

APPROVED

JAN 16 2020

BOARD OF RECREATION AND PARK COMMISSIONERS

BOARD REPORT

NO. 20-010

DATE January 16, 2020

C.D. 7

BOARD OF RECREATION AND PARK COMMISSIONERS

SUBJECT: RITCHIE VALENS RECREATION CENTER SPORTS COURT LIGHTING (W.O. #E170510) PROJECT (aka PROP K SPORTS LIGHTING IMPROVEMENT: RITCHIE VALENS RECREATION CENTER) – APPROVAL OF FINAL PLANS; CATEGORICAL EXEMPTION FROM THE PROVISIONS OF THE CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA) PURSUANT TO ARTICLE III, SECTION 1 CLASS 1(1) [MINOR EXTERIOR ALTERATION OF EXISTING PUBLIC STRUCTURES INVOLVING MINOR CONSTRUCTION], CLASS 1(4) [REHABILITATION OF DETERIORATED STRUCTURES TO MEET CURRENT STANDARDS OF PUBLIC SAFETY] AND CLASS 1(12) [OUTDOOR LIGHTING FOR SECURITY AND OPERATION] OF CITY CEQA GUIDELINES AND ARTICLE 19, SECTIONS 15301(a) AND 15301(d) OF CALIFORNIA CEQA GUIDELINES.

AP Diaz \_\_\_\_\_ S. Piña-Cortez \_\_\_\_\_
H. Fujita \_\_\_\_\_ \*C. Santo Domingo DT
V. Israel \_\_\_\_\_ N. Williams \_\_\_\_\_

M. Slue

General Manager

Approved X Disapproved Withdrawn

RECOMMENDATIONS

- 1. Approve the final plans, substantially in the form on file in the Board of Recreation and Park Commissioners (Board) Office and as attached to this Report, for the proposed Ritchie Valens Recreation Center Sports Court Lighting (W.O. #E170510) Project (aka Prop K Sports Lighting Improvement: Ritchie Valens Recreation Center) (Project);
2. Find that the proposed Project is categorically exempt from the provisions of the California Environmental Quality Act (CEQA) pursuant to Article III, Section 1, Class 1(1) [exterior alterations where there be no or negligible expansion of use], 1(4) [rehabilitation of deteriorated structures] and 1(12) [outdoor lighting for security and operation] of City CEQA Guidelines and Article 19, Sections 15301(a) and 15301(d) of California CEQA Guidelines, and direct the Department of Recreation and Parks (RAP) staff to file a Notice of Exemption (NOE) with the Los Angeles County Clerk's Office.
3. Authorize RAP's Chief Accounting Employee or designee to prepare a check to the Los Angeles County Clerk in the amount of Seventy-Five Dollars (\$75.00) for the purpose of filing a NOE;

BOARD REPORT

PG. 2 NO. 20-010

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

SUMMARY

Ritchie Valens Recreation Center is located at 10736 Laurel Canyon Blvd., Pacoima, CA 91331 in Council District 7. This property includes a picnic area, tennis and basketball courts, children's play area, ball diamonds, and a gymnasium. Approximately 3,500 City residents live within a 1/2 mile walking distance of the recreation center.

The proposed Project is a Proposition K Competitive grant (9<sup>th</sup> Cycle) funded project. The scope of work for the proposed Project consists of replacing existing lighting at three (3) basketball courts and two (2) tennis courts with new, Light Emitting Diode (LED) light fixtures. This will provide improved quality of lighting, with reduced spillover of light onto adjacent properties and/or other areas of the recreation center. The new LED light fixtures will also reduce operational costs, by reducing energy consumption relative to current electrical usage. After review by RAP and Bureau of Engineering (BOE) staff, it was determined that the work can be completed by RAP pre-qualified contractors and BOE will provide construction management services.

RAP's Planning, Construction and Maintenance Division prepared the plans and specifications, and obtained all the necessary approvals for the proposed Project. As required by Proposition K, three (3) Local Volunteer Neighborhood Oversight Committee (LVNOC) meetings were conducted. The first LVNOC meeting was on June 14, 2018. The second and third LVNOC meetings were concluded on the same date of July 24, 2018. The community, the LVNOC and Office of Council District 7 are in full support of the proposed Project.

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

<u>FUNDING SOURCE</u>	<u>FUND/DEPT./ACCT. NO.</u>
Proposition K	43K/10/10PPAD

TREES AND SHADE

No trees will be removed and any existing trees near the proposed location(s) of new light standards to be installed as a part of this proposed Project will be protected during the construction. Since this proposed Project focuses on improving lighting for evening recreation activities, additional trees and shade structures are not part of the scope. Furthermore, the approved Proposition K funds for this proposed Project do not include funds for the installation of shade structures and trees.

## BOARD REPORT

PG. 3 NO. 20-010

### ENVIRONMENTAL IMPACT

The proposed Project consists of the installation of new lighting for security and operations, with negligible or no expansion of use, to rehabilitate damaged structure to meet current standards of public safety. As such staff recommends that the Board of Recreation and Park Commissioners (Board) determines that it is exempt from the provisions of CEQA pursuant to Article III, Section 1, Class 1(1), Class 1(4) and Class 1(12) of City CEQA Guidelines and Article 19, Sections 15301(a) and 15301(d) of California CEQA Guidelines. An NOE will be filed with the Los Angeles County Clerk upon the Board's approval.

### FISCAL IMPACT

There is no immediate fiscal impact to RAP's General Fund. The proposed Project should reduce long term maintenance and operational costs, as the Project will replace existing, higher energy use sports court lighting systems with new, energy efficient LED lighting systems.

### STRATEGIC PLAN INITIATIVES AND GOALS

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

**Goal No. 5:** Ensure an environmentally sustainable park system

**Outcome No. 1:** Decreased energy consumption and achieve a smaller carbon footprint

**Result:** The installation of the proposed LED lighting systems will decrease energy consumption resulting in a more sustainable park system.

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

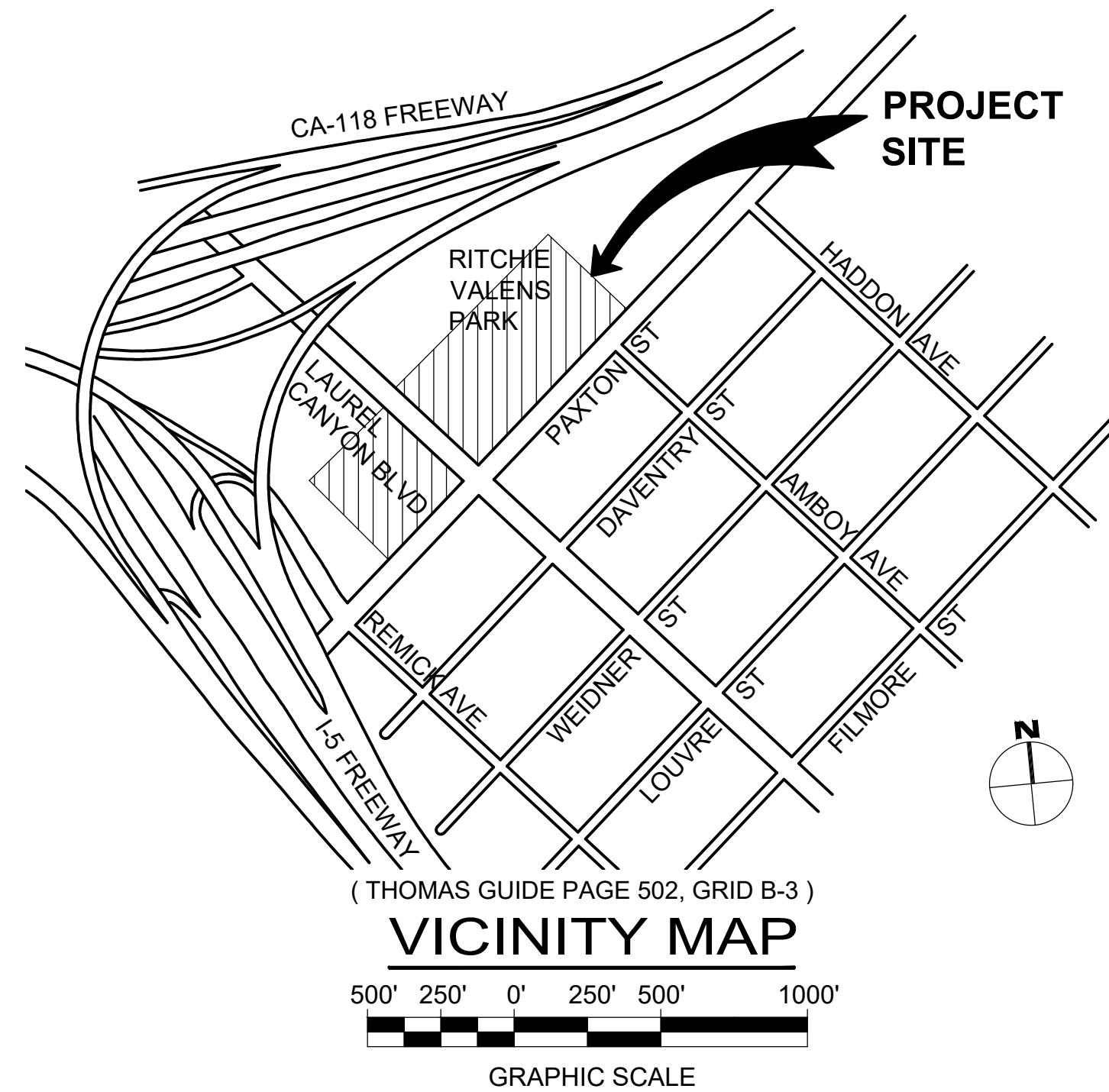
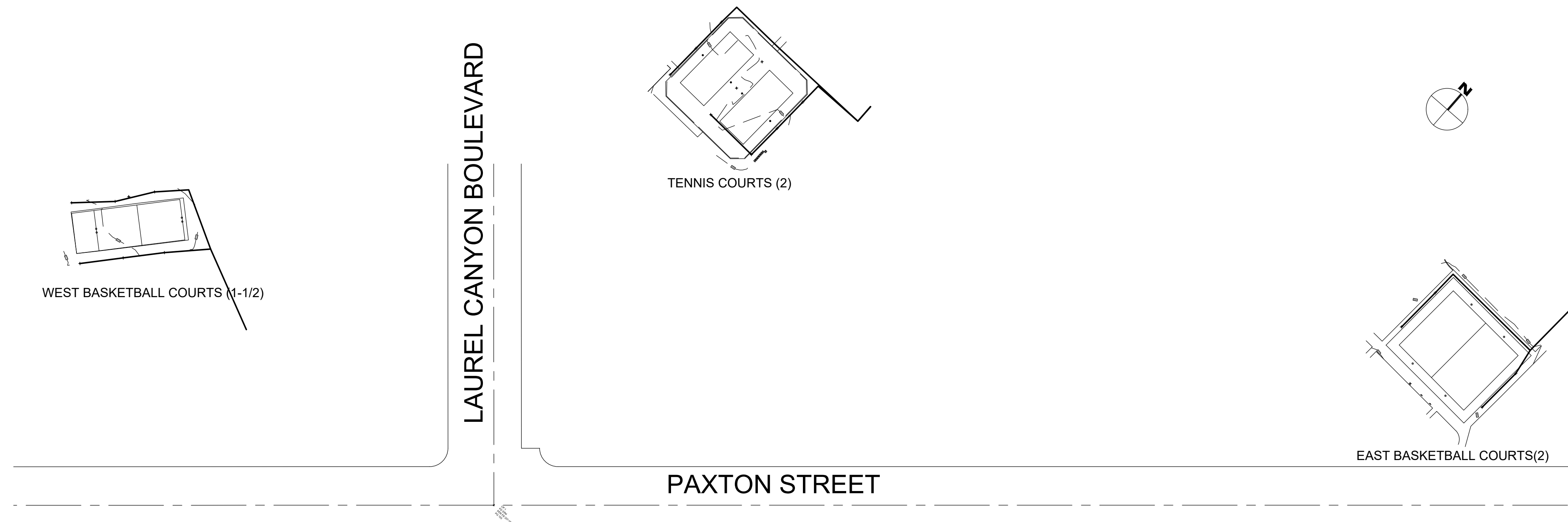
### LIST OF ATTACHMENT(S)

