APPROVED
June 20 2024
BOARD OF RECREATION
AND PARK COMMISSIONERS

**BOARD REPORT** **NO.** 24-138

DATE June 20, 2024 C.D. 10

**BOARD OF RECREATION AND PARK COMMISSIONERS**

SUBJECT: BALDWIN HILLS RECREATION CENTER SPORTS FIELD LIGHTING (W.O. PRJ21134 & #E170501) PROJECT (AKA PROP K SPORTS LIGHTING IMPROVEMENT: BALDWIN HILLS RECREATION CENTER) – FINAL ACCEPTANCE

| | | | |
|---|---|---|---|
| B. Aguirre | | M. Rudnick | |
| B. Jones | | for * C. Santo Domingo | DF |
| C. Stoneham | | N. Williams | |

General Manager

Approved X Disapproved Withdrawn

RECOMMENDATIONS

1. Accept the work performed for the Baldwin Hills Recreation Center Sports Field Lighting (W.O. PRJ21134 & #E170501) Project (AKA Prop K Sports Lighting Improvement: Baldwin Hills Recreation Center) (Project), constructed by the Department of Recreation and Parks (RAP) as-needed prequalified on-call vendors, as outlined in the body of this Report.

SUMMARY

The Project is located at 5401 Highlight Place, Los Angeles, CA 90016 in Council District 10. This property includes a picnic area, basketball courts, children's play area, baseball diamonds, and a gymnasium. Approximately 3,500 City residents live within a one-half mile walking distance of the recreation center.

This Project is a Proposition K – L.A. for Kids Program (Proposition K) funded project. The scope of work consisted of replacing existing lighting at three baseball diamonds and two basketball courts with new Light Emitting Diode (LED) light fixtures.

On January 16, 2020, the Board of Recreation and Park Commissioners (Board) approved the final plans and specifications for the Project (Report No. 20-011), and bids for the work were solicited from RAP's pre-qualified contractors. Electro Construction Corporation was determined to be the lowest responsive and responsible bid, and a Notice to Proceed letter was issued on

June 21, 2021.

Plans and specifications for the Project were prepared by RAP's Planning, Maintenance, and Construction Branch. Construction management services were provided by the Bureau of Engineering (BOE).

BOE has reviewed the as-built plans and has informed RAP that the Project is complete in accordance with the plans and specifications. RAP has also confirmed that there are no unresolved contract compliance or labor issues related to the work completed. The breakdown of the total construction cost is as follows:

| Vendor | Original Award Amount | Change Order Amount | Change Order Percentage | Total Amount |
|---|---|---|---|---|
| Electro Construction Corporation | $498,975 | $14,496 | 2.9% | $513,471 |

During the course of construction, three change orders were issued for the Project, in the amount of $14,496 or 2.9% of the base award amount. The three change orders were attributed to the additional scope requested by RAP due to conflict with existing programming, insufficient existing conditions at the switchboard behind home plate, and existing rusting bullhorns at the basketball courts.

The construction of the Project was fully funded by Proposition K funds. The details of the funding source utilized for this Project were outlined in Board Report No. 20-011.

TREES AND SHADE

This Project did not require any tree removal. Existing trees near the location of the improvements were protected during the construction period.

ENVIRONMENTAL IMPACT

After reviewing and evaluating the Project in accordance with the California Environmental Quality Act (CEQA), the Board determined that it is categorically exempt from the provisions of CEQA (Report No. 20-011). No additional CEQA documentation is required for the acceptance of the Project.

FISCAL IMPACT STATEMENT

There is no immediate fiscal impact to RAP's General Fund. The Project should reduce long-term maintenance and operational costs.

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 LED lighting systems will decrease energy consumption resulting in a more sustainable park system

This Report was prepared by Gunwoo Choi, Project Manager, and reviewed by Marcelino Ascensio, Architectural Division, BOE; Ohaji K. Abdallah, Prop K Program Manager, Architectural Division, BOE.

LIST OF ATTACHMENTS

1) Attachment No. 1 – Report No. 20-011
2) Attachment No. 2 – Change Order Log

Attachment No. 1

APPROVED
JAN 16 2020
BOARD OF RECREATION
AND PARK COMMISSIONERS

**BOARD REPORT** NO. 20-011

DATE January 16, 2020 C.D. 10

**BOARD OF RECREATION AND PARK COMMISSIONERS**

SUBJECT: BALDWIN HILLS RECREATION CENTER SPORTS FIELD LIGHTING (W.O. #E170501) PROJECT (aka PROP K SPORTS LIGHTING IMPROVEMENT: BALDWIN HILLS RECREATION CENTER) – APPROVAL OF FINAL PLANS - CATEGORICAL EXEMPTION FROM 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], CLASS 1(4) [REHABILITATION OF DETERIORATED STRUCTURES] AND CLASS 1(12) [OUTDOOR LIGHTING FOR SECURITY AND OPERATION] OF THE 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 | DF |
| V. Israel | _____ | N. Williams | _____ |

M. Alvarez
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 Baldwin Hills Recreation Center Sports Field Lighting (aka Prop K Sports Lighting Improvement: Baldwin Hills Recreation Center) (W.O. #E170501) Project (Project);

2. Find that the proposed Project is categorically exempt from the provisions of the California Environmental Quality Act (CEQA) pursuant to Article III, Section 1, Class 1(1) [exterior alterations where there be no or negligible expansion of use], Class 1(4) [rehabilitation of deteriorated structures] 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, and direct Department of Recreation and Parks (RAP) staff to file a Notice of Exemption (NOE) with the Los Angeles County Clerk;

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;

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

SUMMARY

Baldwin Hills Recreation Center is located at 5401 Highlight Place, in Council District 10. This property includes picnic area, basketball courts, children's play area, baseball diamonds, and a gymnasium. Approximately 3,500 City residents live within a one-half mile (1/2) walking distance of the recreation center.

The proposed Project is a Proposition K – L.A. for Kids Program Competitive grant (9th Cycle) funded project. The scope of work consists of replacing existing lighting at three (3) baseball diamonds and two (2) basketball courts with the new, Light Emitting Diode (LED) light fixtures. This will provide an 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 for BOE to 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 November 14, 2016. The second LVNOC meeting was on March 7, 2017. The third LVNOC meeting was on April 11, 2017. The community, the LVNOC and Office of Council District 10 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:

| FUNDING SOURCE | FUND/DEPT./ACCT. NO. |
|---|---|
| Proposition K | 43K/10/10NPFH |
| Sites and Facilities | 209/88/TBD |

TREES AND SHADE

No trees will be removed as a part of this proposed Project, and any existing trees near the proposed location(s) of new light standards to be installed as a part of this Project will be protected during the construction. Since this 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 project do not include funds for the installation of shade structures and trees.

ENVIRONMENTAL IMPACT

The proposed Project consists of the removal and replacement of deteriorated light fixtures and controls for the existing baseball field and basketball courts to meet the current standard of public safety. As such, RAP 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 as well as pursuant to Article 19, Sections 15301(a) and 15301(d) of California CEQA Guidelines. An NOE will be filed with the Los Angeles County Clerk upon approval by the Board.

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, BOE; Deborah Weintraub, Chief Deputy City Engineer, BOE; and Darryl Ford, Interim Superintendent, Planning, Construction and Maintenance Branch, RAP.

LIST OF ATTACHMENT(S)

1) Final Plans for Baldwin Hills Sport Field Lighting project (aka Prop K Sports Lighting Improvement: Baldwin Hills Recreation Center)
2) Geotechnical Report for Baldwin Hills Recreation Center Sports Field Lighting Project.

Attachment No. 1

# DEPARTMENT OF RECREATION AND PARKS
# CITY OF LOS ANGELES
# PROP K SPORTS LIGHTING IMPROVEMENT: BALDWIN HILLS RC

## ELECTRICAL SPECIFICATIONS

DIVISION 1.
GEBNERAL PROVISIONS FOR DEPARTMENT OF RECREATIONS AND PARKS AND THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTIONS. THE LOS ANGELES CITY ELECTRICAL CODE (LATEST EDITION) ARE MADE A PART OF THESE PLANS AND SPECIFICATIONS.

WHERE CONFLICTS OCCURS BETWEEN DIVISION 1 DEPARTMENT OF RECREATION AND PARKS AND THE SSPWC, THE DIVISION 1 DEPARTMENT OF RECREATION AND PARKS DEPARTMENT SHALL TAKE PRECEDENCE. CATALOG SPECIFICATIONS WHEN DESCRIBED BY MODEL NUMBER ARE HEREBY MADE A PART OF THESE SPECIFICATIONS. WHERE OPTIONS FOR MATERIALS AND OR METHODS APPEARS IN THE STANDARD SPECIFICATIONS, OR THE LOS ANGELES ELECTRICAL CODE, THE OPTION DEFINED HEREIN SHALL BE USED. ANY DISCREPANCIES SHALL BE RESOLVED WITH THE FINAL DECISION MADE BY THE GENERAL MANAGEROF THE DEPARTMENT OF RECREATION AND PARKS OR AUTHORIZED REPRESENTATIVE.

1. GENERAL SCOPE OF WORK:

WORK IN THIS CONTRACT TO INCLUDE ALL LABOR, MATERIALS AND EQUIPMENT NECESSARY FOR THE LIGHTING AND ELECTRICAL DISTRIBUTION SYSTEM. COMPLETE AND READY FOR USE, IN ACCORDANCE WITH THESE CONTRACT DRAWINGS AND THESE SPECIFICATIONS.

2. CLEANING, INSTALLATION AND REMOVAL OF RUBBISH:

BESIDES THE GENERAL CLEANING, THE CONTRACTOR SHALL BE RESPONSIBLE FOR SEEING THAT THE FOLLOWING SPECIAL CLEANING FOR ALL TRADES SHALL BE DONE AT THE COMPLETION OF THE WORK AND DURING INSTALLATION.

(A.) CLEAN ALL ELECTRICAL EQUIPMENT AND DEVICES. REMOVE STAINS, DUST, DIRT, PLASTER, PAINT AND ETC.

(B) REMOVE ALL SPOTS, SOILS, PLASTERS AND PAINTS, SOILED DURING CONSTRUCTION, FROM ALL EXISTING WORK AND CLEAN TO ORIGINAL CONDITION.

(C) PROTECT AND CLEAN ALL FIXTURES AND EQUIPMENT.

3. CONSTRUCTION WATER, LIGHT AND POWER:

(A) THE DEPARTMENT WILL FURNISH AT NO COST TO CONTRACTOR WATER AND ELECTRICITY AS IT EXIST ON THE SITE. CONTRACTOR SHALL FURNISH AND MAINTAIN ALL TEMPORARY LINES, FIXTURES AND EQUIPMENT FOR WATER AND ELECTRICITY AND REMOVE SAME AT COMPLETION OF WORK AT HIS/HER OWN EXPENSE.

(B) THE DEPARTMENT WILL NOT BE HELD RESPONSIBLE FOR FAILURE OF EXISTING SOURCES TO SUPPLY CONTINUOUS WATER OR POWER, NOR WILL THE DEPT. BE HELD RESPONSIBLE FOR THE EXISTING SOURCES TO SUPPLY ADEQUATE DEMAND AS REQUIRED BY THE CONSTRUCTION OF THIS WORK.

4. MAIN SERVICE:

(A) REQUIRED:

1. UNDERGROUND SERVICE CONDUIT FOR LIGHT AND POWER FROM MAIN SWITCHBOARD TO PROPERTY LINE TO BE INSTALLED BY THE CONTRACTOR AS DIRECTED BY THE DEPARTMENT OF WATER AND POWER. CONDUITS SHALL HAVE A MINIMUM 3" CONCRETE COVER.

(B). COORDINATE ALL LADWP WORK AS FOLLOWS:

1. UNDERGROUND SERVICE CONDUITS FROM PROPERTY LINE TO UTILITY SOURCE INSTALLED BY THE DEPARTMENT OF WATER AND POWER. UTILITY FEES TO BE PAID FOR BY LA RECREATION AND PARKS.

2. MAIN SERVICE UNDERGROUND CONDUCTORS FROM UTILITY SOURCE TO MAIN SWITCHBOARD.

3. CURRENT TRANSFORMERS FOR SWITCHBOARD.

4. SERVICE CONNECTIONS TO TRANSFORMERS AND METERS.

5. METERS.

6. EXCESS CABLE CHARGES TO BE PAID BY LA RECREATION AND PARKS.

5. MAIN SWITCHBOARD:

(A) TYPE:

NEMA 1 FLOOR STANDING ENCLOSURE, DEAD FRONT, DEAD REAR, WITH ALL BUSSING, WIRING AND CONNECTIONS ACCESSIBLE FROM THE FRONT. ARRANGED IN ACCORDANCE WITH WIRING DIAGRAMS AND APPROVED SHOP DRAWINGS AS MANUFACTURED BY SQUARE D, GE, EATON OR EQUAL.

(B) CONSTRUCTION:

1. ALL BUSSING MATERIALS SHALL BE TIN PLATED COPPER PER NEMA STANDARDS.

2. VERTICAL SECTIONS SHALL HAVE FULL HEIGHT BUSSING AND WHERE SPACES FOR FUTURE USE DEVICES ARE SHOWN ON THE DRAWINGS. ALL THE NECESSARY MOUNTING HARDWARE AND PROVISIONS SHALL BE FURNISHED.

(C) SERVICE SECTION:

SHALL CONTAIN FIXED POSITION MAIN CIRCUIT BREAKER EQUIPPED WITH PROVISIONS FOR UTILITY COMPANY METERING IN STRICT ACCORDANCE WITH THE DEPARTMENT OF WATER AND POWER REQUIREMENTS. THE MAIN CIRCUIT BREAKER SHALL BE TRIP FREE, THERMAL MAGNETIC, MOLDED CASE TYPE, BY SQUARE D TYPE LAL 42,000 AIC RMS SYMMETRICAL OR EQUIVALENT GE, EATON OR EQUAL.

THERE SHALL BE MEANS TO LOCK EACH MAIN CIRCUIT BREAKER IN THE OPEN POSITION WITH A PADLOCK. THE DEPARTMENT OF WATER AND POWER WILL FURNISH THE LOCK AND OPEN THE MAIN BREAKER WHEN REQUIRED BY STATION MAINTENANCE OR REPAIR.

(D) DISTRIBUTION SECTION:

SHALL CONTAIN THERMAL-MAGNETIC MOLDED CASE CIRCUIT BREAKER OF THE REQUIRED VOLTAGE & AMPERAGE WITH A MINIMUM 25,000 RMS SYMMETRICAL SHORT CIRCUIT INTERRUPTING CAPACITY BY SQUARE D, TYPE LAL, EQUIVALENT GE, EATON OR EQUAL, UNLESS NOTED OTHERWISE ON THE PLAN.

(E.) IDENTIFICATION:

ENGRAVE LAMINATED PLASTIC NAMEPLATES TO BE PROVIDED FOR EACH DEVICE ON THE SWITCHBOARD. NAMEPLATES TO BEAR THE DESIGNATION OF THE LOAD CONTROLLED.

(F.) TIGHTEN CONNECTORS AND TERMINALS, INCLUDING SCREWS AND BOLTS IN ACCORDANCE WITH EQUIPMENT MANUFACTURER'S PUBLISHED TORQUE TIGHTENING VALUES FOR EQUIPMENT CONNECTORS. WHERE MFRS. TORQUING REQUIREMENTS ARE NOT INDICATED. USE TIGHTENING TORQUES SPECIFIED IN UL STANDARD 486A.

