipment and facilities needed prior to and during prosecution of the work. The Contractor shall satisfy himself as to the character, quality, and quantity of surface and subsurface materials or obstacles to be encountered. Any inaccuracies or discrepancies between the actual field conditions and the drawings, or between the drawings and specifications must be brought to the Owner's attention in order to clarify the exact nature of the work to be performed.
2. The *Geotechnical Investigation Report* by Converse Consultants may be used as a reference to the surface and subsurface conditions on this project. The information presented in this above referenced report is intended for use in design and is subject to confirmation of the conditions encountered during construction. The exploration logs and related information depict subsurface conditions only at the particular time and location designated on the boring logs. Subsurface conditions at other locations may differ from conditions encountered at the exploration locations. In addition, the passage of time may result in a change in subsurface conditions at the exploration locations. Any review of this information shall not relieve the Contractor from performing such independent investigation and evaluation to satisfy himself as to the nature of the surface and subsurface conditions to be encountered and the procedures to be used in performing his work.

D1.3 Authority of the Geotechnical Engineer

1. The Geotechnical Engineer will observe the placement of compacted fill and will take sufficient tests to evaluate the uniformity and degree of compaction of filled ground.
2. As the Owner's representative, the Geotechnical Engineer will (a) have the authority to cause the removal and replacement of loose, soft, disturbed and other unsatisfactory soils and uncontrolled fills; (b) have the authority to approve the preparation of native ground to receive fill material; and (c) have the authority to approve or reject soils proposed for use in building areas.
3. The Civil Engineer and/or Owner will decide all questions regarding (a) the interpretation of the drawings and specifications, (b) the acceptable fulfillment of the contract on the part of the contractor and (c) the matters of compensation.

D1.4 Site Clearing

1. Clearing and grubbing shall consist of the removal from building areas to be graded: all existing pavement, utilities, and vegetation.
2. Organic and inorganic materials resulting from the clearing and grubbing operations shall be hauled away from the areas to be graded.

D1.5 Excavations

1. Based on observations made during our field explorations, the surficial soils can be excavated with conventional earthwork equipment.

D1.6 Preparation of Fill Areas

1. All organic material, organic soils, incompetent alluvium, undocumented fill soils and debris should be removed from the proposed building areas.
2. After the required removals have been made, the exposed native earth materials shall be excavated to provide a zone of structural fill for the support of footings, slabs-on-grade, exterior flatwork. All loose, soft or disturbed earth materials should be removed from the bottom of excavations before placing structural fill. As a minimum, the on site soils in the building area and to five feet beyond the building limits and appendages shall be removed and recompacted.
3. The subgrade in all areas to receive fill shall be scarified to a minimum depth of six inches, moisture-conditioned to within three percent of the optimum moisture, and then compacted to at least 90 percent of maximum dry density as determined by ASTM D1557 test method (95 percent relative compaction in accordance with City of Los Angeles criteria for sand). Scarification may be terminated on moderately hard to hard, cemented earth materials with the approval of the Geotechnical Engineer.

4. Compacted fill may be placed on native soils that have been properly scarified and recompacted as discussed above.
5. All areas to receive compacted fill will be observed and approved by the Geotechnical Engineer before the placement of fill.

D1.7 Placement and Compaction of Fills

1. Compacted fill placed for the support of footings, slabs-on-grade, exterior concrete flatwork, and driveways will be considered structural fill. Structural fill may consist of approved onsite soils or imported fill that meets the criteria indicated below.
2. Fill consisting of selected on-site earth materials or imported soils approved by the Geotechnical Engineer shall be placed in layers on approved earth materials. Soils used as compacted structural fill shall have the following characteristics:
   a. All fill soil particles shall not exceed three inches in nominal size, and shall be free of organic matter and miscellaneous inorganic debris and inert rubble.
   b. All fill materials shall have an Expansion Index (EI) less than 40.
   c. Fill soils should be compacted to at least 90 percent of maximum dry density (ASTM Standard D1557) within three percent of optimum (95 percent relative compaction in accordance with City of Los Angeles criteria if sand is used for backfill)..
   d. Imported fill materials shall have less than 0.1 percent sulfate salts, if possible. If laboratory test results indicate import fill materials contain more than 0.1 percent sulfate salts, a concrete mix should be designed to resist the sulfate levels indicated by the laboratory test results.
3. Fill soils shall be evenly spread in maximum eight-inch lifts, watered or dried as necessary, mixed and compacted to at least the density specified below. The fill shall be placed and compacted on a horizontal plane, unless otherwise approved by the Geotechnical Engineer.
4. Representative samples of materials being used as compacted fill will be analyzed in the laboratory by the Geotechnical Engineer to obtain information on their physical properties. Maximum laboratory density of each soil type used in the compacted fill will be determined by the ASTM D1557 compaction method.
5. Fill materials shall not be placed, spread or compacted during unfavorable weather conditions. When site grading is interrupted by heavy rain, filling operations shall not resume until the Geotechnical Engineer approves the moisture and density conditions of the previously placed fill.
6. It shall be the Grading Contractor's obligation to take all measures deemed necessary during grading to provide erosion control devices in order to protect site areas and adjacent properties from storm damage and flood hazard originating on this

project. It shall be the contractor's responsibility to maintain site in their as-graded form until all slopes are in satisfactory compliance with job specifications, all berms have been properly constructed, and all associated drainage devices meet the requirements of the Civil Engineer.