- 1) Final Plans for Ritchie Valens Recreation Center Sports Court Lighting Project (aka Prop K Sports Lighting Improvements: Ritchie Valens Recreation Center)
- 2) Geotechnical Report for Ritchie Valens Recreation Center Sports Court Lighting Project.

Attachment No. 1

CITY OF LOS ANGELES  
DEPARTMENT OF PUBLIC WORKS  
BUREAU OF ENGINEERING

**PROP K SPORTS  
LIGHTING IMPROVEMENT:  
RITCHIE VALENS RECREATION CENTER**



**DEPARTMENT OF RECREATION AND PARKS**

**MICHAEL SHULL**  
GENERAL MANAGER  
221 N. FIGUEROA STREET, 4TH FLOOR  
LOS ANGELES, CA 90012

**PROJECT MANAGEMENT**

**DEPARTMENT OF PUBLIC WORKS  
BUREAU OF ENGINEERING  
ARCHITECTURAL DIVISION**  
NEIL DRUCKER  
INTERIM DIVISION HEAD  
**ERICK CHANG, RICHARD CAMPBELL**  
PROJECT MANAGER  
1149 SOUTH BROADWAY, 8TH FLOOR  
LOS ANGELES, CA 90015  
(213) 847- 4771  
(213) 847- 1926 (FAX)  
ERICK.CHANG@LACITY.ORG  
RICHARD.CAMPBELL@LACITY.ORG

**PROJECT TEAM**

**SURVEY:** DEPARTMENT OF PUBLIC WORKS  
BUREAU OF ENGINEERING  
SURVEY DIVISION  
ROBERT NIELSON  
CHIEF SURVEYOR

**GEOTECHNICAL:** DEPARTMENT OF PUBLIC WORKS  
BUREAU OF ENGINEERING  
GEOTECHNICAL ENGINEERING  
GROUP  
PATRICK J. SCHMIDT  
GROUP MANAGER  
1149 SOUTH BROADWAY, SUITE 120

**ELECTRICAL AND  
STRUCTURAL  
DESIGN:** **PSOMAS**  
ARIEF NAFTALI, PE, TE  
DOUGLAS FREDERICKS, PE  
PROJECT MANAGER  
555 SOUTH FLOWER STREET, SUITE 4300

**CONSTRUCTION MANAGEMENT**

**DEPARTMENT OF PUBLIC WORKS  
BUREAU OF ENGINEERING  
CONSTRUCTION MANAGEMENT  
DIVISION**  
**JOSE FUENTES**  
GROUP MANAGER  
1149 SOUTH BROADWAY, 8TH FLOOR  
LOS ANGELES, CA 90015

PLANS PREPARED BY:  
**PSOMAS**  
555 South Flower Street, Suite 4300  
Los Angeles, CA 90071  
(213) 223-1400 Fax (213) 223-1444



**BUREAU OF ENGINEERING**  
PROJECT: PROP K SPORTS LIGHTING IMPROVEMENT:  
RITCHIE VALENS RECREATION CENTER  
ADDRESS: 10731 LAUREL CANYON BLVD,  
PACOIMA, CA 91331

NO.	REVISIONS	DATE	BY	CIP NO.	INDEX NO.

CITY ENGINEER	DATE
DEPUTY CITY ENGINEER/PROGRAM MANAGER	DATE
CITY ENGINEER	DATE

WORK ORDER NO.  
**E170510D**

SHEET NO.  
**TTL-1**  
SHEET 1 OF 6 SHEETS

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

BUREAU OF ENGINEERING  
DEPARTMENT OF PUBLIC WORKS  
CITY OF LOS ANGELES  
VERTICAL CONTROL: BM # 11-04189 AND 11-03448 NAVD88 2000 ADJ  
HORIZONTAL CONTROL: U.S.G.S. DATUM EFFECTIVE JULY 1, 1925  
THIS PLAN WAS ELECTRONICALLY SIGNED AND STAMPED.

CITY OF LOS ANGELES  
DEPARTMENT OF PUBLIC WORKS  
Bureau of Engineering  
GEOTECHNICAL ENGINEERING DIVISION

December 7, 2017

**RITCHIE VALENS PARK - SPORTS LIGHTING PROJECT**  
**10731 LAUREL CANYON BOULEVARD, LOS ANGELES, CA 91331**  
**W.O. E170510D** **GED FILE NO. 17-169**

---

## **1.0 INTRODUCTION**

The Los Angeles Department of Public Works, Bureau of Engineering, Geotechnical Engineering Division (GED) has prepared this report to provide design and construction recommendations for the project. The project site, as shown on Figure 1 – Vicinity Map, is located at the intersection of Laurel Canyon Boulevard and Paxton Street in the Pacoima City area of Los Angeles.

## **2.0 PROJECT DESCRIPTION**

The project site, including the existing light pole locations, is presented on Figure 2 – Site Location Map. The project consists of replacing the existing tennis court lights and basketball court lights with new ones. We understand the proposed LED light poles for both the tennis and basketball courts, including the fixtures may be up to approximately 50 feet high.

## **3.0 GEOTECHNICAL INVESTIGATION**

Our geotechnical investigation consisted of field exploration and laboratory testing. The field exploration and laboratory testing was completed by Geotechnical Professionals, Inc. (GPI). A copy of GPI's data report is included in Appendix A of this report. The findings and recommendations in this report are based on the information presented in GPI's report. We've reviewed their report, concur with the information contained in it, and accept responsibility for the use of its contents.

### **3.1 SUBSURFACE CONDITIONS**

GPI drilled four hollow-stem auger (HSA) borings, each to a depth of approximately 21½ feet below ground surface (bgs). The boring locations are presented on the Site Plan, Figure 2, in GPI's data report (Appendix A).

Uncertified fill was encountered in all four borings. The fill consists of silty to clayey sand and the fill thickness ranges from approximately 2½ to 3 feet. The native soil mostly consists of poorly graded sand with silt to silty sand, and based on the field Standard Penetration Test blowcounts, this material is generally medium dense to dense.

Groundwater was not encountered to the maximum explored depth of approximately 21½ feet bgs. Groundwater levels are expected to fluctuate with seasonal rainfalls, dry weather (i.e. drought conditions), and pumping activities in the vicinity of the site. Nevertheless, groundwater is not expected to affect construction of the proposed light pole foundations.

### **3.2 LABORATORY TEST RESULTS**

The laboratory testing program consisted of in-situ moisture content and dry density, fines content (percent passing the No. 200 sieve), and direct shear.

Three direct shear tests were performed on relatively undisturbed samples of the native sandy soil from RV-1 and RV-2. The sample depths ranged from approximately 5 to 10 feet. The test results indicate the ultimate friction angle and cohesion value of the native soil ranges from 33 to 36 degrees and 180 to 342 pounds per square foot (psf), respectively.

### **4.0 RECOMMENDATIONS**

Based on the results of the geotechnical investigation, the proposed project is considered feasible from a geotechnical standpoint provided the recommendations presented in this report are incorporated into the design and construction. If changes in the design are made, or if changed conditions are encountered during construction, the GED shall be notified. Supplemental recommendations may be required.

#### **4.1 SITE PREPARATION**

Site preparation may initially involve the demolition of the existing lighting fixtures, including their foundations. Following demolition, the construction area should be cleared of any vegetation and stripped of miscellaneous debris and other deleterious material. Organic matter and other material that may interfere with construction should be removed.

#### **4.2 NEW LIGHT POLE FOUNDATIONS**

We recommend new light poles be supported on cast-in-drilled-hole (CIDH) piles. Piles shall be spaced a minimum distance of 3 pile diameters on center, and the minimum pile diameter shall be 30 inches.

##### **4.2.1 2017 LABC Seismic Design Parameters**

Seismic design parameters for the project are provided in accordance with the 2017 Los Angeles Building Code (LABC). Latitude 34.26483°N and Longitude 118.43863°W coordinates were used for the site location.