(G.) MOUNTING INDOOR TYPE:

SECURELY BOLTED TO FLOOR AND WALL AND PLUMB AND SQUARE. PROVIDE 3" RAISED CONCRETE SLAB FOR MOUNTING SWITCHGEAR LOCATED ON THE GROUND FLOOR. DIMENSION OF RAISED CONCRETE SLAB TO BE THE SAME AS THE SWITCHGEAR. VERIFY SITE SPECIFICATION INSTALLATION WITH RAP ENGINEERS/PROJECT MANAGER.

(H.) MOUNTING OUTDOOR TYPE:

SHALL BE NEMA 3R, GAUGE 10 METAL ENCLOSURE UNLESS NOTED OTHERWISE ON THE PLAN.

(I.) SHOP DRAWINGS:

BEFORE ANY FABRICATION OF SWITCHGEAR IS BEGUN, SHOP DRAWINGS INDICATING THE MATERIALS AND DETAILS OF CONSTRUCTION AND EQUIPMENT AND UL LISTING SHALL BE APPROVED BY THE DEPARTMENT OF WATER AND POWER PRIOR TO THEIR SUBMITTAL TO THE DEPT. OF RECREATION AND PARKS.

(J.) GROUNDING:

PROVIDE AND INSTALL A DRIVEN GROUND COPPER ROD 5/8" IN DIAMETER BY 10 FT. LONG FOR SERVICE GROUNDING REQUIREMENTS LOCATED INSIDE THE ENCLOSURE. ALSO PROVIDE AND USE OTHER GROUNDING ELECTRODES AS INDICATED ON PLAN OR AS REQUIRED BY CODE. EACH ELECTRODE SHALL BE BONDED TOGETHER TO FORM THE GROUNDING ELECTRODE SYSTEM. THE BONDING JUMPERSHALL BE INSTALLED IN ACCORDANCE WITH THE APPLICABLE SECTIONS OF THE CODE, ARTICLE 250. TIGHTEN CONNECTORS TO COMPLY WITH TIGHTENING TORQUES SPECIFIED IN UL STD. 486 TO ASSURE PERMANENT AND EFFECTIVE GROUND.

6. PANELBOARDS:

(A.) PANELBOARDS SHALL BE CIRCUIT BREAKER TYPE WITH BOLT-ON TYPE, TRIP FREE CIRCUIT BREAKERS. PANELBOARDS SHALL BE FURNISHED WITH COPPER BUSSING AND MAIN LUGS OR MAIN BREAKER AND ALL BRANCH CIRCUIT BREAKER AS INDICATED ON THE SCHEDULES. EACH BRANCH CIRCUIT BREAKERS SHALL HAVE PERMANENT TYPE PLASTIC OR METAL NUMBERS TO IDENTIFY THE CIRCUIT PROTECTED. MIN. SIZE SHALL BE 20"W X 5 3/4"D, HEIGHT AS REQUIRED. PANELBOARD SHALL BE SQ. D, GE, EATON OR EQUAL.

(B.) IDENTIFICATION SHALL HAVE ENGRAVED LAMINATED PLASTIC NAMEPLATES. SCHEDULES SHALL BE TYPEWRITTEN AND SHALL DESIGNATE THE AREA OR EQUIPMENT SERVED BY EACH CIRCUIT MOUNTED IN A CARD HOLDER ON THE INSIDE OF THE DOOR AND COVERED WITH GLASS OR CLEAR PLASTIC.

(C.) SHOP DRAWINGS ARE REQUIRED. THEY SHALL INDICATE ALL THE DETAILS OF CONSTRUCTION AND EQUIPMENT. ALL ITEMS SUBMITTED FOR INSTALLATION SHALL BEAR A UL LABEL AND LISTED FOR THE PURPOSE.

(D.) CIRCUIT BREAKERS SHALL HAVE A MINIMUM OF 10,000 AMPS RMS SYMMETRICAL FOR 120/240 VOLTS AND 22,000 AMPS FOR 277/480 VOLTS SYSTEM UNLESS NOTED ON THE PLAN.

(E.) MOUNTING SHALL BE FLUSH WITH SURROUNDING WALLS UNLESS SPECIFICALLY NOTED TO BE SURFACE MOUNTED ON THE PLAN. MAXIMUM HEIGHT OF THE HIGHEST CIRCUIT BREAKER OR CONTROL DEVICES SHALL NOT BE MORE THAN 6 FT. ABOVE THE SURROUNDING FINISH FLOOR.

(F.) TIGHTEN CONNECTORS AND TERMINALS INCLUDING SCREWS AND BOLTS IN ACCORDANCE WITH EQUIPMENT MANUFACTURER'S PUBLISHED TORQUE TIGHTENING VALUES FOR EQUIPMENT CONNECTORS. WHERE MANUFACTURER'S TORQUING REQUIREMENTS ARE NOT INDICATED, TIGHTEN CONNECTORS AND TERMINALS TO COMPLY WITH TIGHTENING TORQUE SPECIFIED IN UL STANDARDS 486 A & B.

7. RAINPROOF ENCLOSURES FOR SWITCHBOARD AND/OR PANELBOARDS. SEE DETAIL DWG.

(A.) RAINPROOF ENCLOSURE FOR OUTDOOR INSTALLATION SHALL BE FREE STANDING NEMA TYPE 3R GAUGE 10 CONSTRUCTION (EXCEPT GAUGE 12 STAINLESS STEEL FOR IRRIGATION CONTROLLER SERVICE) ENCLOSURE OF SUITABLE DIMENSION. ALL BOLT HEADS EXPOSED ON THE EXTERIOR OF ENCLOSURE SHALL BE ROUND HEAD GALVANIZED TYPE BY HOFFMAN ENGINEERING CO. OR MYERS POWER PRODUCTS, IEM OR EQUAL.

(B.) DOORS SHALL BE CUSTOM EQUIPPED WITH STRONG PADLOCKABLE STEEL COVER TO PROTECT THE OPERATING HANDLES. PAD LOCKABLE COVERS SHALL ACCOMMODATE THE DEPARTMENT OF RECREATION AND PARKS LOCKS. PROVIDE TOP AND BOTTOM DOOR LOUVERS.

(C.) MOUNTING: OUTDOOR TYPE SHALL BE SECURELY BOLTED TO A STEEL REINFORCED CEMENT CONCRETE PAD EXTENDING 6 INCHES BEYOND THE PANEL ENCLOSURE IN BOTH LENGTH AND WIDTH DIMENSIONS AND 36 INCHES IN FRONT OF PANEL ENCLOSURE. THE PAD SHALL EXTEND 6" ABOVE AND 6" BELOW FINISHED GRADE. REINFORCING STEEL SHALL BE #4 REBAR LAID LENGTHWISE AND CROSSWISE 12" O.C. WITH 3 INCH CLEAR COVER TO SUBGRADE, AND SECURELY TIED AT EACH POINT OF CONTACT.

SWITCHGEAR INSTALLATION ON EXISTING SLABS:
SECURELY BOLTED TO A STEEL REINFORCED CONCRETE PAD EXTENDING 6" BEYOND THE PANEL ENCLOSURE IN BOTH REAR & SIDES AND 0" IN FRONT OF ENCLOSURE. PAD SHALL EXTEND 3" ABOVE & 6" BELOW FINISH GRADE. REINFORCING STEEL SAME AS ABOVE.

(D.) LIGHTS AND RECEPTACLES: PROVIDE AND INSTALL A SURFACE MOUNTED LED FIXTURE, WP WALL SWITCH AND A 20 AMP RATED GFI TYPE RECEPTACLE INSIDE THE ENCLOSURE FED FROM ONE 20A-1P CIRCUIT BREAKER WIRED WITH 2#12 THHN/THWN CU IN 1/2" CONDUIT.

8. CONTROLS:

(A.) TYPES

1. CIRCUIT BREAKERS - SHALL BE THERMAL MAGNETIC. EACH BREAKER SHALL BE EQUIPPED WITH A DEVICE FOR INDIVIDUAL PADLOCKING.

2. TIME SWITCHES - SHALL BE AN ET90215CR INTERMATIC. CONTROL SHALL HAVE AN ASTRO-DIAL, TWO CHANNEL FEATURE, SKIP-A-DAY, OFFSET TO SUNRISE AND/OR SUNSET AND MANUAL OVERRIDE INDEPENDENTLY PROGRAMMABLE FOR EACH CHANNEL. IT SHALL BE SURFACE MOUNTABLE OR SHALL BE IN NEMA 3R FOR OUTDOOR INSTALLATION.

3. LIGHT SWITCH TIMER - SHALL BE PARAGON MODEL NO. ET1100 SERIES. IT SAHLL BE SOLID STATE WITH ADJUSTABLE TIMER RANGE FROM ONE MINUTE TO 18 HOURS. THE CONTROL SHALL BE TAMPER-PROOF WITH OUT-OF-SIGHT PROGRAMMING DIAL. THE CONTROL SHALL BE RATED UP TO 1100 WATTS AND CAPABLE OF OPERATING BETWEEN 24 VAC AND 277 VAC.

4. LOCAL SWITCHES - SHALL BE SPECIFICATION GRADE, HUBBELL 1221-I SERIES EQUIVALENT LEVITON MODEL OR EQUAL.

5. LIGHTING CONTACTORS - AMPERE RATING, NUMBER OF POLES, LINE VOLTAGE, CONTROL VOLTAGE, MOMENTARY OR MAINTAINED CONTACT AS INDICATED ON DRAWINGS, OR AS REQUIRED, SQUARE D CLASS 8903, OR EQUIVALENT AUTOMATIC SWITCH CO. MODEL OR EQUAL.

6. PUSH BUTTON STATIONS - HEAVY DUTY CONTROL STATIONS, LOCATE IN RECREATION DIRECTORS OFFICE ( UNLESS OTHERWISE INDICATED ) FOR REMOTE CONTROL OF FIELD LIGHTING. SQUARE D CLASS 9001, TYPE B IN NEMA 4 ENCLOSURE. FOR OUTSIDE INSTALLATION REES 04960-415 MUSHROOM PLUNGER OR EQUAL. LOCATE PUSH BUTTON AS SPECIFIED ON THE PLAN OR DETAIL.

(B.) IDENTIFICATION - ALL CONTROL DEVICES SHALL BE IDENTIFIED BY ENGRAVED PLATES DESIGNATING THE EQUIPMENT CONTROLLED. MOTORS AND EQUIPMENT SHALL BEAR NEAT, LEGIBLE AND PERMANENT IDENTIFICATION CORRESPONDING WITH THAT ON THE CONTROL DEVICES USING ENGRAVED LAMINATED PLASTIC NAMEPLATES AFFIXED WITH A MINIMUM OF TWO ESCUTCHEON PINS OR SCREWS.

(C.) LOCATIONS - FOR OUTDOOR INSTALLATION, TIME SWITCHES AND CONTACTORS SHALL BE LOCATED IN A SEPARATE PARTITIONED SPACE INSIDE THE RAINPROOF ENCLOSURE, OR AS INDICATED IN THE PLAN.

9. BOXES:

(A.) TYPES: WEATHERPROOF CAST BOXES FOR OUTDOOR AND SURFACE WIRING AND WHERE INDICATED ON THE DRAWINGS BY SYMBOL "WP", CROUSE-HINDS FD OR RUSSELL-STOLL FD SERIES OUTLET BOXES OR EQUAL. CONCRETE PULL BOX WITH BOLT DOWN STEEL COVER IS PERMITTED FOR UNDERGROUND INSTALLATION. BROOKS PRODUCT H20 RATED WITH GALVANIZED FRAME OR EQUAL, OR AS INDICATED ON THE PLAN. PULL BOXES TO BE SEIZED PER NEC.

(B.) ACCESSORIES: WEATHERPROOF FOR CROUSE-HINDS FD SERIES OUTLET BOXES OR RUSSELL-STOLL FD SERIES OR EQUAL.

(C.) UNDERGROUND PULL BOXES. AVOID INSTALLATION AT THE LOWEST SPOT OF THE SURRDUNDING AREAS. PULL BOX SHOULD HAVE AT LEAST 12" LAYER OF PEA GRAVEL BENEATH THE BOX.

10. RECEPTACLES:

(A.) TYPES: ALL RECEPTACLES SHALL BE SPECIFICATION GRADE AND SHALL MEET NEMA WD-1-1974 TESTS.

(B.) FLUSH WALL TYPE, HUBBELL 5262-I, 15 AMPERE, 125 VOLTS OR HUBBELL 8300-I 20 AMPERE, 125 VOLTS, OR EQUIVALENT LEVITON MODEL OR EQUAL.

(C.) SHALL BE SCREW-TERMINAL TYPE. NO PUSH-IN TYPE CONNECTIONS ARE PERMITTED.

11. OUTLET PLATES:

(A.) SHALL BE STAINLESS STEEL FOR ALL RECEPTACLE AND LIGHT SWITCH, SIGNAL AND COMMUNICATION OUTLETS.

(B.) SHALL BE ENGRAVED PLATES FOR SPECIAL EQUIPMENT, MOTORS, VOLTAGE OTHER THAN 120 VOLT AND GANGED SWITCHES.

12. INSTALLATION OF POLES:

(A.) TYPE SHALL BE ROUND TAPERED GALVANIZED STEEL UNLESS OTHERWISE INDICATED. POLE HEIGHT SHALL BE LESS THAN 30' UNLESS NOTED ON THE PLAN.

(B.) ERECTION: IN ACCORDANCE WITH APPROVED SHOP DRAWINGS, PLUMB AND PROPERLY ALIGNED. BASE PLATES SHALL BE GROUTED USING AN APPROVED STANDARD COMMERCIAL NON-SHRINK GROUTING MORTAR WITH L.A. RESEARCH REPORT NUMBER. THE NON-SHRINK MORTAR SHALL BE HELD BACK ONE INCH FROM EDGES OF BASE PLATES, AND THE SPACE THEN FILLED WITH GROUT COMPOSED OF ONE PART LOW ALKALI PORTLAND CEMENT TO TWO PARTS WASHED SAND, BEVELED AND TROWELED SMOOTH. EXPOSED SURFACES OF MORTAR SHALL BE WATER CURED WITH WET BURLAP FOR SEVEN DAYS.

(C.) GROUNDING: SECURELY GROUND ALL PARKING LOT LIGHTING POLES WITH APPROVED GROUNDING BUSHINGS AND GROUNDING CLAMPS.

(D.) CONDUITS ENTERING AND/OR LEAVING POLE FOOTING SHALL BE PVC SCHED 80 TO A MINIMUM DISTANCE OF 3'-0" FROM FOOTINGS.

(E.) TACK WELDING OF NUTS TO WASHER AND WASHER TO BASE PLATE IS REQUIRED.

13. CONDUIT:

(A.) REQUIRED: ALL WIRING SHALL BE IN RIGID OR PVC COATED STEEL CONDUIT EXCEPT AS FOLLOWS:

1. PVC MAYBE USED UNDERGROUND FROM PVC SCHED 80 CONDUIT STUBS LOCATED 3 FEET OUTSIDE FOOTING LINES.

2. EMT MAYBE USED ABOVE GROUND INSIDE BUILDINGS 10'AFF WHERE NOT ENCASED IN MASONRY OR CONCRETE AND NOT SUBJECT TO PHYSICAL DAMAGE.