D1.8 Observation and Testing

1. During the progress of grading, the Geotechnical Engineer will provide observation of the fill placement operations.
2. Field density tests will be made during grading to provide an opinion on the degree of compaction being obtained by the contractor. Where compaction of less than specified herein is indicated, additional compactive effort with adjustment of the moisture content shall be made as necessary until the required degree of compaction is obtained.
3. A sufficient number of field density tests will be performed to provide an opinion to the degree of compaction achieved. In general, density tests will be performed on each one-foot lift of fill, but not less than one for each 500 cubic yards of fill placed.

APPENDIX E

GUIDE SPECIFICATIONS FOR INSTALLATION AND ACCEPTANCE OF TIE-BACK ANCHORS

APPENDIX E

GUIDE SPECIFICATIONS FOR INSTALLATION AND ACCEPTANCE OF TIE-BACK ANCHORS (Based upon the City of Los Angeles Requirements)

Installation

1. Tie-back installation shall be performed during continuous observation by Converse Consultants (Converse) to confirm that the recommended earth materials are penetrated, that the dimensions of the installed anchors are at least as large as that indicated on the shoring plan, and that anchor installation has been performed as specified. The Contractor shall provide access and necessary facilities, including lighting, at their expense, to accommodate observations.

2. All anchors shall be installed at the specified locations, to the required depth, and at the specified angle of inclination. A tolerance of 3° will be permitted on the required angle of inclination.

3. After drilling, all holes shall be cleaned of loose soils. Concrete shall be placed by pumping from the tip of the anchor to the active wedge. Concrete placement shall begin within four hours after completion of drilling. The portion of the anchor within the active wedge shall be backfilled with sand-cement slurry after the anchor has been tested as specified below. However, if excessive caving occurs, the active wedge portion of the excavation can be filled with slurry as the casing is pulled. A zone of soft soil shall (in this case) be placed between the anchor and slurry (before testing).

4. If a hollow-stem auger or casing is used due to caving, concrete shall be placed by pumping as the auger or casing is withdrawn while always maintaining a head of concrete inside the casing or auger.

5. Concrete placement shall be continuous without interruption, and at such a rate that fresh concrete will not be deposited on concrete hardened sufficiently to form seams and planes of weakness.

6. Any anchor deemed by the Owner or Converse to be defective shall be replaced with substitute anchor(s) as directed by the Owner or Shoring Designer. The cost of installation of such substitute anchors shall be borne by the Contractor. Costs associated with analysis and design of substitute anchor(s) shall also be borne by the Contractor.

Acceptance Criteria

1. Actual capacities of anchors shall be determined by testing designated Test Anchors and all Production Anchors. Testing of anchors will enable evaluation of the applicability of design values for the chosen method of tieback construction.

2. All anchors shall be check-tested to at least 150% of the designed working load in accordance with the following procedures:

   a. Test load anchors to 150% of the design working load, incrementally noting loads, tendon extensions and soldier pile deflections. Hold load for 15 minutes. After pulling slack, the anchor movement shall not exceed 0.10 inch during the 15-minute load period. If the deflection is acceptable, reduce load to 100% of the design load and lock off.

   b. Where an anchor shows excessive movement for additional 15-minute intervals, the load should be reduced until the rate of movement is 0.10 inch per 15 minutes or less. The load at which acceptable movement is attained should be divided by 1.5 to establish the working load of the anchor and additional measures taken to carry the required load.

3. Converse shall designate at least 5% of all proposed anchors as 200% Test Anchors. Additional anchor steel reinforcement will likely be required for the 200 percent load test anchors, and should be appropriately considered prior to anchor installation. Half of the 200% Test Anchors shall be tested for 30 minutes. The remaining Test Anchors shall be tested for a 24-hour period. Test anchors shall be tested in the following manner:

   a. For the 30-minute test anchors, incrementally load the anchors to 200% of the design-working load noting loads, tendon/bar extensions and soldier pile deflections. Hold load for 30 minutes. Anchor movement shall not exceed 0.3 inch during the 30-minute load period. If the deflection is acceptable, reduce load to design load and lock off; otherwise, reduce the test load by 50% and repeat this step.

   b. For 24-hour test anchors, incrementally load to 200% and hold for 24 hours; check load after 24 hours. If a pre-stress loss of 8% or less is recorded, restore load to 100% of working load and lock off. If loss of pre-stress exceeds 8%, restore load to 150% of working load and hold for an additional 24 hours. Check load after second 24-hour hold and, if loss of pre-stress is less than 8%; restore to 100% and lock off as before.

Where an anchor shows a continuous loss of pre-stress during a subsequent 24-hour period, the test load shall continue to be reduced by 50% until loss of pre-stress is negligible. Then the test load shall be divided by 1.5 to establish the working load of that anchor and additional measures taken to carry the required shoring load.

4. Any anchor pulled more than 12 inches shall not be used.

5. Immediately after testing, the active wedge portion of tieback excavations should be filled with slurry.