**Seismic Design Parameters**

Parameter	Value	Reference
Site Class	D	ASCE 7-10 Table 20.3-1
$S_s$	2.381	ASCE 7-10 Figure 22-1
$S_1$	0.899	ASCE 7-10 Figure 22-2
$S_{MS}$	2.381	ASCE 7-10 Equation 11.4-1
$S_{M1}$	1.348	ASCE 7-10 Equation 11.4-2
$S_{DS}$	1.587	ASCE 7-10 Equation 11.4-3
$S_{D1}$	0.899	ASCE 7-10 Equation 11.4-4
$T_O$ (seconds)	0.113	ASCE 7-10 Figure 11.4-1
$T_S$ (seconds)	0.566	ASCE 7-10 Figure 11.4-1

**4.2.2 Axial Capacity in Compression**

The minimum pile embedment depth shall be 9 feet below the lowest adjacent grade. The actual depths may be deeper and will likely depend on the lateral load analysis, which shall be performed by the structural engineer. Axial compression capacities (i.e. loads) are presented on Figure 3 for a 30-inch, 36-inch, and 42-inch diameter CIDH piles. The axial compression capacities presented in Figure 3 assume the piles develop their capacity solely from skin friction or side resistance. The total settlement is not expected to exceed ½-inch provided the piles are properly constructed (see Section 4.2.5).

**4.2.3 Axial Capacity in Tension**

The allowable axial tensile capacity may be assumed to be ½ the axial capacity in compression for the 30-inch, 36-inch, and 42-inch diameter CIDH piles (Figure 3). The weight of the concrete shaft may be added to the tensile capacity.

**4.2.4 Lateral Load Behavior**

The lateral load behavior of the CIDH piles was evaluated using the LPILE (Ensoft, 2016) software program. The lateral load behavior was evaluated for a free head deflection of ½-inch. Also, we assumed a perfectly elastic pile and a cracked section. The modulus of elasticity for the cracked section was estimated to be 1802500 pounds per square inch.

The main inputs in the LPILE software for each soil layer are the unit weight and soils shear strength. The upper 3 feet of existing fill material was assumed to behave as “sand” with a total unit weight of 98 pounds per cubic foot (pcf), an effective friction angle of 20 degrees, and no cohesion. A request for modification of building ordinances for deriving lateral support from the existing uncertified fill will be submitted concurrently with this report. The native soil was assumed to behave as “sand” with a total unit weight of 120 pounds per cubic feet (pcf), and an effective friction angle of 35 degrees, and no cohesion. The results of the LPILE analyses are presented in Appendix B.

#### 4.2.5 CIDH Pile Construction

We expect the CIDH piles can be drilled using conventional equipment. Caving conditions are anticipated in the loose sandy soil. If caving occurs during the pile drilling, steel casing is required to support the sides of the pile excavations. If steel casing is installed, the inside diameter of the casing shall be at least as large as the diameter of the piles. Drilling shall be completed within the casing.

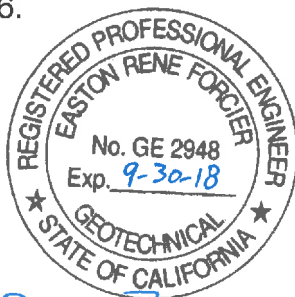
The contractor shall remove loose soil (i.e. slough) from the bottom of the pile excavation. The drilled holes shall be plumb to within a tolerance of 2 percent. Upon completion of drilling, secure covers shall be placed over the excavations. Concrete placement shall be completed within 12 hours of drilling and drilled holes shall not be left open overnight. CIDH pile excavations shall be observed and approved by the GED during drilling and prior to installation of steel reinforcement.

Depending on the final depths and construction methods, concrete placement by the pump and tremie method may be required. Concrete shall not be allowed to free fall more than 6 feet. Concrete placement shall be performed in a manner such that it does not hit the side of the drilled hole and so that the alignment of the steel reinforcement is not affected. The web of the steel reinforcement may be used as a vertical chute for placement of concrete provided the concrete does not impact its alignment.

If temporary casing is utilized, it shall be raised slowly during concrete placement as the drilled hole is filled with concrete. The bottom of the casing shall remain a minimum of 3 feet below the level of concrete during the pour.

#### 5.0 CLOSURE

If you have any questions about this report, please contact Easton Forcier at (213) 847-0476.



*Easton Forcier* 12-7-17

Easton Forcier, GE 2948  
Geotechnical Engineer II

Figure 1 – Vicinity Map

Figure 2 – Site Location Map

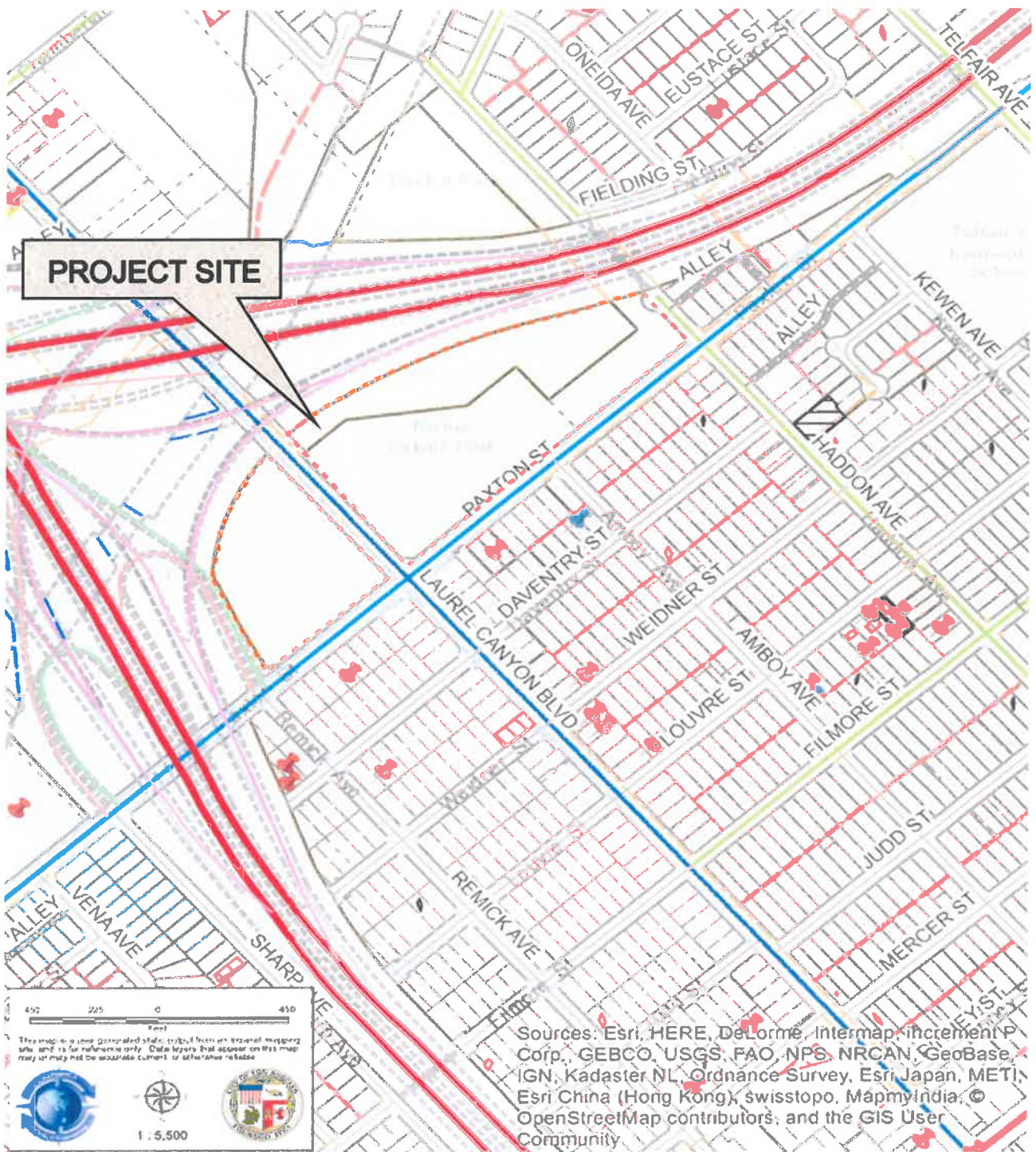
Figure 3 – Allowable Downward Capacity of CIDH Pile vs. Depth

Appendix A – Data Report by Geotechnical Professionals, Inc.