(B.) TYPES:

1. RIGID STEEL CONDUIT: IN ACCORDANCE WITH USA STD C80.1 AND ASTM B-6.

2. ELECTRICAL METALLIC TUBING: IN ACCORDANCE WITH USA STD C80-3 & ASTM B-6.

3. PVC CONDUIT: SHALL CONFORM TO NEMA STANDARD TC-6-1967, WC-1094 AND UL STANDARD 651, 1974 HEAVY WALL SCHEDULE 40 BURIED NOT LESS THAN 24 INCHES BELOW GRADE.

4. PVC EXTERNALLY COATED RIGID STEEL CONDUIT, RIGID STEEL ZINC COATED WITH ADDITIONAL COATING OF PVC CONFORMING TO ANSI C-80 & NEMA RN1.

(C.) FITTINGS AND ACCESSORIES:

1. FOR RIGID STEEL CONDUIT: APPROVED TYPES; ERICSON COUPLING OR THREADLESS CONNECTORS FOR JOINING RUNS. GROUNDING BUSHING SHALL BE THOMAS & BETTS, APPLETON OR EQUAL MALLEABLE IRON INSULATED GROUNDING BUSHINGS, UL FILE E14814A.

2. FOR ELECTRICAL METALLIC TUBING: COMPRESSION GLAND OR STEEL SET SCREW TYPE COUPLINGS AND CONNECTORS WITH INSULATED THROAT.

(D.) SIZES: MINIMUM 3/4" CONDUIT UNLESS NOTED ON THE PLAN.

(E.) CONCRETE COVER:

U.O.N. UNDERGROUND CONDUIT RUNS IN RECREATION AND PARKS PROPERTY INSTALLED WITH SCHEDULE 40 PVC SHALL HAVE A MINIMUM 6" DETECTABLE "CAUTION" TAPE, 12" ABOVE CONDUIT, OVER ITS ENTIRE LENGTH (EXCEPT UNDER CONCRETE SIDEWALKS), AND SHALL HAVE AN EQUIPMENT GROUNDING CONDUCTOR SIZED ACCORDING TO THE PREVAILING CODE BUT NOT LESS THAN SHOWN ON THE PLAN.

14. CONDUIT INSTALLATION:

(A.) ALL CONDUITS SHALL BE CONCEALED EXCEPT WHERE OTHERWISE INDICATED ON THE DRAWINGS.

(B.) PVC COATED STEEL CONDUIT WHICH WILL BE BURIED IN THE GROUND SHALL HAVE WATER TIGHT JOINTS. JOINTS SHALL BE ASSEMBLED WITH LEAD PLATE (ANTI-SEIZE COMPOUND).

(C.) INSTALL EXPANSION FITTINGS IN ALL RACEWAY WHENEVER EXPANSION JOINTS ARE CROSSED. FITTINGS SHALL BE EQUAL TO "OZ" TYPE "XZ" OR "TX".

(D.) NO HORIZONTAL CONDUIT SHALL BE INSTALLED IN CONCRETE SLABS-ON-GRADE. SLEEVES FOR CONDUIT PENETRATING FLOORS OR CONCRETE SLAPS SHALL TERMINATE 3 INCH ABOVE THE FLOOR. CONDUITS SHALL BE PROTECTED FROM CORROSION BY ONE OF THE FOLLOWING METHODS. (EXTEND 3" ABOVE AND 3" BELOW TOP OF CONCRETE.)

1. PVC EXTERNALLY COATED STEEL CONDUIT BY ROBROY INDUSTRIES.

2. SPIRAL WRAP WITH 40 MIL HALF LAP PLASTIC TAPE.

3. PVC SLEEVE.

(E.) TOPS OF UNDERGROUND CONDUIT RUNS OUTSIDE OF BUILDING OR UNDER CONCRETE SLABS SHALL NOT BE LESS THAN 24" BELOW FINISHED GRADE, NOR LESS THAN THAT REQUIRED BY THE DEPARTMENT OF WATER AND POWER. UNDERGROUND CONDUIT SHALL NOT PASS OVER TANKS OR OTHER UNDERGROUND EQUIPMENT OR THROUGH FOOTINGS EXCEPT AS DETAILED ON THE STRUCTURAL DRAWINGS.

(F.) ALL CONDUIT BENDS INSTALLED UNDERGROUND SHALL BE THE LONG RADIUS TYPE WITH RADII NOT LESS THAN 10 TIMES THE INTERNAL DIAMETER OF THE CONDUIT AND WITH NOT MORE THAN TWO 90° BENDS AND ONE 45° SWEEP IN ANY RUN. EXCEPTION: FOR POWER AND LIGHT CONDUIT ABOVE GROUND, FACTORY ELLS ARE PERMITTED.

(G.) EACH RUN SHALL BE TESTED IMMEDIATELY AFTER INSTALLATION TO ASSURE FREEDOM FROM OBSTRUCTION AND EACH END PLUGGED AFTER THE TESTING IS COMPLETED. A GALVANIZED IRON PULL WIRE NO. 12 AWG OR 1 /8-INCH NYLON POLYPROLENE CORD SHALL BE INSTALLED IMMEDIATELY AFTER CONDUIT INSTALLATION IN EACH CONDUIT IN WHICH THE CONDUCTORS WILL NOT BE IMMEDIATELY INSTALLED.

(H.) CONDUITS "JACK-THRU" AND/OR BORED THRU UNDERGROUND SHALL BE MINIMUM 1". PULL IN PVC SCHED 40 THROUGH BORING HOLE.

1. CONDUITS IN UNDERGROUND PULL BOXES SHALL BE SEALED WITH "LHD"-1# OR 5# DUCT SEAL AS MANUFACTURED BY DOTTIE CO. OR APPROVED EQUAL.

15. CONDUCTORS:

(A.) TYPE THHN/THWN, 600 VOLTS INSULATION PER UL 83 FOR ALL GENERAL WIRING SUBJECT TO TEMPERATURES AT 75°C MINIMUM, WET OR DRY LOCATIONS.

(B.) TYPES:

1. COPPER WIRE FOR ALL CONDUCTORS.

2. NO CONDUCTORS SMALLER THAN NO. 12 AWG EXCEPT FOR CONTROL WIRES WHICH SHALL BE NO. 14 AWG OR AS INDICATED ON THE PLAN.

3. CONDUCTORS FROM BASE OF NEW OR EXISTING POLES UP TO LUMINAIRES SHALL BE NO. 10 AWG MINIMUM UNLESS OTHERWISE NOTED ON THE PLAN. PROVIDE APPROXIMATELY 18" SLACK IN HAND HOLE AND PULL BOXES.

4. FOR IRRIGATION CONTROL WIRES, REFER TO IRRIGATION SPECIFICATIONS.

(C.) SPLICES:

1. BRANCH AND FEEDER CONDUCTOR JOINTS SHALL BE LOCATED ONLY IN OUTLET BOXES, FIXTURES OR PULL BOXES. CONDUCTOR JOINTS SHALL NOT BE MADE IN CONDUIT FITTINGS.

2. ALL SPLICES IN UNDERGROUND PULL BOXES SHALL BE SCOTCH BAGGED AND WATER TIGHT OR USE POLARIS, DRYCON CONNECTOR OR EQUIVALENT.

(D.) COLOR CODE:

1. FOR POLYPHASE CIRCUITS, IDENTIFY EACH PHASE THROUGHOUT THE CIRCUIT WITH DESIGNATION PHASE A (BLACK), PHASE B (RED) AND PHASE C (BLUE), NEUTRAL (WHITE) FOR 208/120V, 3 PHASE; PHASE A (BLACK), HIGH-LEG (ORANGE), PHASE C (BLUE), NEUTRAL (WHITE) FOR 240/120V 3 PHASE; PHASE A (BROWN), PHASE B (ORANGE), PHASE C (YELLOW), NEUTRAL (WHITE) FOR 480/277V, 3 PHASE.

2. FOR CONDUCTOR SMALLER THAN NO. 6 AWG COLOR CODING SHALL BE ACCOMPLISHED BY INHERENT INSULATION COLOR. TAGGING PAINT OR OTHER MARKINGS SHALL NOT BE USED FOR COLOR IDENTIFICATION.

(E.) INSPECTION:

CONTRACTOR SHALL NOTIFY THE GENERAL MANAGER OR AUTHORIZED REPRESENTATIVE 48 HOURS PRIOR TO START OF PULLING WIRE THROUGH ANY OF THE UNDERGROUND CONDUIT RUNS. THE CONTRACTOR SHALL START PULLING WIRE ONLY AFTER THE AUTHORIZED REPRESENTATIVE INSPECTS AND FIND THAT: THE WIRE CONTAINS NO SPLICES, THE NEUTRAL WIRE IS WHITE AND THE EQUIPMENT GROUND WIRE IS GREEN.

PARK PROUD LA

THE CITY OF LOS ANGELES
DEPARTMENT OF RECREATION AND PARKS
GENERAL MANAGER: MIKE SHULL
ASSISTANT MANAGER: CATHIE S. DOMINGO
PROJECT LANDSCAPE ARCHITECT: LIC. NO.
PROJECT ENGINEER: David Oski LIC. NO. E 18742
AS-BUILTS DRAWN BY: DATE:

REGISTERED PROFESSIONAL ENGINEER
No. E18742
Exp. 6/30/2021
ELECTRICAL
STATE OF CALIFORNIA

PROJECT NAME:
PROP K SPORTS LIGHTING IMPROV: BALDWIN HILLS
ADDRESS:
5401 HIGHLIGHT PLACE
LOS ANGELES, CA 90016

| REVISIONS: | DATE: |
|---|---|
| △ | |
| △ | |
| △ | |
| △ | |
| △ | |
| △ | |

PLAN NAME:
ELECTRICAL SPECS & NOTES

| DRAWN BY: | APPROVED BY: |
|---|---|
| DO | |
| SCALE: | ISSUE DATE: 6/25/2019 |
| W.O. NO. | FILE NO. |

DRAWING NO.
E1.0
SHEET 1 OF 7 SHEETS

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

October 6, 2017

**BALDWIN HILLS RECREATION CENTER – SPORTSFIELD LED LIGHTING**
**5401 HIGHLIGHT PLACE, LOS ANGELES, CA 90016**
**W.O. E170501D** **GEO FILE NO. 16-095**

## 1.0 INTRODUCTION

The Los Angeles Department of Public Works, Bureau of Engineering, Geotechnical Engineering Group (GEO) 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 on the northwest corner of Exposition Boulevard and Highlight Place in the Baldwin Hills area of Los Angeles. The project site is within the existing Baldwin Hills Recreation Center.

## 2.0 PROJECT DESCRIPTION

The project site is presented on Figure 2 – Site Location Map. The project includes installing a new light-emitting diode (LED) light pole to illuminate the baseball field in the northeast area of the park. We understand the proposed LED light pole may be up to approximately 80 feet high.

## 3.0 GEOTECHNICAL INVESTIGATION

Our geotechnical investigation consisted of field exploration and laboratory testing, which were both 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. GEO has reviewed their report, concurs with the information contained in it, and accepts responsibility for the use of its contents.

### 3.1 SUBSURFACE CONDITIONS

GPI drilled four hollow-stem auger (HSA) borings to depths ranging from approximately 20½ to 21½ feet below ground surface (bgs). The boring locations are presented on the Test Boring Location Map and Aerial Photo in Standard's data report (Appendix A). Although only one light pole is proposed at this time, GPI drilled borings in other areas of the site in the event the project scope changes in the future. Boring BH-2 was drilled in close proximity to the proposed light pole.

Uncertified fill up to approximately 13 feet thick was encountered in BH-2. The fill mostly consists of sandy lean clay to a depth of approximately 7½ feet and clayey sand below 7½ feet. A 2-foot thick layer of native organic soil (i.e. peat) was encountered at approximately 13 feet. The underlying native soil consists of sandy lean clay to the maximum explored depth of approximately 20½ feet.

The BH-2 boring log indicates groundwater was not encountered to the maximum explored depth of 20½ feet bgs; however, the native soil was wet and the boring was not open long enough for groundwater levels to stabilize. Based on information by the California Department of Conservation, Division of Mines and Geology (1998), the historical high groundwater depth is on the order of 10 feet.

### 3.2 LABORATORY TEST RESULTS

The laboratory testing program for all four HSA borings consisted of in-situ moisture content and dry density, fines content (percent passing the No. 200 sieve), grain size distribution, direct shear, unconsolidated undrained (UU) triaxial, expansion index, and Atterberg Limits. The laboratory testing program for BH-2 included in-situ moisture content and dry density, fines content, Atterberg Limits, and UU triaxial.

The results of the UU triaxial test indicate the ultimate undrained shear strength of the existing sandy lean clay fill from BH-2 is approximately 4,780 pounds per square foot (psf). The results of the UU triaxial test on a sample of the native clayey soil from BH-3 indicate the undrained shear strength is 3,470 psf.

## 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, GEO shall be notified. Supplemental recommendations may be required.

### 4.1 SITE PREPARATION

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. Earthwork associated with the new light pole is not anticipated.

### 4.2 NEW LIGHT POLE FOUNDATION

We recommend the new light pole be supported on a cast-in-drilled-hole (CIDH) pile with a minimum diameter of 30 inches. Recommendations are provided in the following sections.

#### 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 34.02485°N and Longitude 118.36324°W coordinates were used for the site location.

***Seismic Design Parameters***

| Parameter | Value | Reference |
|---|---|---|
| Site Class | D | ASCE 7-10 Table 20.3-1 |
| $S_S$ | 2.006 | ASCE 7-10 Figure 22-1 |
| $S_1$ | 0.729 | ASCE 7-10 Figure 22-2 |
| $S_{MS}$ | 2.006 | ASCE 7-10 Equation 11.4-1 |
| $S_{M1}$ | 1.094 | ASCE 7-10 Equation 11.4-2 |
| $S_{DS}$ | 1.337 | ASCE 7-10 Equation 11.4-3 |
| $S_{D1}$ | 0.729 | ASCE 7-10 Equation 11.4-4 |
| $T_O$ (seconds) | 0.109 | ASCE 7-10 Chapter 11 |
| $T_S$ (seconds) | 0.545 | ASCE 7-10 Chapter 11 |

### 4.2.2 Axial Capacity in Compression

The minimum pile embedment depth shall be 18 feet or 3 feet into the native sandy clay, whichever is deeper. The minimum pile diameter shall be 30 inches. An allowable adhesion value of 500 psf per foot of embedment below 15 feet may be used to develop frictional resistance. If higher capacities are needed, an allowable adhesion value of 1000 psf per foot may be used below 20 feet. The actual pile length shall be determined by the structural engineer.

The total settlement is not expected to exceed ½-inch provided the pile is 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 (see Section 4.2.2). 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 pile was evaluated using the LPILE (Ensoft, 2016) software program. LPILE (2016) uses load deflection (p-y) curves to approximate the relationship between soil resistance and pile deflection. The lateral load behavior was evaluated for a free head deflection of ½-inch, and the pile depth was assumed to be 18 feet. 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 uncertified fill and peat soil were both modeled in LPILE using a total unit weight of 98 pcf, effective friction angle of 20 degrees, and no cohesion. A request for modification of building ordinances for deriving lateral support from the existing undocumented fill will be submitted concurrently with this report.