Appendix B – LPILE Results

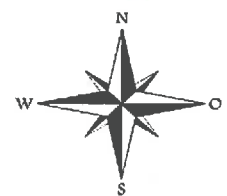


## **Figures**



Reference: NavigateLA

## VICINITY MAP



**Ritchie Valens Recreation Center**  
 10731 Laurel Canyon Boulevard  
 Los Angeles, CA 91331

**BUREAU OF ENGINEERING**  
 GEOTECHNICAL ENGINEERING DIVISION (GED)  
 GED FILE NO.: 17-167  
 DATE: DECEMBER 2017

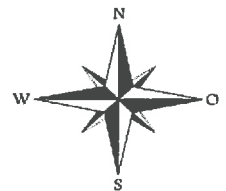
**Figure**  
**No. 1**





**LEGEND:**

- Existing light pole location ~ 60-feet high



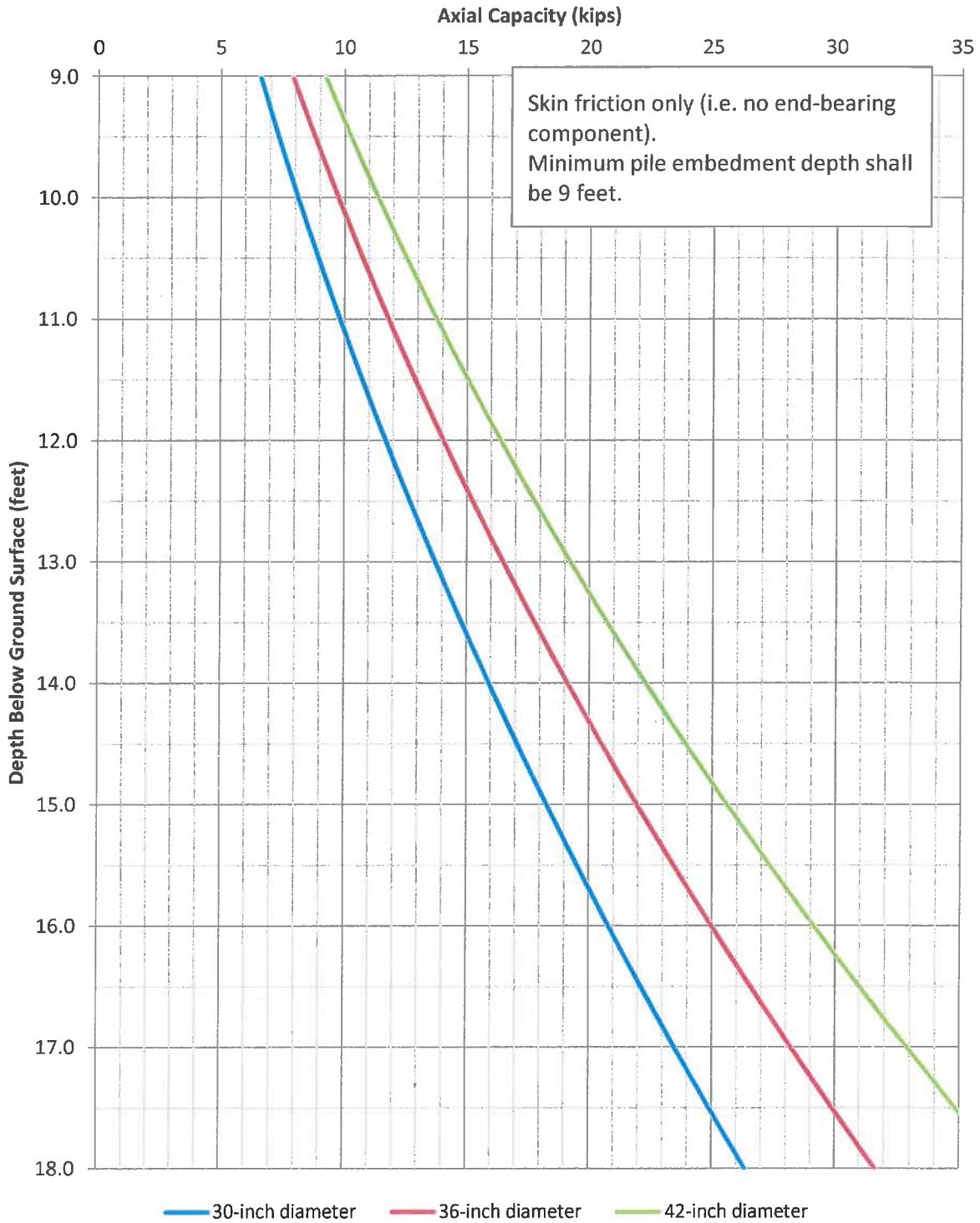
## SITE LOCATION MAP

**Ritchie Valens Recreation Center**  
 10731 Laurel Canyon Boulevard  
 Los Angeles, CA 91331

BUREAU OF ENGINEERING  
 GEOTECHNICAL ENGINEERING DIVISION (GED)  
 GED FILE NO.: 17-167  
 DATE: DECEMBER 2017

**Figure**  
**No. 2**

# Allowable Downward Capacity of CIDH Pile vs. Depth



**Ritchie Valens Recreation Center**  
 10731 Laurel Canyon Boulevard  
 Los Angeles, CA 91331

**BUREAU OF ENGINEERING**  
 GEOTECHNICAL ENGINEERING DIVISION (GED)  
 GED FILE NO.: 17-167  
 DATE: DECEMBER 2017

**Figure**  
**No. 3**

## **Appendix A**

**Geotechnical Professionals, Inc.**

**Data Report**

November 8, 2017

City of Los Angeles  
Department of Public Works Bureau of Engineering  
Geotechnical Engineering Group  
1149 South Broadway, Suite 120  
Los Angeles, California 90015

Attention: Mr. Patrick J. Schmidt  
Acting Group Manager

Subject: Data Report  
Geotechnical Investigation for  
Ritchie Valens Recreation Center Sports Lighting Project  
10731 Laurel Canyon Boulevard  
Los Angeles, California  
Contract No. C-121601, TOS No. 17-169  
Work Order No. E170510D  
GPI Project No. 2500.08I

2017 NOV 16 AM 9:53  
GEOTECHNICAL DIVISION  
ENGINEERING

Dear Mr. Schmidt:

This report presents geotechnical data from a subsurface field investigation and laboratory testing performed by Geotechnical Professionals Inc. (GPI) for the subject project. The site location is presented in Figure 1.

### SCOPE OF WORK

The scope of the geotechnical investigation presented in this report was developed by the Geotechnical Engineering Group (GEO) of the City of Los Angeles Department of Public Works, as outlined in Task Order Solicitation No. 17-169 and further updated by GEO staff. We understand that GEO will review the data from this investigation and will be responsible for geotechnical recommendations for the subject project, as the Geotechnical Engineer of Record.

The geotechnical field investigation included four hollow-stem auger borings to depths of 21½ feet below site grades. The locations of the subsurface explorations were selected by GEO and marked in the field by GPI on September 7, 2017. The approximate locations are presented in Figure 2. A detailed description of field drilling procedures for the hollow-stem auger borings and logs are presented in Appendix A.

Geotechnical laboratory testing, as requested by GEO, included the following types and number of tests:

- 16 Moisture and Density (ASTM D 2216)
- 4 Percent Passing No. 200 Sieve (ASTM D 1140)
- 3 sets Direct Shear Tests (ASTM D 3080)



A detailed description of laboratory test procedures and results are presented in Appendix B.

### CONCLUDING REMARKS

GPI warrants that the services covered by this report were performed as requested by GEO, in accordance with the standard procedures indicated, and with the standard of care of the geotechnical engineering profession in Southern California at this time. No other warranty or representation is included or intended in this report.

We appreciate the opportunity of offering our services on this project. Do not hesitate to call us if you have any questions on the contents of this report.

Respectfully submitted by,  
**Geotechnical Professionals Inc.**



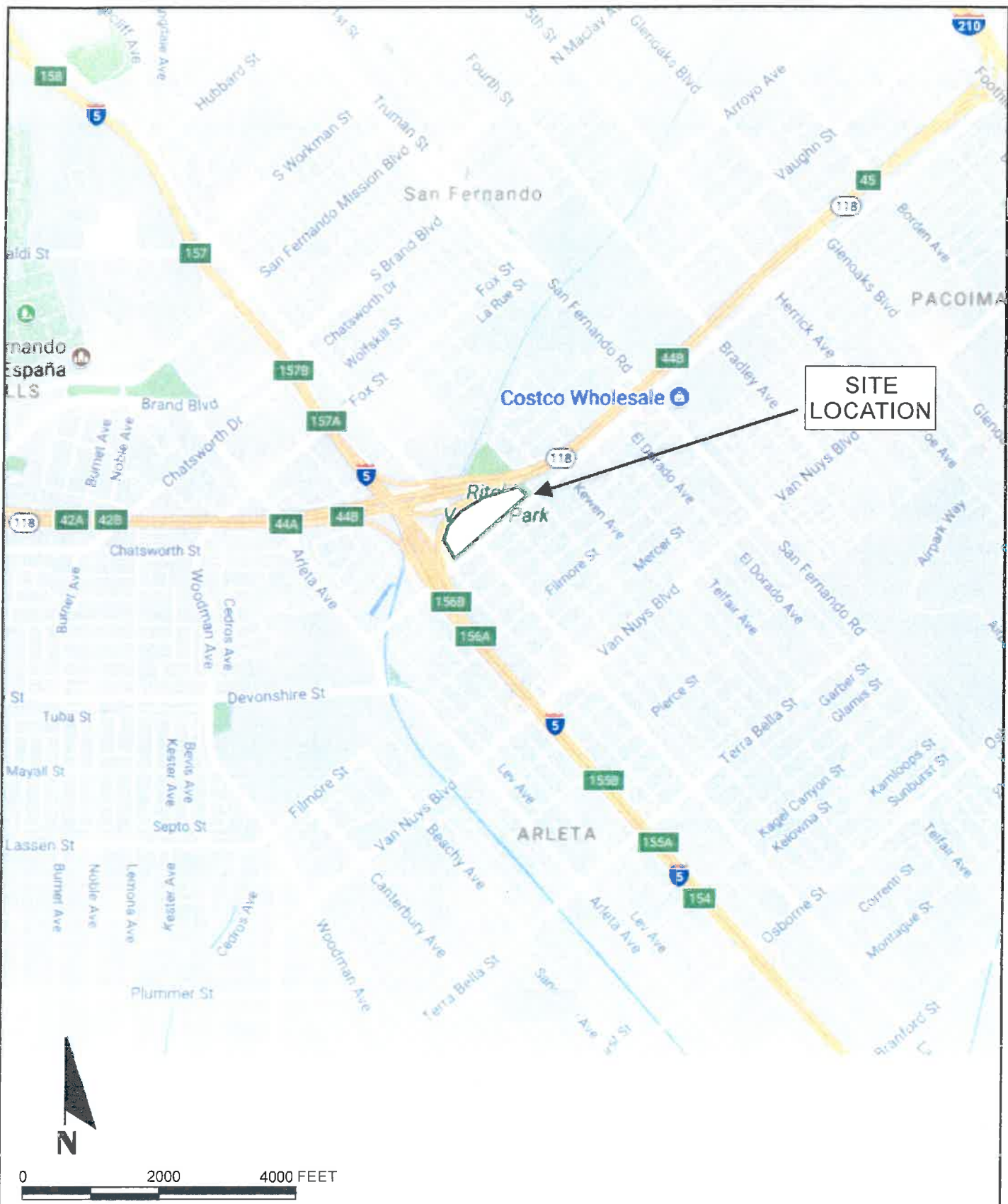
Donald A. Cords, G.E.  
Principal



NOV - 8 2017

DAC:sph

Attachments: Figure 1 - Site Location Map  
Figure 2 - Site Plan  
Appendix A - Exploratory Borings  
Appendix B - Laboratory Test Results



BASE PLAN REPRODUCED FROM GOOGLE MAPS © 2017



RITCHIE VALENS PARK

GPI PROJECT NO.: 2500.081

SCALE: 1" = 2000'

## SITE LOCATION MAP

FIGURE 1





EXPLANATION



APPROXIMATE LOCATION AND NUMBER OF EXPLORATORY BORINGS

BASE PLAN REPRODUCED FROM GOOGLE EARTH © 2017



RITCHIE VALENS PARK

**SITE PLAN**

GPI PROJECT NO.: 2500.081

SCALE: 1" = 250'

FIGURE 2

***APPENDIX A***

---

## APPENDIX A

### EXPLORATORY BORINGS

The subsurface conditions at the site were investigated by drilling and sampling four hollow-stem auger borings. The borings were advanced to depths of 21½ feet below the existing ground surface. The borings were performed with a truck mounted hollow-stem auger drill rig.

The locations of the explorations are shown on the Site Plan, Figure 2. The latitude/longitude and Northing/Easting of each boring location at the site are as follows:

Boring No.	Latitude	Longitude	UTM Easting	UTM Northing	UTM Zone
RV-1	34° 15' 52.03"	-118° 26' 24.24"	367421.40	3792416.68	11S
RV-2	34° 15' 58.48"	-118° 26' 20.69"	367514.81	3792614.13	11S
RV-3	34° 15' 58.81"	-118° 26' 18.75"	367564.58	3792623.63	11S
RV-4	34° 16' 1.46"	-118° 26' 11.15"	367760.27	3792702.39	11S

The latitude and longitude of the location were determined based on a handheld NAD 83 Coordinate System Global Positional System unit. The Universal Transverse Mercator (UTM) Easting/Northing locations were converted from the latitude/longitude.

Relatively undisturbed samples were obtained using a brass-ring lined sampler (ASTM D 3550) and split-spoon sampler by means of the Standard Penetration Test (SPT, ASTM D 6066). The brass-rings have an inside diameter of 2.42 inches. The ring samples were driven into the soil by a 140-pound hammer dropping 30 inches. The number of blows needed to drive the sampler into the soil was recorded as the penetration resistance. The spoon sampler was driven into the soil by a 140-pound hammer dropping 30 inches, employing the "free-fall" hammer described above. After an initial seating drive of 6 inches, the number of blows needed to drive the sampler into the soil a depth of 12 inches was recorded as the penetration resistance. These values are the raw uncorrected blowcounts.

Bulk samples of the soils within the upper 3 feet were obtained at all boring locations.

The field explorations for the investigation were performed under the continuous technical supervision of GPI's representative, who visually inspected the site, maintained detailed logs of the borings, classified the soils encountered, and obtained relatively undisturbed samples for examination and laboratory testing. The soils encountered in the borings were classified in the field and through further examination in the laboratory in accordance with the Unified Soils Classification System. Detailed logs of the borings are presented in Figures A-1 to A-4 in this appendix. Laboratory test results of moisture content and dry density are presented on the logs. For other laboratory tests, the type of test performed is shown with the following abbreviations:

**DS – Direct Shear Test**  
**#200 – Percent Passing No. 200 Sieve**

Soil samples were screened for organic vapors using a photo-ionization detector (Mini-Rae 2000). Organic vapors were not detected above 50 ppm for any of the samples.

Upon completion of the borings, the boreholes were backfilled with soil cuttings. The ground surface elevations, as shown on the boring logs, at the exploration locations were estimated from topographic maps contained within NavigateLA website and should be considered to be very approximate.

LAB TESTING	PID	MOISTURE (%)	DRY DENSITY (PCF)	PENETRATION RESISTANCE (BLOWS/FT)	SAMPLE TYPE	DEPTH (FEET)	DESCRIPTION OF SUBSURFACE MATERIALS		ELEVATION (FEET)
							This summary applies only at the location of this 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.		
					B	0	Grass		
	4			27	S		Fill: <b>CLAYEY SAND (SC)</b> dark brown, moist		975
DS	2	2.2	116	54	D	5	Natural: <b>SAND WITH SILT (SP-SM)</b> grey brown, slightly moist, medium dense, with gravel @ 5 feet, dry, dense		
#200	1			32	S				970
DS	15	4.3	119	56	D	10	<b>SILTY SAND (SM)</b> light brown, dry, dense, with gravel		
	0			63	S				965
	0	4.8	121	85	D	15	@ 15 feet, slightly moist, very dense		
	0			82	S				960
	1	13.5	114	15	D	20	<b>SILT (ML)</b> reddish brown, moist, stiff, with sand		
							Total Depth 21.5 feet Latitude: 34.264452 Longitude: -118.440066		

SAMPLE TYPES

- C Rock Core
- S Standard Split Spoon
- D Drive Sample
- B Bulk Sample
- T Tube Sample

DATE DRILLED:  
9-25-17

EQUIPMENT USED:  
8" Hollow Stem Auger

GROUNDWATER LEVEL:  
Not Encountered



PROJECT NO.: 2500.081  
RITCHIE VALENS REC

**LOG OF BORING NO. RV-1**

FIGURE A-1

LAB TESTING	PID	MOISTURE (%)	DRY DENSITY (PCF)	PENETRATION RESISTANCE (BLOWS/FT)	SAMPLE TYPE	DEPTH (FEET)	DESCRIPTION OF SUBSURFACE MATERIALS		ELEVATION (FEET)
							This summary applies only at the location of this 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.		
#200 DS	1	1.6	107	32	B	0	Grass	985	
	0				D		Fill: <b>SILTY SAND (SM)</b> brown, slightly moist, with gravel		
	0			38	S	5	Natural: <b>SAND WITH SILT (SP-SM)</b> brown, dry, medium dense, with gravel @ 5 feet, with gravel		
	0	3.2	112	13	D		<b>SILTY SAND (SM)</b> brown, dry, loose, with gravel		
	0			21	S	10	@ 10 feet, medium dense		
	0	3.2	123	88	D		@ 12.5 feet, very dense		
	0			36	S	15	@ 15 feet, dense		
	0	3.3	119	100	D		@ 17.5 feet, very dense		
	0			40	S	20	<b>SANDY SILT (ML)</b> brown, slightly moist, hard, with gravel		
							Total Depth 21.5 feet Latitude: 34.266244 Longitude: -118.439082		970

SAMPLE TYPES

- C Rock Core
- S Standard Split Spoon
- D Drive Sample
- B Bulk Sample
- T Tube Sample

DATE DRILLED:  
9-25-17

EQUIPMENT USED:  
8" Hollow Stem Auger

GROUNDWATER LEVEL:  
Not Encountered



PROJECT NO.: 2500.081  
RITCHIE VALENS REC

**LOG OF BORING NO. RV-2**

FIGURE A-2

LAB TESTING	PID	MOISTURE (%)	DRY DENSITY (PCF)	PENETRATION RESISTANCE (BLOWS/FT)	SAMPLE TYPE	DEPTH (FEET)	DESCRIPTION OF SUBSURFACE MATERIALS		ELEVATION (FEET)
							This summary applies only at the location of this 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.		
#200					B	0	Grass		
					S	0-4	Fill: <b>SILTY SAND (SM)</b> dark brown, moist, gravel		985
	2			40	S	4-5	Natural: <b>SAND WITH SILT (SP-SM)</b> dark brown, dry, dense, with gravel		
	0	2.6	127	48	D	5			
	7			74	S	7.5	@ 7.5 feet, very dense		980
	1	3.3	115	41	D	10	@ 10 feet, dense		
	1			62	S	12			975
	0	5.7	123	68	D	15	<b>SANDY SILT (ML)</b> reddish brown, slightly moist, hard		
	17			111	S	15-17	<b>SILTY SAND (SM)</b> brown, slightly moist, very dense		970
	12	6.7	107	100	D	20	<b>SANDY SILT (ML)</b> brown, slightly moist, hard		
							Total Depth 21.5 feet Latitude: 34.266336 Longitude: -118.438543		

**SAMPLE TYPES**

- C Rock Core
- S Standard Split Spoon
- D Drive Sample
- B Bulk Sample
- T Tube Sample

DATE DRILLED:  
9-25-17

EQUIPMENT USED:  
8" Hollow Stem Auger

GROUNDWATER LEVEL:  
Not Encountered



PROJECT NO.: 2500.081  
RITCHIE VALENS REC

**LOG OF BORING NO. RV-3**

FIGURE A-3

LAB TESTING	PID	MOISTURE (%)	DRY DENSITY (PCF)	PENETRATION RESISTANCE (BLOWS/FT)	SAMPLE TYPE	DEPTH (FEET)	DESCRIPTION OF SUBSURFACE MATERIALS		ELEVATION (FEET)
							This summary applies only at the location of this 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.		
#200					B	0	Grass		995
	0	2.8	120	36	D		Fill: <b>SILTY SAND (SM)</b> dark brown, moist, with gravel		
	7			16	S	5	Natural: <b>SILTY SAND (SM)</b> brown, dry, medium dense, with gravel		990
	0	3.1	123	46	D				
	0			80	S	10	@ 10 feet, very dense		985
	2	3.0	127	100	D				
	0			15	S	15	<b>SILT (ML)</b> reddish brown, slightly moist, stiff to very stiff, with sand		980
	0	3.5	119	79	D		<b>SILTY SAND (SM)</b> brown, dry, very dense, with gravel		
	14			88	S	20			975
								Total Depth 21.5 feet Latitude: 34.267071 Longitude: -118.436430	

SAMPLE TYPES

- C Rock Core
- S Standard Split Spoon
- D Drive Sample
- B Bulk Sample
- T Tube Sample

DATE DRILLED:  
9-25-17

EQUIPMENT USED:  
8" Hollow Stem Auger

GROUNDWATER LEVEL:  
Not Encountered



PROJECT NO.: 2500.081  
RITCHIE VALENS REC

**LOG OF BORING NO. RV-4**

FIGURE A-4



***APPENDIX B***

---

## APPENDIX B

### LABORATORY TESTS

#### INTRODUCTION

Representative undisturbed soil samples and bulk samples were carefully packaged in the field and sealed to prevent moisture loss. The samples were then transported to our Cypress office for examination and testing assignments. Laboratory tests were performed on selected representative samples as an aid in classifying the soils and to evaluate the physical properties of the soils affecting foundation design and construction procedures. Detailed descriptions of the laboratory tests are presented below under the appropriate test headings. Test results are presented on the boring logs and in the figures that follow.