The results of the LPILE analyses are summarized in Appendix B.

### 4.2.5 CIDH Pile Construction

We expect the CIDH pile can be drilled using conventional equipment. Caving conditions are not anticipated; however, if it occurs during the pile drilling, steel casing is required to support the sides of the excavation. If 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 GEO during drilling and prior to installation of steel reinforcement.

Depending on the final depth 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.

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.

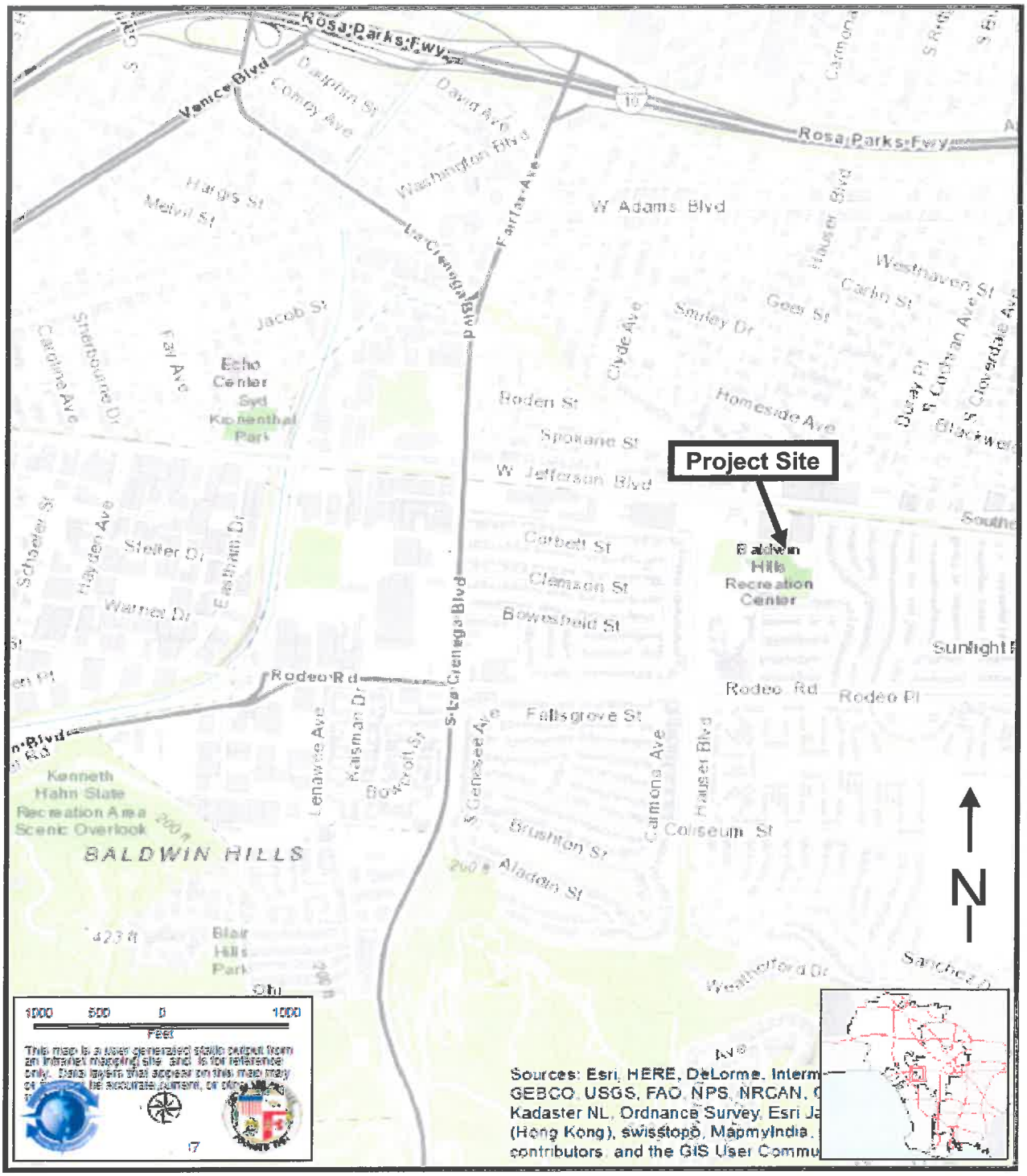
## 5.0 CLOSURE

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


Easton Forcier 10-6-17

Easton Forcier, GE 2948
Geotechnical Engineer I

Figure 1 – Vicinity Map
Figure 2 – Proposed Light Pole Location Map
Appendix A – Data Report by Geotechnical Professionals, Inc. dated October 3, 2017
Appendix B – LPILE Results




Reference: NavigateLA

# Vicinity Map

| | | |
|---|---|---|
| **Baldwin Hills Recreation Center**<br>5401 Highlight Place<br>LOS ANGELES, CALIFORNIA | BUREAU OF ENGINEERING<br>GEOTECHNICAL ENGINEERING GROUP<br>(GEO)<br>GEO FILE No.: 16-095<br>DATE: October 2017 | FIGURE<br>No. 1 |


# Proposed Light Pole Location Map

| | | |
|---|---|---|
| **Baldwin Hills Recreation Center**<br>5401 Highlight Place<br>LOS ANGELES, CALIFORNIA | BUREAU OF ENGINEERING<br>GEOTECHNICAL ENGINEERING GROUP<br>(GEO)<br>GEO FILE No.: 16-095<br>DATE: October 2017 | FIGURE<br>No. 2 |

# Appendix A

**Geotechnical Professionals, Inc.**

**Data Report**

**dated October 3, 2017**

GPI GEOTECHNICAL PROFESSIONALS INC.

October 3, 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
Baldwin Hills Recreation Center Sports Lighting Project
5401 Highlight Place
Los Angeles, California
Contract No. C-121601, TOS No. 16-095
Work Order No. E170501D
GPI Project No. 2500.08I

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. 16-095 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 21 to 21½ feet below site grades. The locations of the subsurface explorations were selected by GEO and marked in the field with 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:

- 17 Moisture and Density (ASTM D 2216)
- 4 Percent Passing No. 200 Sieve (ASTM D 1140)



5736 Corporate Avenue • Cypress, CA 90630 • (714) 220-2211 • FAX (714) 220-2122

- 2 Full Sieve Analyses (ASTM D 6913)
- 2 Atterberg Limits (ASTM D 4318)
- 3 sets Direct Shear Tests (ASTM D 3080)
- 2 Unconsolidated Undrained Triaxial Test (ASTM D 2850)
- 1 Expansion Index (ASTM D 4829)

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.

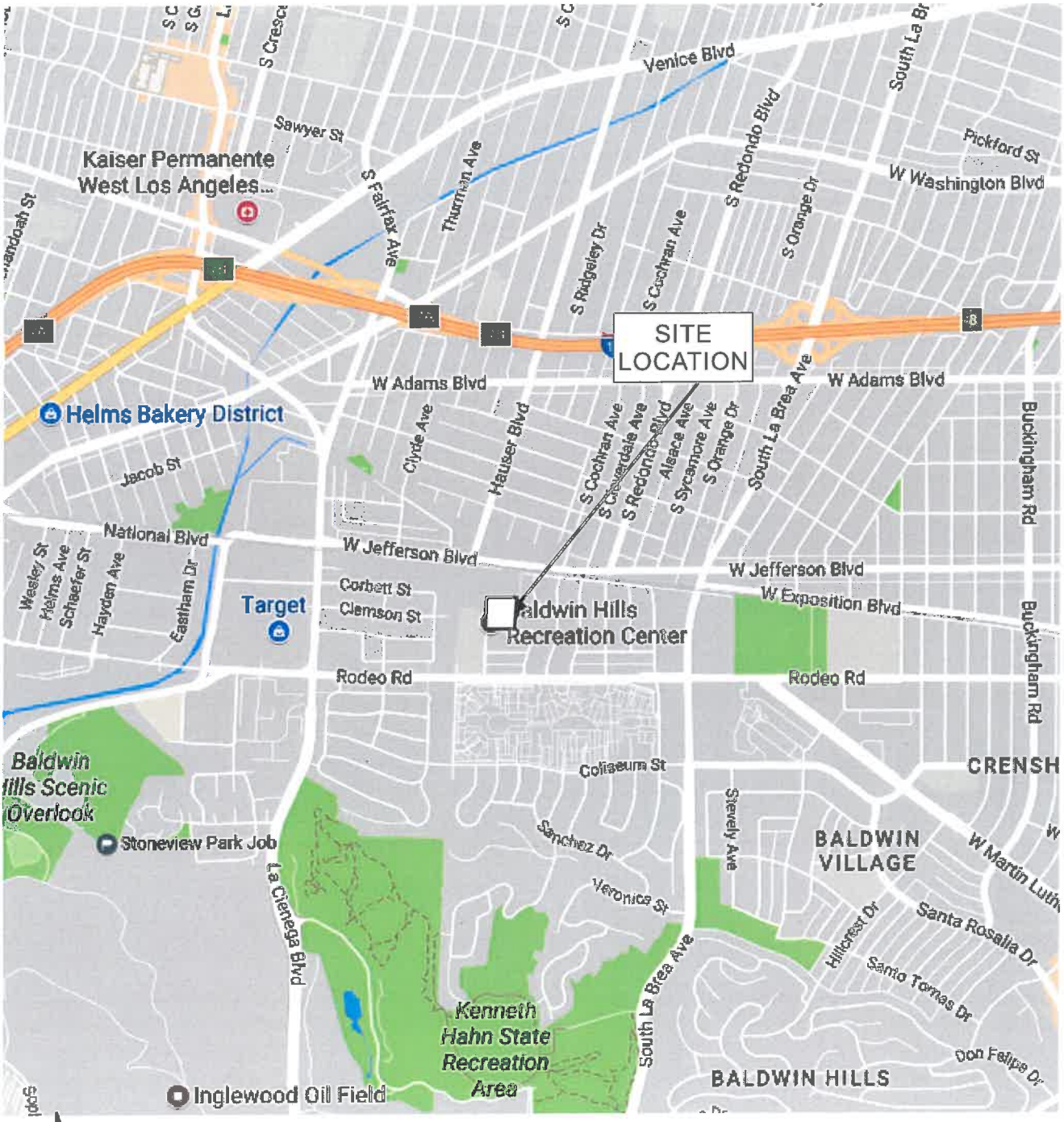
We appreciate the opportunity of offering our services on this project. Do not hesitate to call us if you have any questions on the contents of this report.

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


Donald A. Cords, G.E.
Principal

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

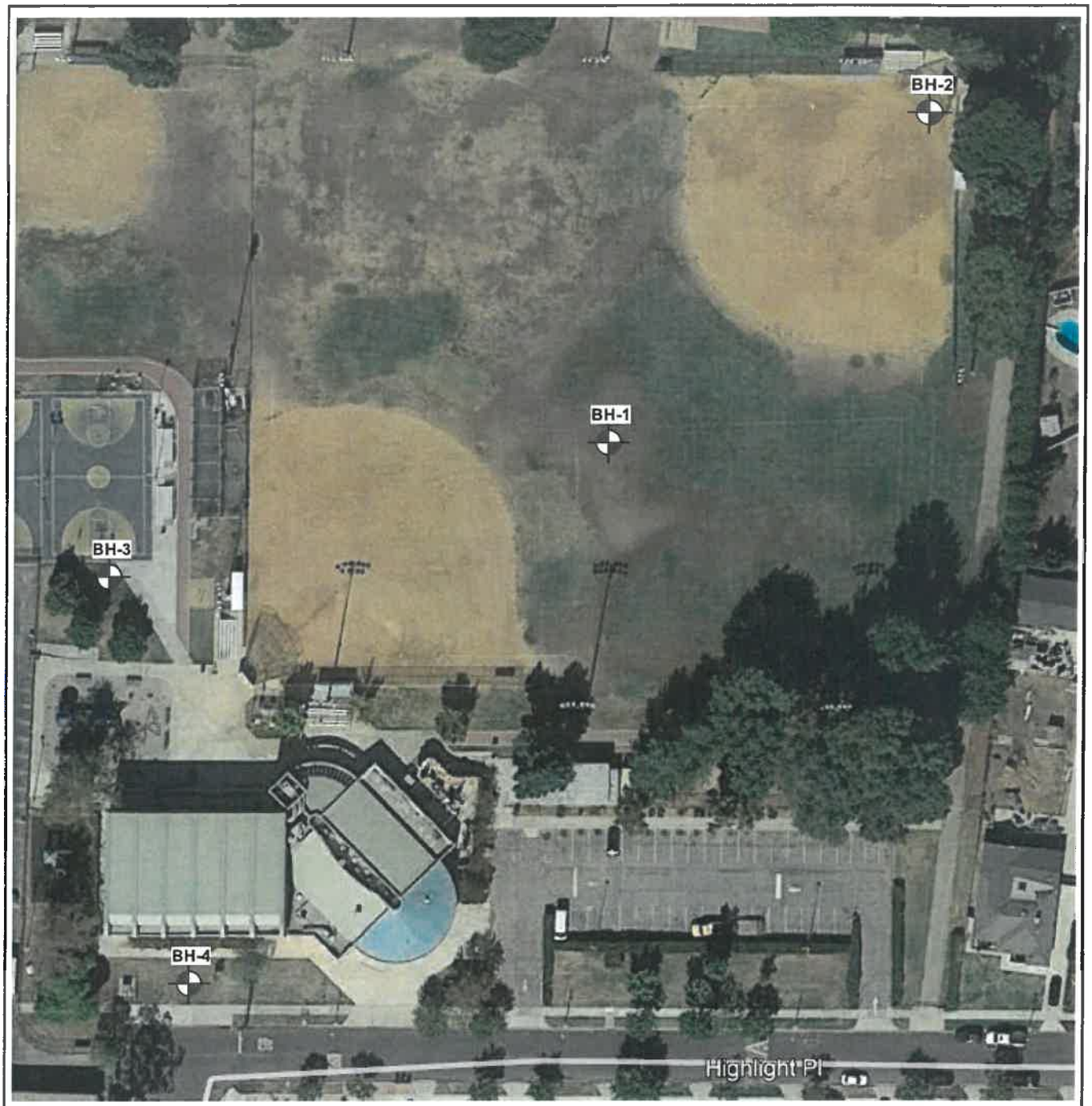
GEOTECHNICAL PROFESSIONALS, INC.

BALDWIN HILLS RECREATION CENTER (16-095)

GPI PROJECT NO.: 2500.08I | SCALE: 1" = 2000'

# SITE LOCATION MAP

FIGURE 1




N

0 80 80 FEET

EXPLANATION

BH-4 APPROXIMATE LOCATION AND NUMBER OF EXPLORATORY BORINGS

BASE PLAN REPRODUCED FROM GOOGLE MAPS © 2017

GPI GEOTECHNICAL PROFESSIONALS, INC.