#### MOISTURE CONTENT AND DRY DENSITY

Moisture content and dry density were determined from a number of the ring samples. The samples were first trimmed to obtain volume and wet weight and then were dried in accordance with ASTM D 2216. After drying, the weight of each sample was measured, and moisture content and dry density were calculated. Moisture content and dry density values are presented on the boring logs in Appendix A.

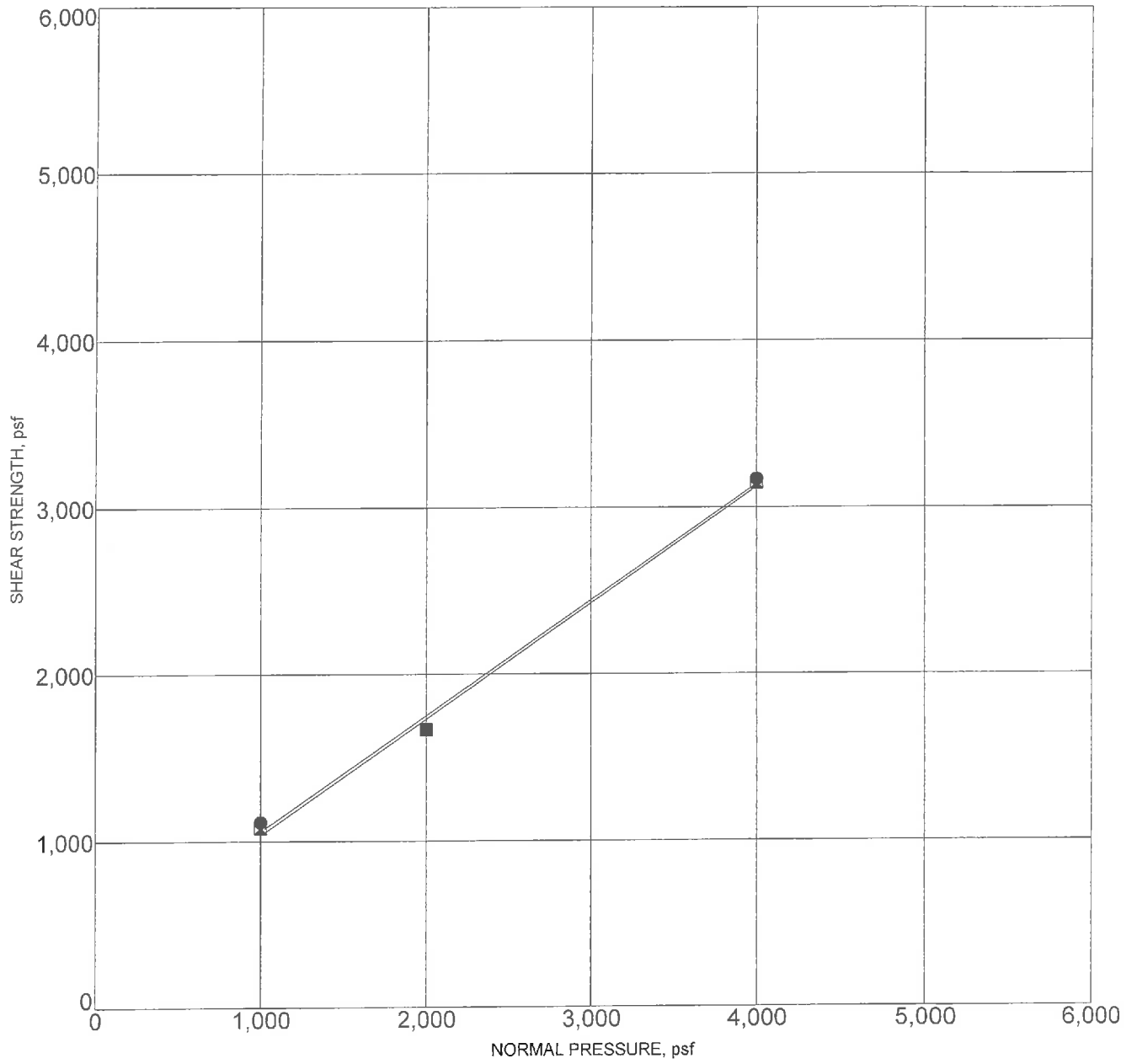
#### PERCENT PASSING NO. 200 SIEVE

Four soil samples were dried, weighed, soaked in water until individual soil particles were separated, and then washed on the No. 200 sieve. That portion of the material retained on the No. 200 sieve was oven-dried and weighed to determine the percentage of the material passing the No. 200 sieve. A summary of the percentages passing the No. 200 sieve is presented below.

BORING NO.	DEPTH (ft)	SOIL DESCRIPTION	PERCENT PASSING No. 200 SIEVE
RV-1	7.5	Sand w/Silt (SP-SM)	6
RV-2	10	Silty Sand (SM)	22
RV-3	7.5	Sand w/Silt (SP-SM)	11
RV-4	5	Silty Sand (SM)	19

#### DIRECT SHEAR

Direct shear tests were performed on undisturbed samples in accordance with ASTM D 3080. The samples were placed in the shear machine, and a normal load was applied. The samples were inundated for 2 hours, allowed to consolidate, and then were sheared to failure at a strain rate of 0.002 inches per minute. The tests were repeated on additional test specimens under increased normal loads. Shear stress and sample deformation were monitored throughout the test. The results of the direct shear tests are presented in Figures B-1 to B-3.



● **PEAK STRENGTH**  
*Friction Angle= 35 degrees*  
*Cohesion= 366 psf*

■ **ULTIMATE STRENGTH**  
*Friction Angle= 35 degrees*  
*Cohesion= 342 psf*

Sample Location	Classification	DD,pcf	MC,%
RV-1 5.0	SAND WITH SILT (SP-SM) with gravel	183	2.2

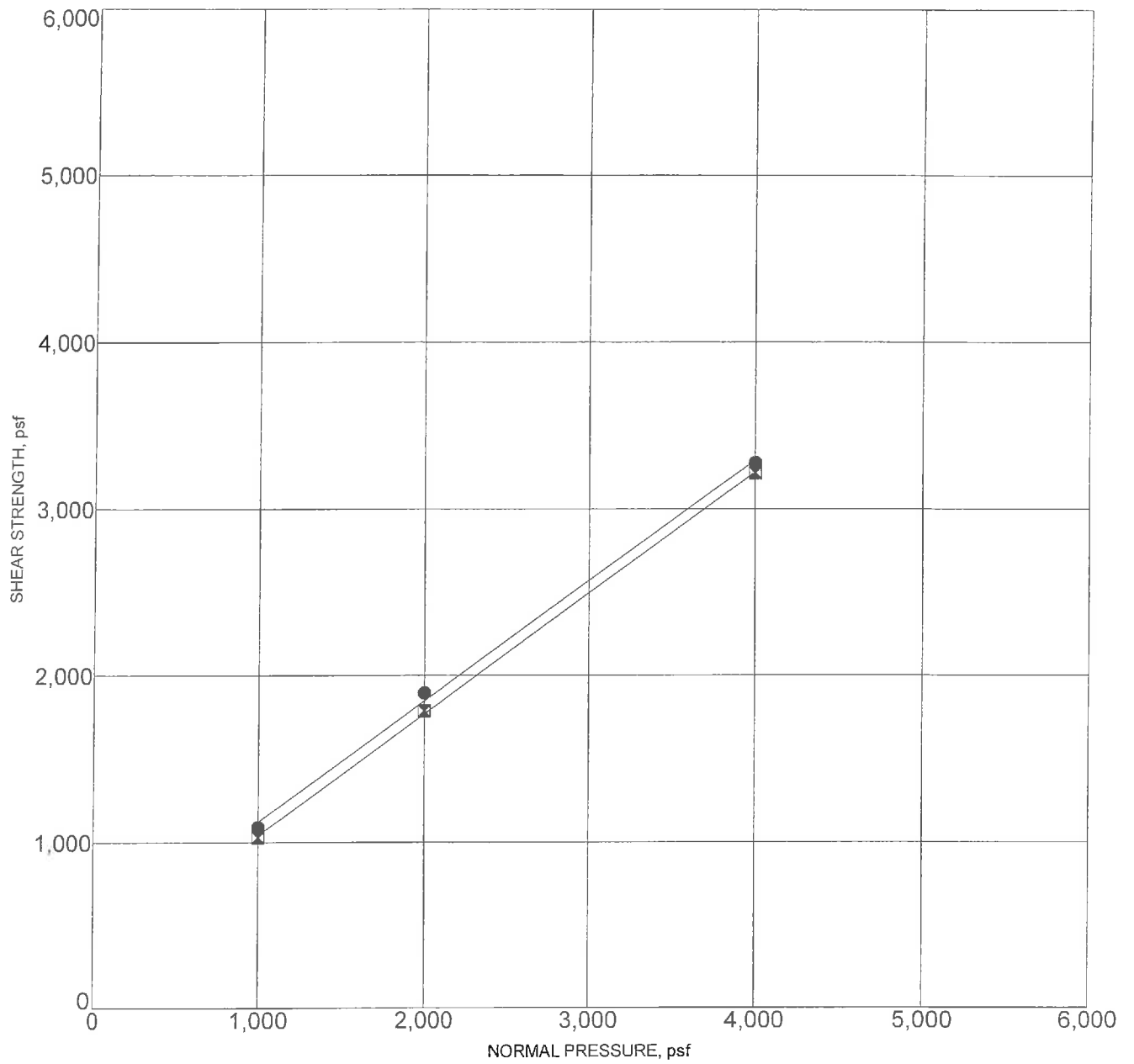
PROJECT: RITCHIE VALENS REC

PROJECT NO. 2500.081



**DIRECT SHEAR TEST RESULTS**

FIGURE B-1



● **PEAK STRENGTH**  
*Friction Angle= 36 degrees*  
*Cohesion= 402 psf*

⊠ **ULTIMATE STRENGTH**  
*Friction Angle= 36 degrees*  
*Cohesion= 318 psf*

Sample Location	Classification	DD,pcf	MC, %
RV-1      10.0	SILTY SAND (SM) with gravel	119	4.3