BALDWIN HILLS RECREATION CENTER (16-095)

GPI PROJECT NO.: 2500.08I | SCALE: 1" = 80'

# SITE LOCATION MAP

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 21 to 21½ feet below the existing ground surface. 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 |
|---|---|---|---|---|---|
| BH-1 | 33° 1' 27.42" | -118° 21' 50.01" | 374078.90 | 3765687.14 | 11S |
| BH-2 | 33° 1' 29.01" | -118° 21' 50.01" | 374139.11 | 3765735.58 | 11S |
| BH-3 | 33° 1' 26.44" | -118° 21' 53.05" | 374000.57 | 3765657.90 | 11S |
| BH-4 | 33° 1' 24.73" | -118° 21' 52.42" | 374015.77 | 3765592.71 | 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
GS – Full Sieve Analysis
UU – Unconsolidated Undrained Triaxial Test
#200 – Percent Passing No. 200 Sieve
AL – Atterberg Limits
EI – Expansion Index

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) |
|---|---|---|---|---|---|---|---|---|
| | | | | | B | 0 | Fill: **SANDY SILT (ML)** light grey brown, slightly moist to dry, hard | |
| | 0 | 13.7 | 75 | 48 | D | | | 110 |
| | 0 | | | 11 | S | 5 | Natural: **SILTY SAND (SM)** light brown, slightly moist, medium dense | |
| #200 | 0 | 9.7 | 89 | 46 | D | | **SANDY CLAY (CL)** dark brown, slightly moist, very stiff | 105 |
| | 0 | | | 14 | S | 10 | **SILTY SAND (SM)** yellow brown, moist, medium dense | |
| | | | | | | | **SANDY CLAY (CL)** dark brown, wet, stiff, with gravel | |
| | 0 | 80.5<br>147.9 | 40<br>29 | 18 | D | | **SILT (ML)** light grey, wet, soft | 100 |
| | 0 | | | 2 | S | 15 | | |
| | | | | | | | **PEAT (OL)** black, wet, soft | |
| DS | 0 | 13.1 | 108 | 56 | D | | **SAND (SP)** light brown, wet, dense, trace gravel | 95 |
| | 0 | | | 92/10" | S | 20 | @ 21 feet, with cobbles | |
| | | | | | | | Total depth 21.5 feet<br>Latitude: 34.263148<br>Longitude: -118.300251 | |

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.

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

DATE DRILLED: 9-14-17

EQUIPMENT USED: 8" Hollow Stem Auger

GROUNDWATER LEVEL: Not Encountered

GPI

PROJECT NO.: 2500.08I
BALDWIN HILLS REC CENTER

# LOG OF BORING NO. BH-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) |
|---|---|---|---|---|---|---|---|---|
| | | | | | B | 0 | Fill: **SANDY CLAY (CL)** dark grey, moist, firm | 110 |
| | 0 | | | 7 | S | | | |
| UU | 0 | 14.0 | 100 | 54 | D | 5 | @ 5 feet, hard | 105 |
| AL #200 | 0 | | | 22 | S | | **CLAYEY SAND (SC)** dark grey, moist to moist, medium dense, trace gravel | |
| | 0 | 11.4 | 103 | 33 | D | 10 | | 100 |
| | 0 | | | 5 | S | | @ 13 feet, piece of wood | |
| | | | | | | | Natural: **PEAT (OH)** black, wet, soft | |
| | 0 | 82.6 | 45 | 20 | D | 15 | **SANDY CLAY (CL)** black, wet, stiff | 95 |
| | 0 | | | 13 | S | | | |
| | 6 | 19.6 | 67 | 84/3" | D | 20 | @ 20 feet, very moist, with cobble | |
| | | | | | | | Total depth 21 feet<br>Latitude: 34.024727<br>Longitude: -118.363247 | |

SAMPLE TYPES
- [C] Rock Core
- [S] Standard Split Spoon
- [D] Drive Sample
- [B] Bulk Sample
- [T] Tube Sample

DATE DRILLED: 9-14-17

EQUIPMENT USED: 8" Hollow Stem Auger

GROUNDWATER LEVEL: Not Encountered

GPI

PROJECT NO.: 2500.08I
BALDWIN HILLS REC CENTER

# LOG OF BORING NO. BH-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) |
|---|---|---|---|---|---|---|---|---|
| | | | | | B | 0 | Fill: **CLAYEY SAND (SC)** dark grey, slightly moist, medium dense | 110 |
| #200 EI | 32 | 11.2 | 92 | 37 | D | | | |
| AL | 0 | | | 10 | S | 5 | **SANDY CLAY (CL)** dark grey, slightly moist, very stiff | |
| | | | | | | | Natural: **SANDY CLAY (CL)** dark grey, wet, stiff | 105 |
| | 1 | 43.1 | 48 | 21 | D | | **ORGANIC SILT / PEAT (OH)** black, wet, stiff | |
| | 0 | | | 5 | S | 10 | **SILTY CLAY (CL)** light grey, moist, firm | 100 |
| | | | | | | | **SILTY SAND (SM)** brown, moist, loose | |
| UU | 0 | 3.2 | 107 | 66 | D | | **SANDY CLAY (CL)** light grey, moist, stiff | |
| | | | | | | | **SAND (SP)** grey, dry, dense | |
| | 0 | | | 38 | S | 15 | | 95 |
| DS | 0 | 4.9 | 101 | 90/10" | D | | @ 17.5 feet, slightly moist, very dense | |
| | 0 | | | 50/5" | S | 20 | | 90 |
| | | | | | | | Total depth 21.5 feet<br>Latitude: 34.024010<br>Longitude: -118.364736 | |

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

DATE DRILLED: 9-14-17

EQUIPMENT USED: 8" Hollow Stem Auger

GROUNDWATER LEVEL: Not Encountered

GPI

PROJECT NO.: 2500.08I
BALDWIN HILLS REC CENTER

# LOG OF BORING NO. BH-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) |
|---|---|---|---|---|---|---|---|---|
| | | | | | B | 0 | Fill: **SANDY CLAY (CL)** light brown, slightly moist, stiff | |
| | | | | 9 | S | | | |
| | | | | | | | Natural: **ORGANIC SILT (OH)** black, wet, stiff | |
| DS | 0 | 53.1 | 54 | 20 | D | 5 | | 105 |
| GS | 0 | | | 40 | S | | **SAND (SP)** brown, dry, dense, trace gravel and cobbles | |
| | 0 | 2.8 | | 50/5" | D | 10 | @ 10 feet, very dense | 100 |
| GS | 0 | | | 50/3" | S | | | |
| | 0 | 3.4 | 96 | 50/3" | D | 15 | | 95 |
| | 0 | | | 61 | S | | | |
| | | | | | | | **SANDY CLAY (CL)** grey, slightly moist, hard | |
| | 0 | 11.6 | 117 | 80 | D | 20 | | 90 |
| | | | | | | | Total depth 21 feet<br>Latitude: 34.023424<br>Longitude: -118.364562 | |

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

DATE DRILLED: 9-14-17

EQUIPMENT USED: 8" Hollow Stem Auger

GROUNDWATER LEVEL: Not Encountered

GPI

PROJECT NO.: 2500.08I
BALDWIN HILLS REC CENTER

# LOG OF BORING NO. BH-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.

## ATTERBERG LIMITS

Liquid and plastic limits were determined for selected samples in accordance with ASTM D 4318. The results of the Atterberg Limits tests are presented in Figure B-1.

## 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 |
|---|---|---|---|
| BH-1 | 7.5 | Sandy Clay (CL) | 54 |
| BH-2 | 7.5 | Clayey Sand (SC) | 46 |
| BH-3 | 0-3 | Clayey Sand (SC) | 49 |
| BH-3 | 5 | Sandy Clay (CL) | 64 |

## GRAIN SIZE DISTRIBUTION

A total of two 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. The retained material was run through a standard set of sieves in accordance with ASTM D 422. The weight of soil retained on each sieve was recorded and the total dry weight was calculated. The grain size distribution data from the full sieve analyses is presented in Figure B-2. A summary of the percentages passing the No. 200 sieve (ASTM D1140) is presented below.

| BORING NO. | DEPTH (ft) | SOIL DESCRIPTION | PERCENT PASSING No. 200 SIEVE |
|---|---|---|---|
| BH-4 | 7.5 | GRAVEL (GW) with sand and silt | 10 |
| BH-4 | 12.5 | SAND (SP) with gravel and silt | 6 |

## 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 sand 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 organic silt samples were inundated for 4 hours, allowed to consolidate, and then were sheared to failure at a strain rate of 0.001 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-3 to B-5.

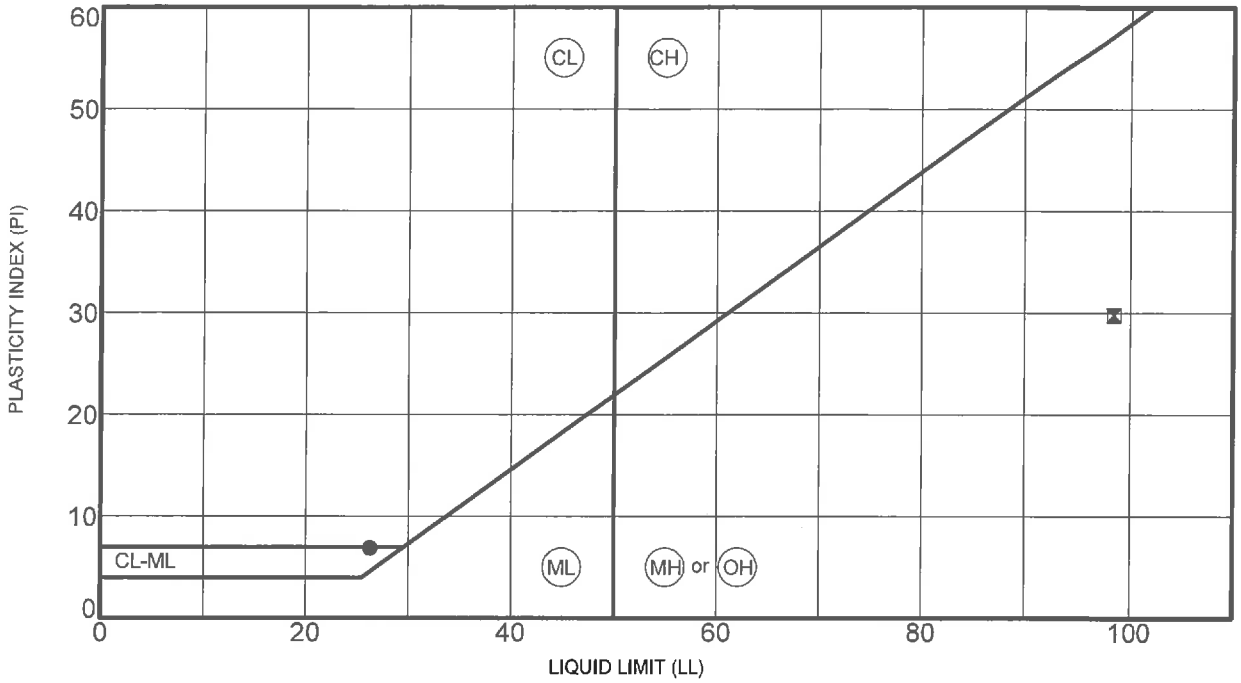
## UNCONSOLIDATED UNDRAINED TRIAXIAL TESTS

Unconsolidated undrained triaxial tests were performed on two samples of cohesive soils in accordance with ASTM D 2850. The testing was performed by A.P. Engineer on a soil samples provided by GPI. Detailed test results are presented in Figures B-6 and B-7.

## EXPANSION INDEX

One expansion index test was performed in accordance with D 4829 on a composite bulk sample, representative of the soils in the upper 3 feet of the site. The test results are presented below:

| BORING NO. | DEPTH (ft) | SOIL DESCRIPTION | EXPANSION INDEX |
|---|---|---|---|
| BH-3 | 0-3 | Sandy Clay (CL) | 41 |




| | SAMPLE LOCATION | | LL | PL | PI | Fines, % | Classification |
|---|---|---|---|---|---|---|---|
| ● | BH-2 | 7.5 | 26 | 19 | 7 | | CLAYEY SAND (SC) |
| ⊠ | BH-3 | 5.0 | 98 | 69 | 30 | | SILT (MH) |

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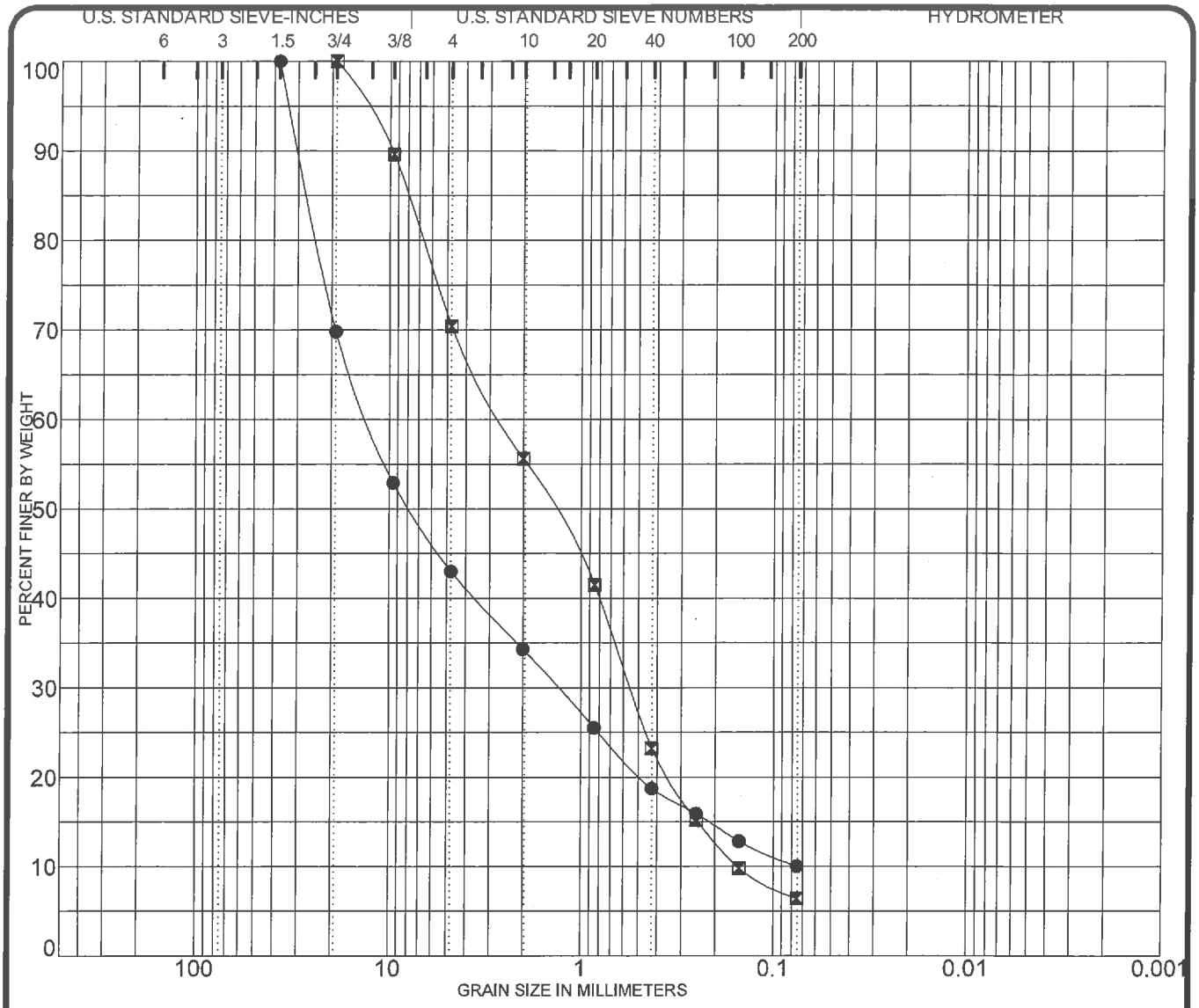
## ATTERBERG LIMITS TEST RESULTS

FIGURE B-1




| COBBLES | GRAVEL | | SAND | | | SILT OR CLAY |
|---|---|---|---|---|---|---|
| | coarse | fine | coarse | medium | fine | |

| | Sample Location | | Classification | MC% | LL | PL | PI | Cc | Cu |
|---|---|---|---|---|---|---|---|---|---|
| ● | BH-4 | 7.5 | GRAVEL (GW) with sand and silt | | | | | 1.82 | 169.5 |
| ⊠ | BH-4 | 12.5 | SAND (SP) with gravel and silt | | | | | 0.76 | 16.9 |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |

| | Sample Location | | D100 | D60 | D30 | D10 | %Gravel | %Sand | %Silt | %Clay |
|---|---|---|---|---|---|---|---|---|---|---|
| ● | BH-4 | 7.5 | 37.50 | 12.71 | 1.317 | 0.0750 | 57.0 | 33.0 | 10.0 | |
| ⊠ | BH-4 | 12.5 | 19.00 | 2.59 | 0.550 | 0.1529 | 29.6 | 64.0 | 6.4 | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

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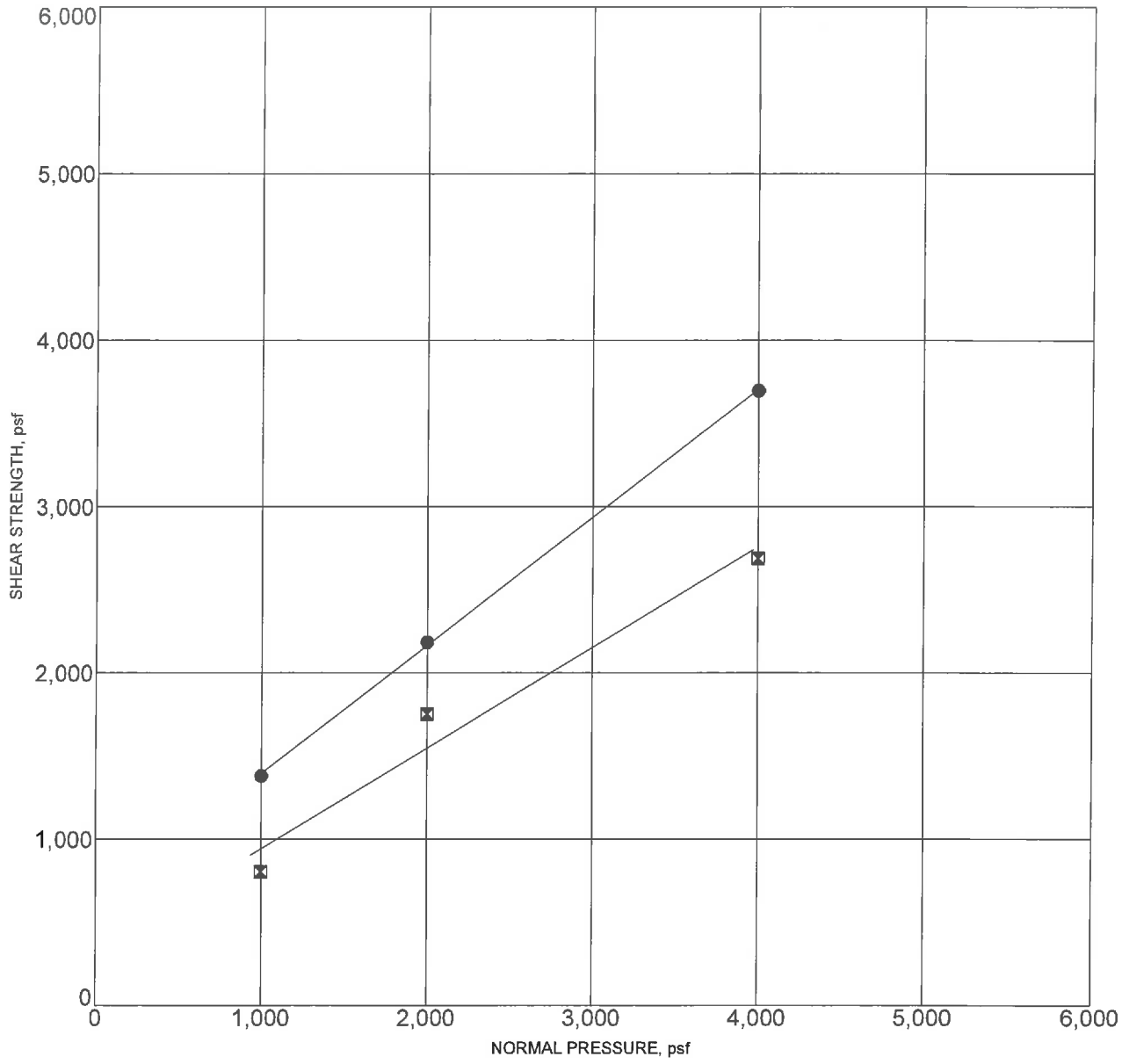
## GRAIN SIZE DISTRIBUTION

FIGURE B-2




● **PEAK STRENGTH**
*Friction Angle= 38 degrees*
*Cohesion= 624 psf*

⊠ **ULTIMATE STRENGTH**
*Friction Angle= 31 degrees*
*Cohesion= 336 psf*

| Sample Location | | Classification | DD,pcf | MC,% |
|---|---|---|---|---|
| BH-1 | 17.5 | SAND (SP) | 108 | 13.1 |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

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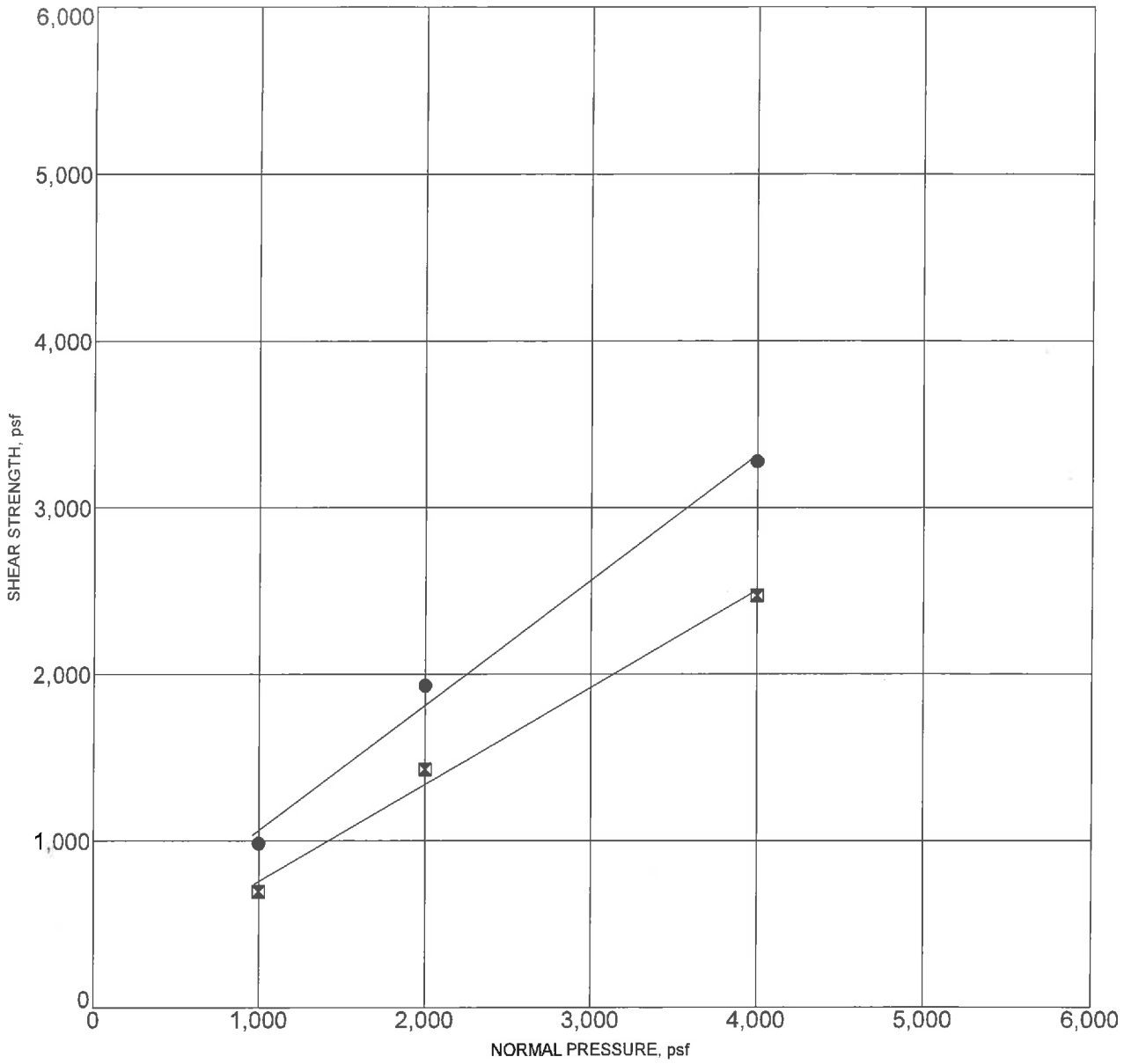
## DIRECT SHEAR TEST RESULTS

FIGURE B-3




● **PEAK STRENGTH**
*Friction Angle= 37 degrees*
*Cohesion= 312 psf*

⊠ **ULTIMATE STRENGTH**
*Friction Angle= 30 degrees*
*Cohesion= 174 psf*

| Sample Location | | Classification | DD,pcf | MC,% |
|---|---|---|---|---|
| BH-3 | 17.5 | SAND (SP) | 101 | 4.9 |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

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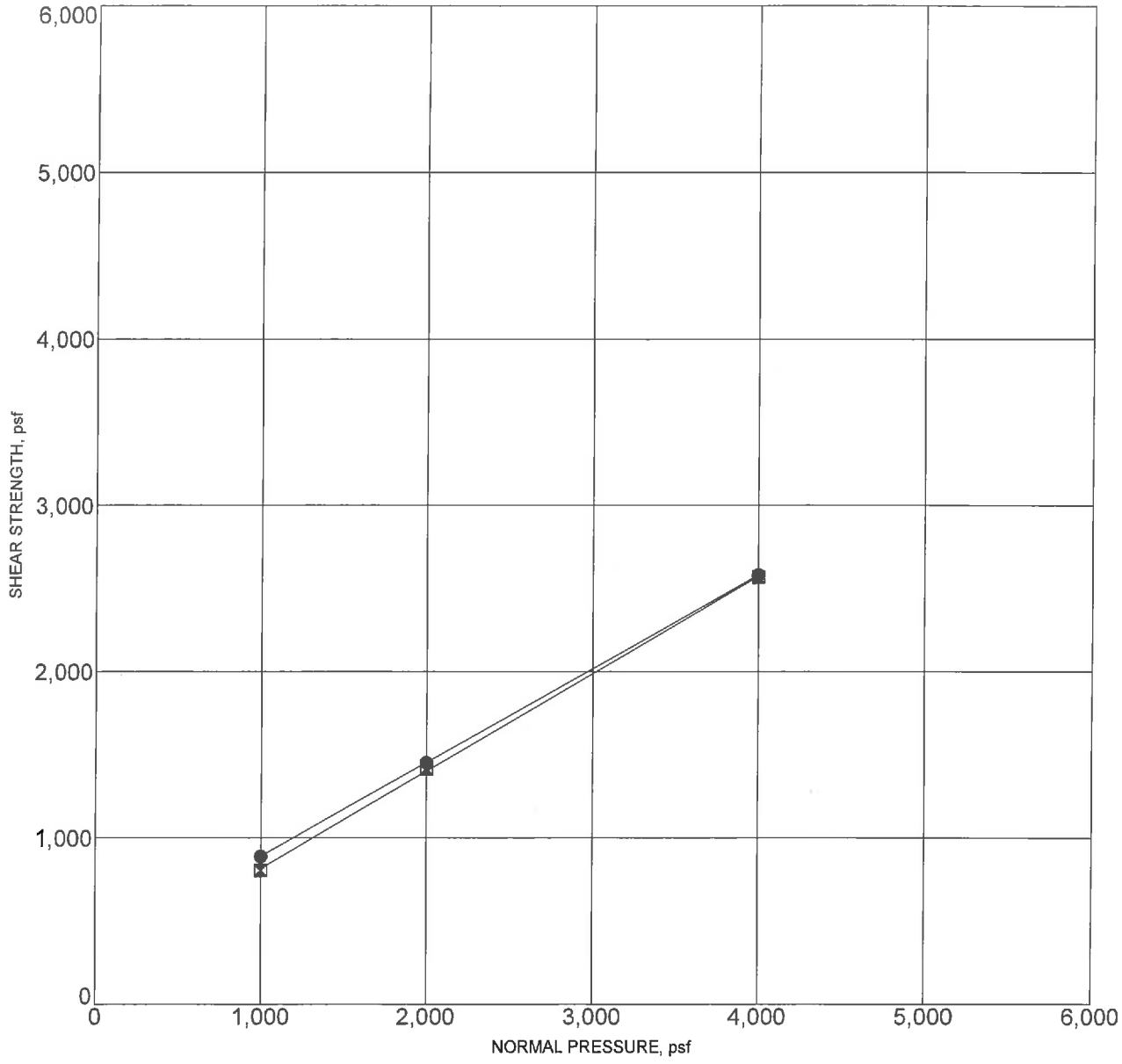
## DIRECT SHEAR TEST RESULTS

FIGURE B-4




● **PEAK STRENGTH**
*Friction Angle= 29 degrees*
*Cohesion= 324 psf*

⊠ **ULTIMATE STRENGTH**
*Friction Angle= 30 degrees*
*Cohesion= 228 psf*

| Sample Location | | Classification | DD,pcf | MC,% |
|---|---|---|---|---|
| BH-4 | 5.0 | ORGANIC SILT (OH) | 54 | 53.1 |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

PROJECT: BALDWIN HILLS REC CENTER PROJECT NO.2500.08I

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## DIRECT SHEAR TEST RESULTS

FIGURE B-5

**AP Engineering and Testing, Inc.**
DBE | MBE | SBE
2607 Pomona Boulevard | Pomona, CA 91768
t. 909.869.6316 | f. 909.869.6318 | www.aplaboratory.com