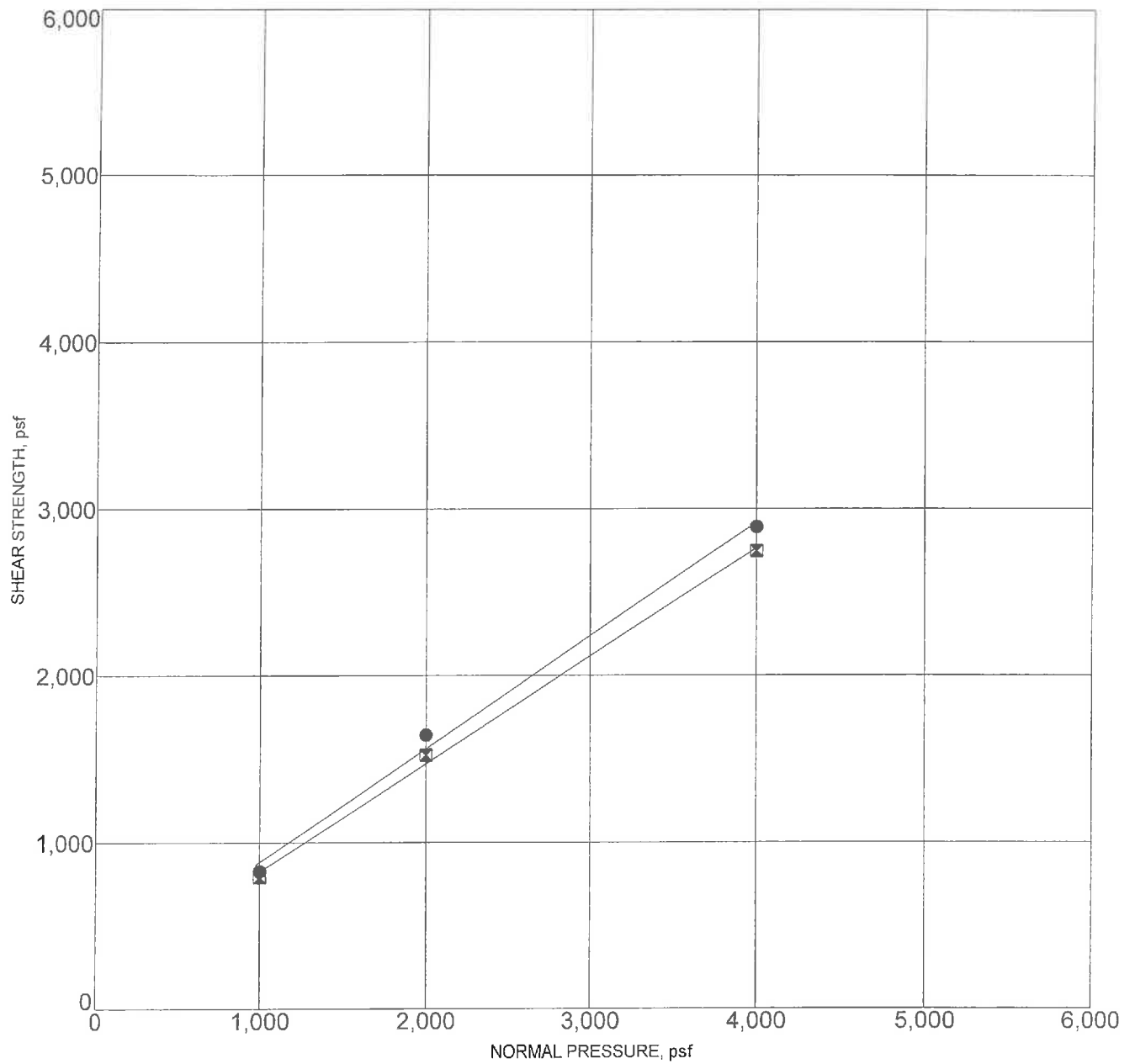
PROJECT: RITCHIE VALENS REC

PROJECT NO.2500.08I



**DIRECT SHEAR TEST RESULTS**

FIGURE B-2



● **PEAK STRENGTH**  
*Friction Angle= 34 degrees*  
*Cohesion= 204 psf*

⊠ **ULTIMATE STRENGTH**  
*Friction Angle= 33 degrees*  
*Cohesion= 180 psf*

Sample Location	Classification	DD,pcf	MC,%
RV-2      7.5	SILTY SAND (SM) with gravel	112	3.2