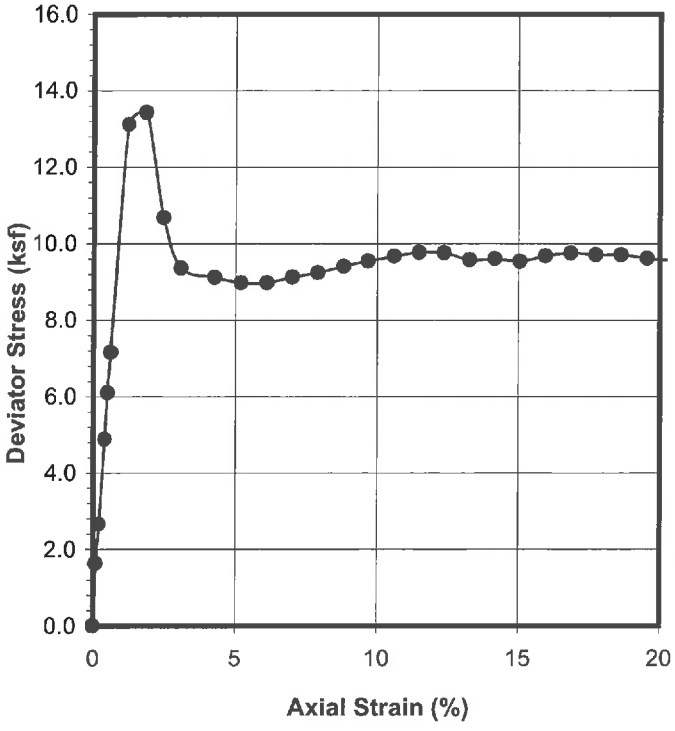
# UNCONSOLIDATED UNDRAINED TRIAXIAL TEST (UU,Q)
## ASTM D 2850

| | | | | | |
|---|---|---|---|---|---|
| Client Name: | Geotechnical Professionals, Inc. | | Tested By: | ST | Date: 09/27/17 |
| Project Name: | Baldwin Hills | | Checked by: | AP | Date: 09/28/17 |
| Project No.: | 2500.08I | | | | |
| Boring No.: | B-2 | | | | |
| Sample No.: | - | Depth (feet): 5 | | | |
| Soil Description | Sandy Clay | | Sample Type: | Mod. Cal. | |

| | | | |
|---|---|---|---|
| Sample Diameter (inch): | 2.414 | Wet Unit Weight (pcf): | 120.3 |
| Sample Height (inch): | 4.863 | Dry Unit Weight (pcf): | 107.0 |
| Sample Weight (g): | 703.09 | Moisture Content (%): | 12.4 |
| Wt. of Wet Soil+Container (g): | 850.20 | Void Ratio for Gs=2.7: | 0.57 |
| Wt. of Dry Soil+Container (g): | 772.94 | % Saturation: | 58.2 |
| Wt. of Container (g): | 148.52 | | |

## TEST DATA

| | |
|---|---|
| Cell Pressure (ksf): | 0.72 |
| Back Pressure (ksf): | 0.0 |
| Tested Total Confining Pressure (ksf): | 0.72 |
| Shear Rate (%/min): | 0.3 |
| Maximum Deviator Stress (ksf): | 13.43 |
| Ultimate Deviator Stress (ksf): | 9.56 |
| Ultimate Undrained Shear Strength (ksf): | 4.78 |
| Axial Strain @ Maximum Stress (%) | 1.85 |




| Load (lbs) | Def. (inch) | Area (sq.in) | Deviator Stress (ksf) | Axial Strain (%) |
|---|---|---|---|---|
| 0 | 0.000 | 4.58 | 0.00 | 0.00 |
| 52 | 0.005 | 4.58 | 1.63 | 0.10 |
| 85 | 0.010 | 4.59 | 2.67 | 0.21 |
| 156 | 0.020 | 4.60 | 4.89 | 0.41 |
| 195 | 0.025 | 4.60 | 6.10 | 0.51 |
| 229 | 0.030 | 4.61 | 7.16 | 0.62 |
| 422 | 0.060 | 4.63 | 13.11 | 1.23 |
| 435 | 0.090 | 4.66 | 13.43 | 1.85 |
| 348 | 0.120 | 4.69 | 10.68 | 2.47 |
| 307 | 0.150 | 4.72 | 9.36 | 3.08 |
| 303 | 0.208 | 4.78 | 9.12 | 4.28 |
| 301 | 0.253 | 4.83 | 8.98 | 5.20 |
| 304 | 0.298 | 4.88 | 8.98 | 6.13 |
| 312 | 0.341 | 4.92 | 9.13 | 7.02 |
| 319 | 0.385 | 4.97 | 9.24 | 7.91 |
| 328 | 0.429 | 5.02 | 9.41 | 8.83 |
| 336 | 0.471 | 5.07 | 9.55 | 9.69 |
| 344 | 0.516 | 5.12 | 9.68 | 10.60 |
| 351 | 0.559 | 5.17 | 9.77 | 11.50 |
| 354 | 0.602 | 5.22 | 9.76 | 12.38 |
| 351 | 0.646 | 5.28 | 9.58 | 13.28 |
| 356 | 0.689 | 5.33 | 9.61 | 14.18 |
| 357 | 0.733 | 5.39 | 9.54 | 15.06 |
| 366 | 0.776 | 5.45 | 9.68 | 15.96 |
| 373 | 0.820 | 5.50 | 9.76 | 16.85 |
| 375 | 0.863 | 5.56 | 9.71 | 17.74 |
| 379 | 0.906 | 5.63 | 9.70 | 18.64 |
| 380 | 0.951 | 5.69 | 9.62 | 19.55 |
| 382 | 0.994 | 5.75 | 9.56 | 20.45 |
| | | | | |
| | | | | |

**FIGURE B-6**

**AP Engineering and Testing, Inc.**
DBE|MBE|SBE
2607 Pomona Boulevard | Pomona, CA 91768
t. 909.869.6316 | f. 909.869.6318 | www.aplaboratory.com

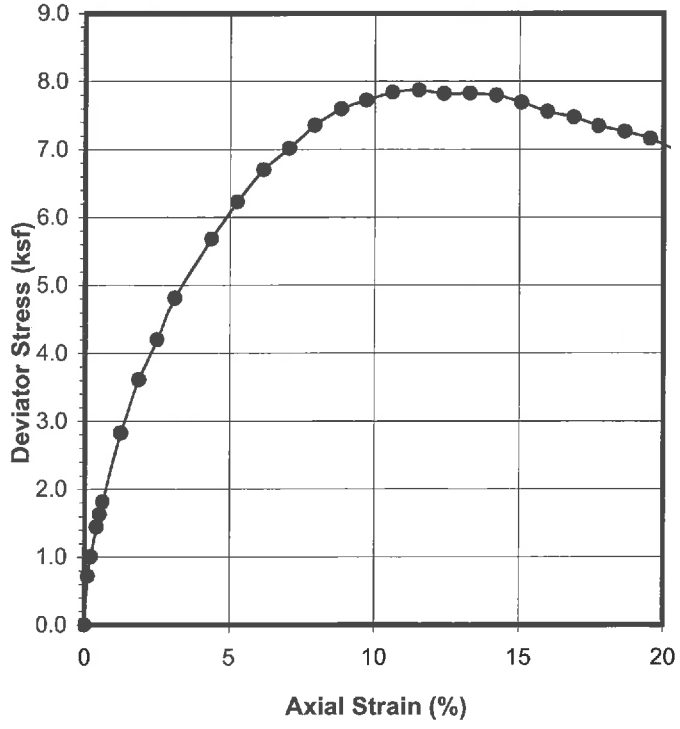
# UNCONSOLIDATED UNDRAINED TRIAXIAL TEST (UU,Q)
## ASTM D 2850

| | | | | | |
|---|---|---|---|---|---|
| Client Name: | Geotechnical Professionals, Inc. | | Tested By: | ST | Date: 09/27/17 |
| Project Name: | Baldwin Hills | | Checked by: | AP | Date: 09/28/17 |
| Project No.: | 2500.08I | | | | |
| Boring No.: | B-3 | | | | |
| Sample No.: | - | Depth (feet): 12.5 | | | |
| Soil Description | Sandy Clay | | Sample Type: | Mod. Cal. | |

| | | | |
|---|---|---|---|
| Sample Diameter (inch): | 2.415 | Wet Unit Weight (pcf): | 112.5 |
| Sample Height (inch): | 4.810 | Dry Unit Weight (pcf): | 95.6 |
| Sample Weight (g): | 650.95 | Moisture Content (%): | 17.7 |
| Wt. of Wet Soil+Container (g): | 799.17 | Void Ratio for Gs=2.7: | 0.76 |
| Wt. of Dry Soil+Container (g): | 701.68 | % Saturation: | 62.5 |
| Wt. of Container (g): | 149.68 | | |

## TEST DATA

| | |
|---|---|
| Cell Pressure (ksf): | 1.44 |
| Back Pressure (ksf): | 0.0 |
| Tested Total Confining Pressure (ksf): | 1.44 |
| Shear Rate (%/min): | 0.3 |
| Maximum Deviator Stress (ksf): | 7.87 |
| Ultimate Deviator Stress (ksf): | 6.94 |
| Ultimate Undrained Shear Strength (ksf): | 3.47 |
| Axial Strain @ Maximum Stress (%) | 11.52 |