PROJECT: RITCHIE VALENS REC

PROJECT NO. 2500.08I

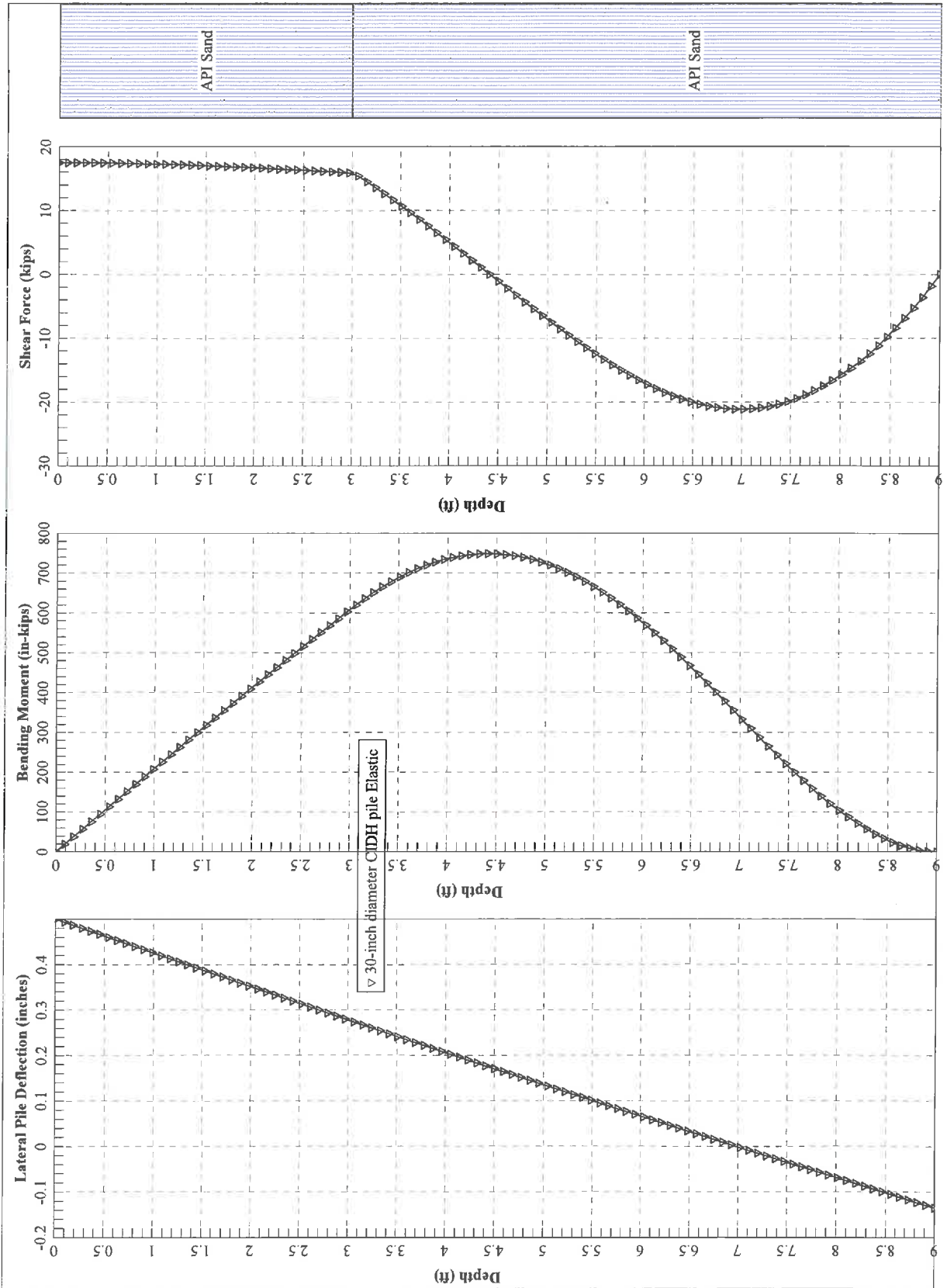


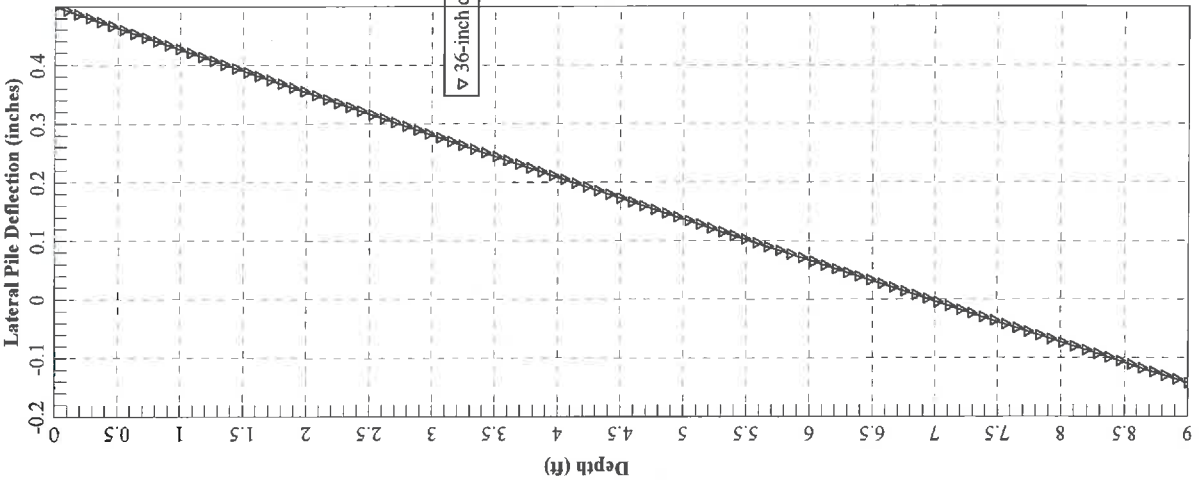
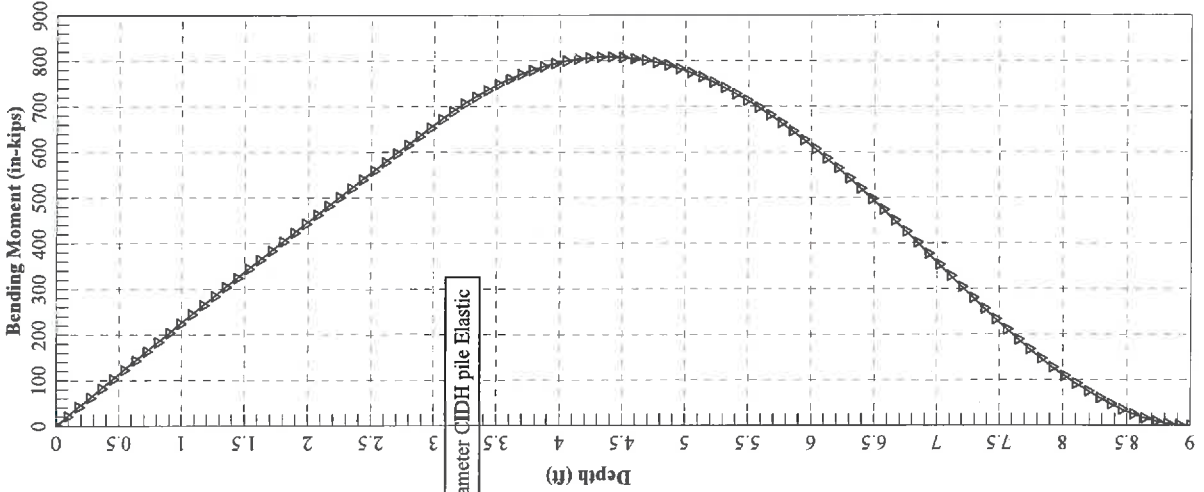
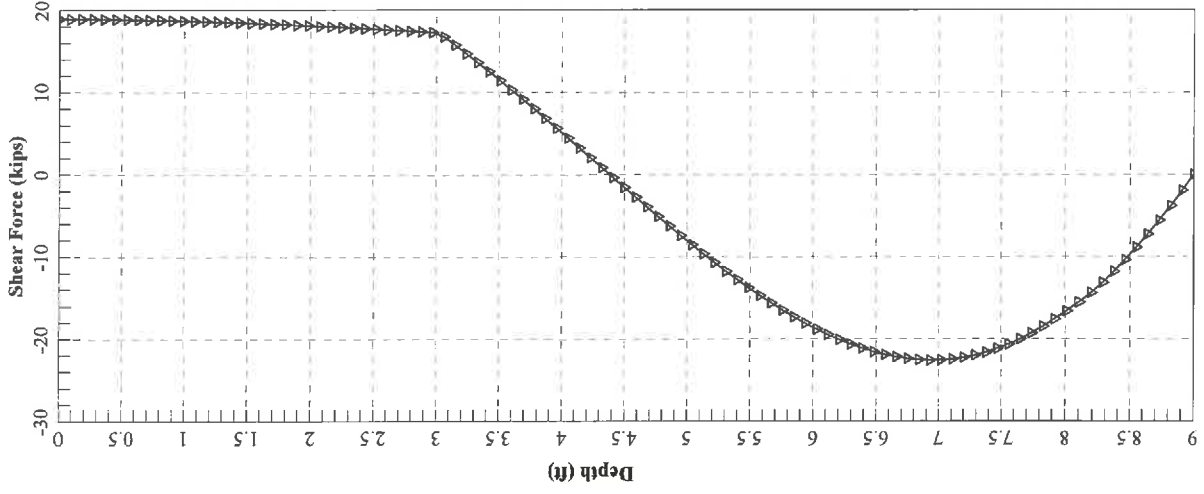
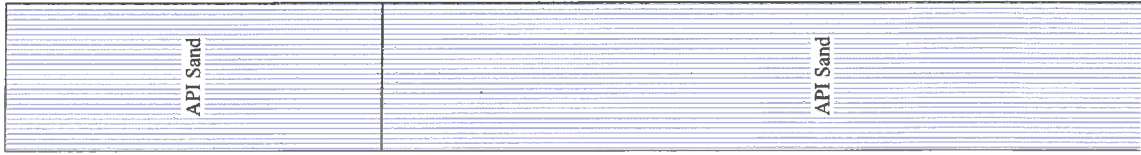
**DIRECT SHEAR TEST RESULTS**

FIGURE B-3

## **Appendix B**

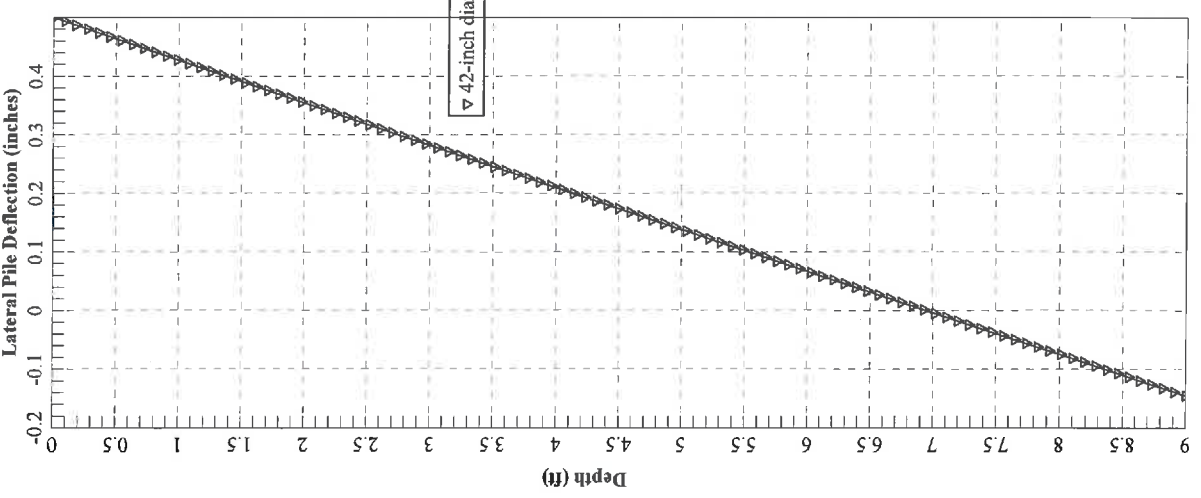
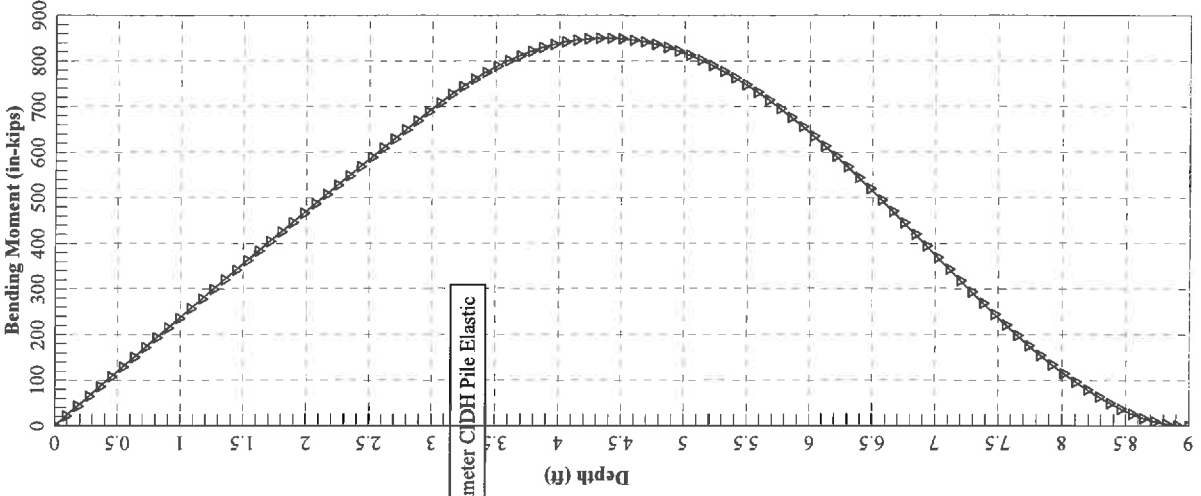
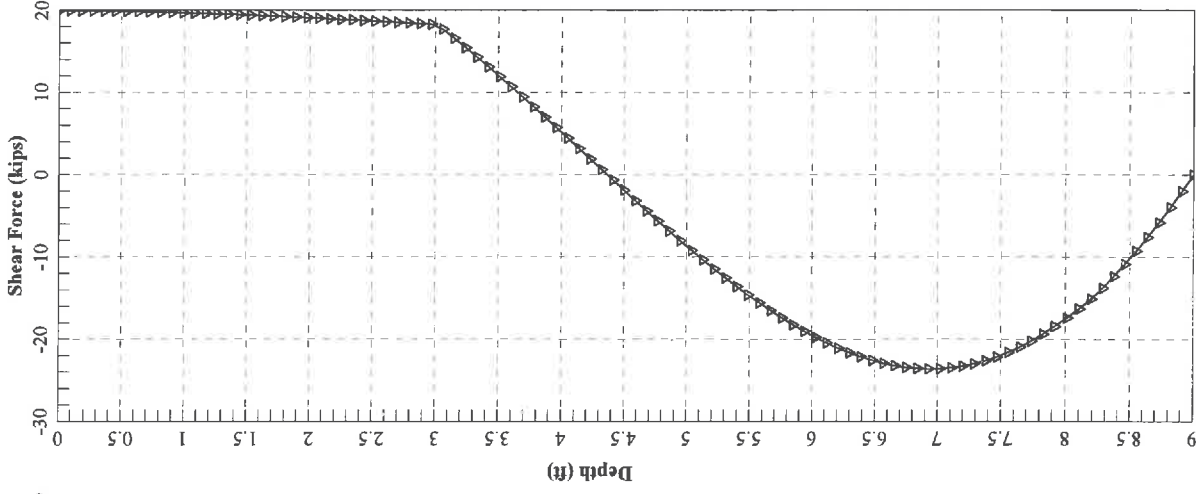
### **LPILE Results**





▽ 36-inch diameter CIDH pile Elastic





▽ 42-inch diameter CDH Pile Elastic