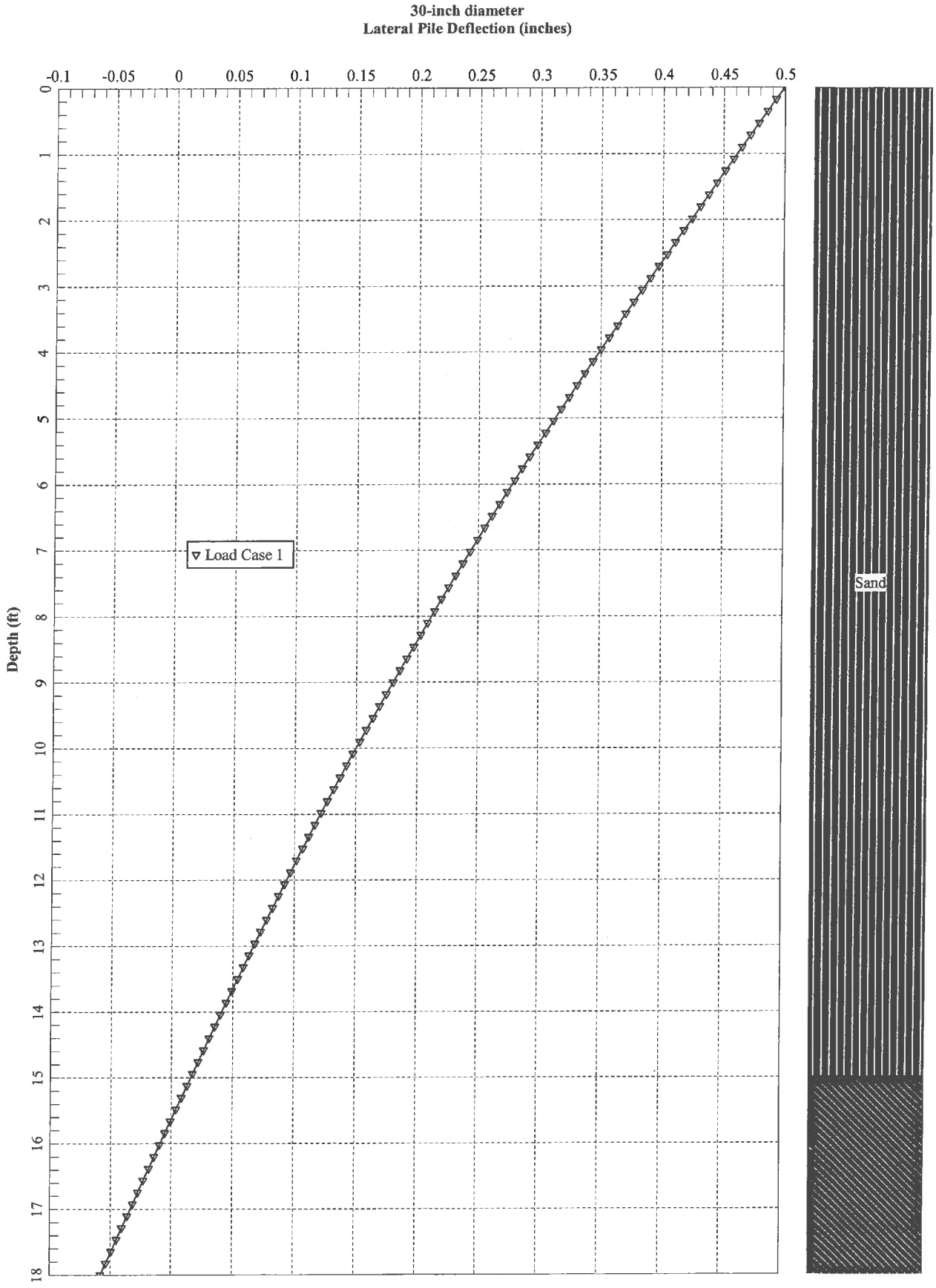


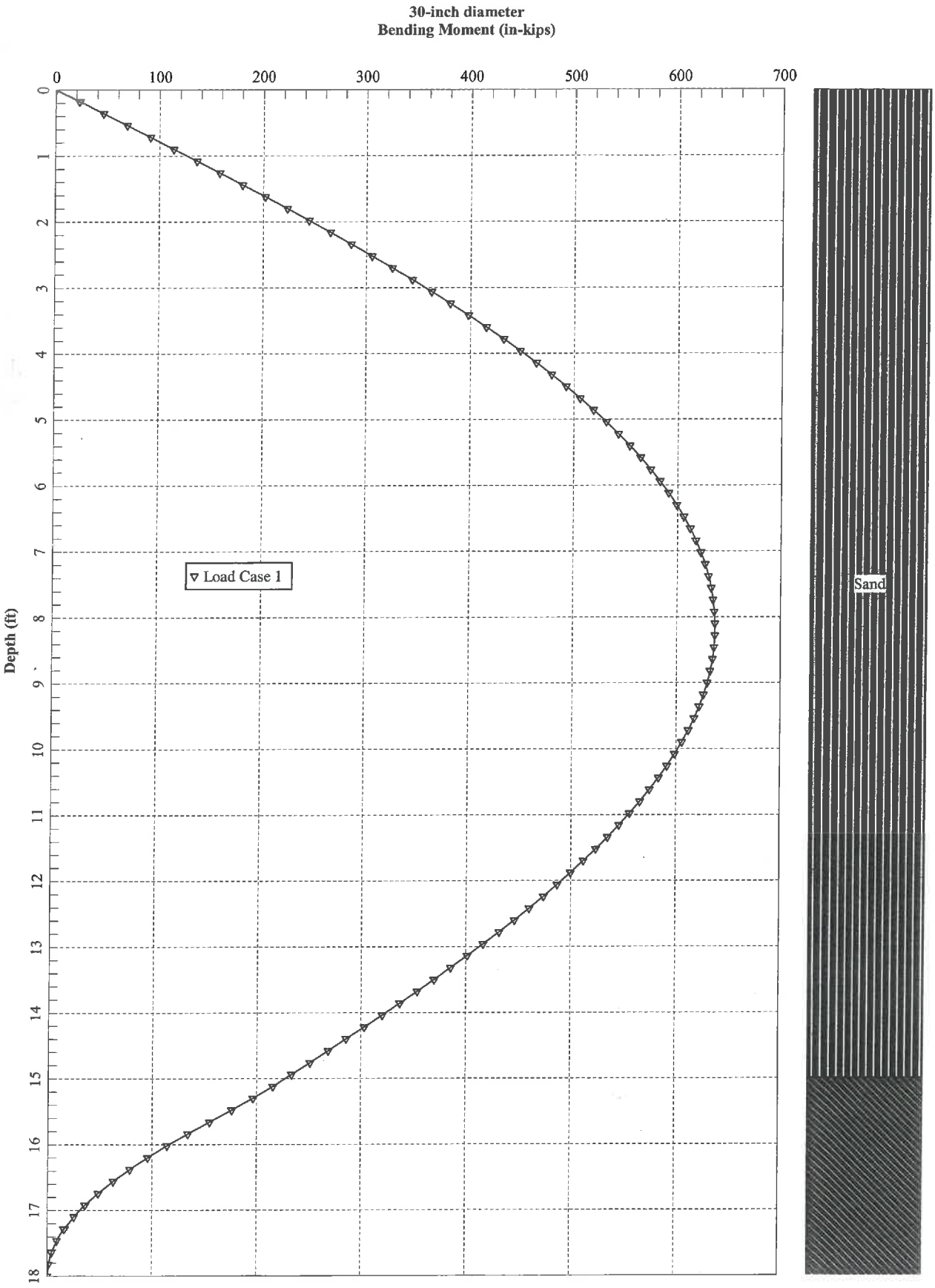

| Load (lbs) | Def. (inch) | Area (sq.in) | Deviator Stress (ksf) | Axial Strain (%) |
|---|---|---|---|---|
| 0 | 0.000 | 4.58 | 0.00 | 0.00 |
| 23 | 0.005 | 4.59 | 0.72 | 0.10 |
| 32 | 0.010 | 4.59 | 1.00 | 0.21 |
| 46 | 0.020 | 4.60 | 1.44 | 0.42 |
| 52 | 0.025 | 4.60 | 1.63 | 0.52 |
| 58 | 0.030 | 4.61 | 1.81 | 0.62 |
| 91 | 0.060 | 4.64 | 2.83 | 1.25 |
| 117 | 0.090 | 4.67 | 3.61 | 1.87 |
| 137 | 0.120 | 4.70 | 4.20 | 2.49 |
| 158 | 0.150 | 4.73 | 4.81 | 3.12 |
| 189 | 0.211 | 4.79 | 5.68 | 4.38 |
| 209 | 0.253 | 4.83 | 6.22 | 5.26 |
| 227 | 0.297 | 4.88 | 6.70 | 6.16 |
| 240 | 0.339 | 4.93 | 7.01 | 7.04 |
| 254 | 0.381 | 4.98 | 7.35 | 7.93 |
| 265 | 0.426 | 5.03 | 7.59 | 8.85 |
| 272 | 0.467 | 5.07 | 7.72 | 9.72 |
| 279 | 0.511 | 5.12 | 7.84 | 10.62 |
| 283 | 0.554 | 5.18 | 7.87 | 11.52 |
| 284 | 0.596 | 5.23 | 7.82 | 12.40 |
| 287 | 0.640 | 5.28 | 7.82 | 13.30 |
| 289 | 0.683 | 5.34 | 7.79 | 14.21 |
| 288 | 0.725 | 5.39 | 7.69 | 15.07 |
| 286 | 0.768 | 5.45 | 7.55 | 15.98 |
| 286 | 0.812 | 5.51 | 7.47 | 16.88 |
| 284 | 0.854 | 5.57 | 7.34 | 17.74 |
| 284 | 0.897 | 5.63 | 7.26 | 18.66 |
| 283 | 0.940 | 5.69 | 7.16 | 19.55 |
| 280 | 0.979 | 5.75 | 7.01 | 20.35 |
| 280 | 1.020 | 5.81 | 6.94 | 21.21 |
| | | | | |

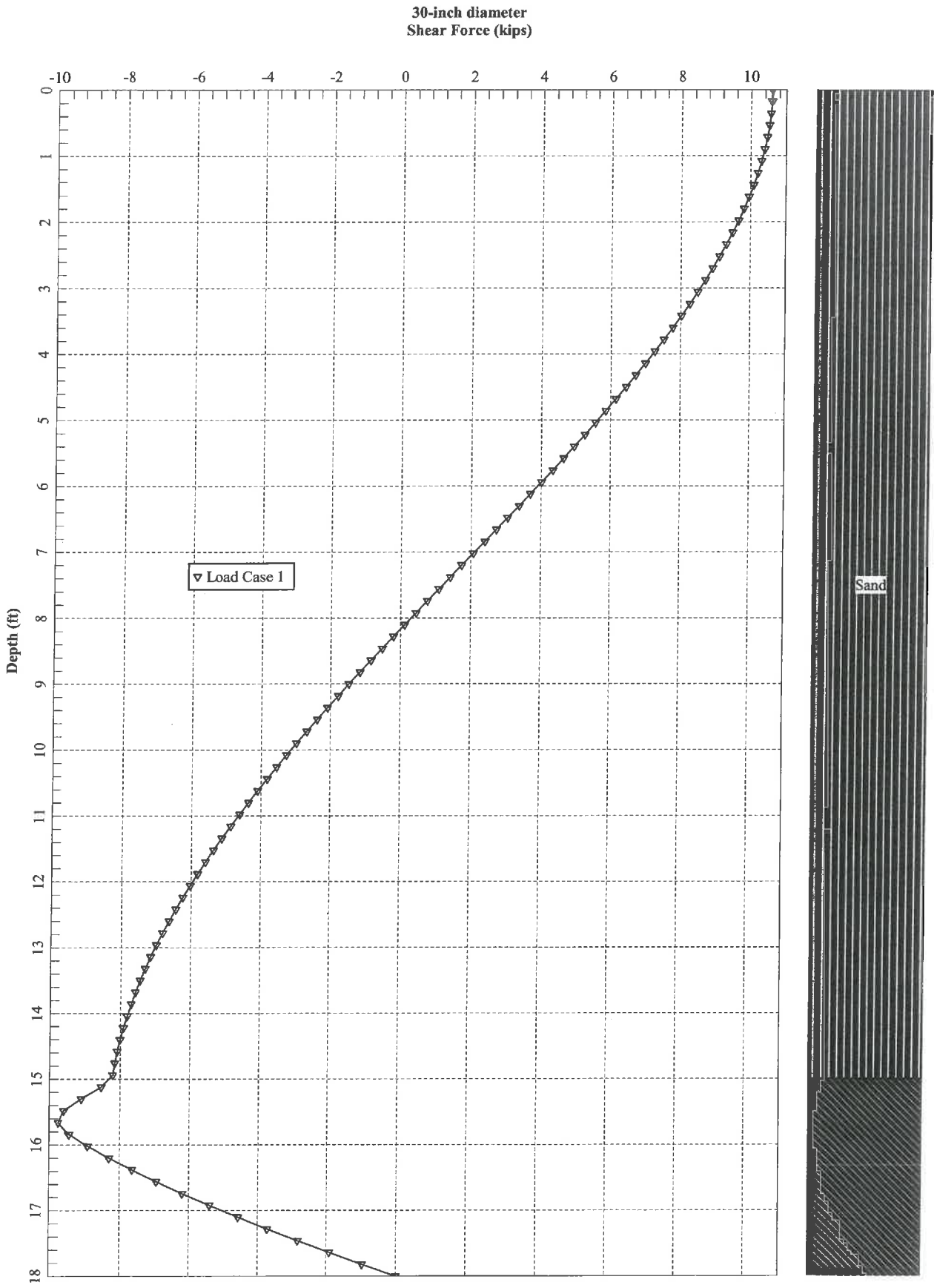
FIGURE B-7

# Appendix B

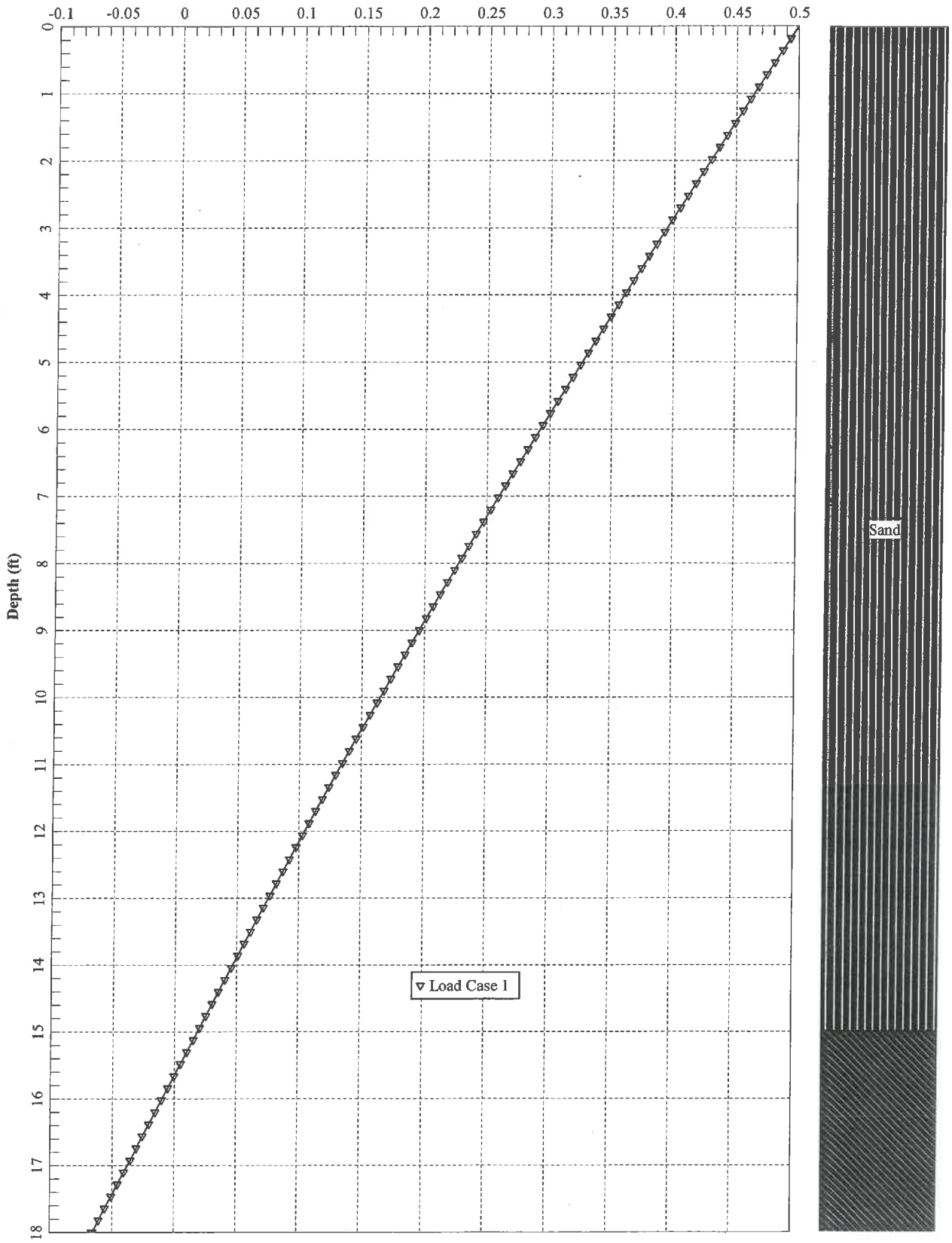
## LPILE Results

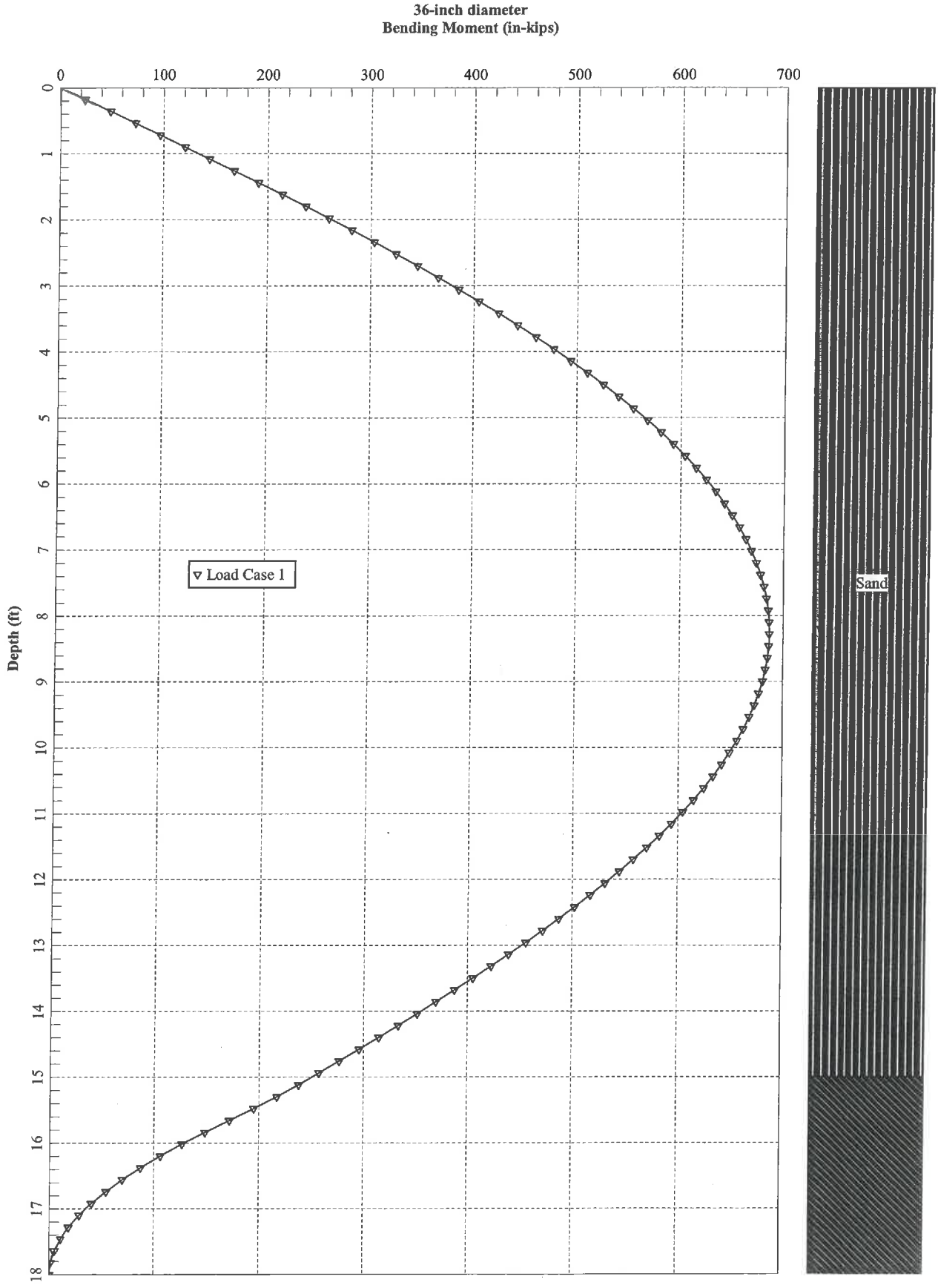

30-inch diameter
Lateral Pile Deflection (inches)
-0.1
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
0.35
0.4
0.45
0.5
Depth (ft)
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
Load Case 1
Sand

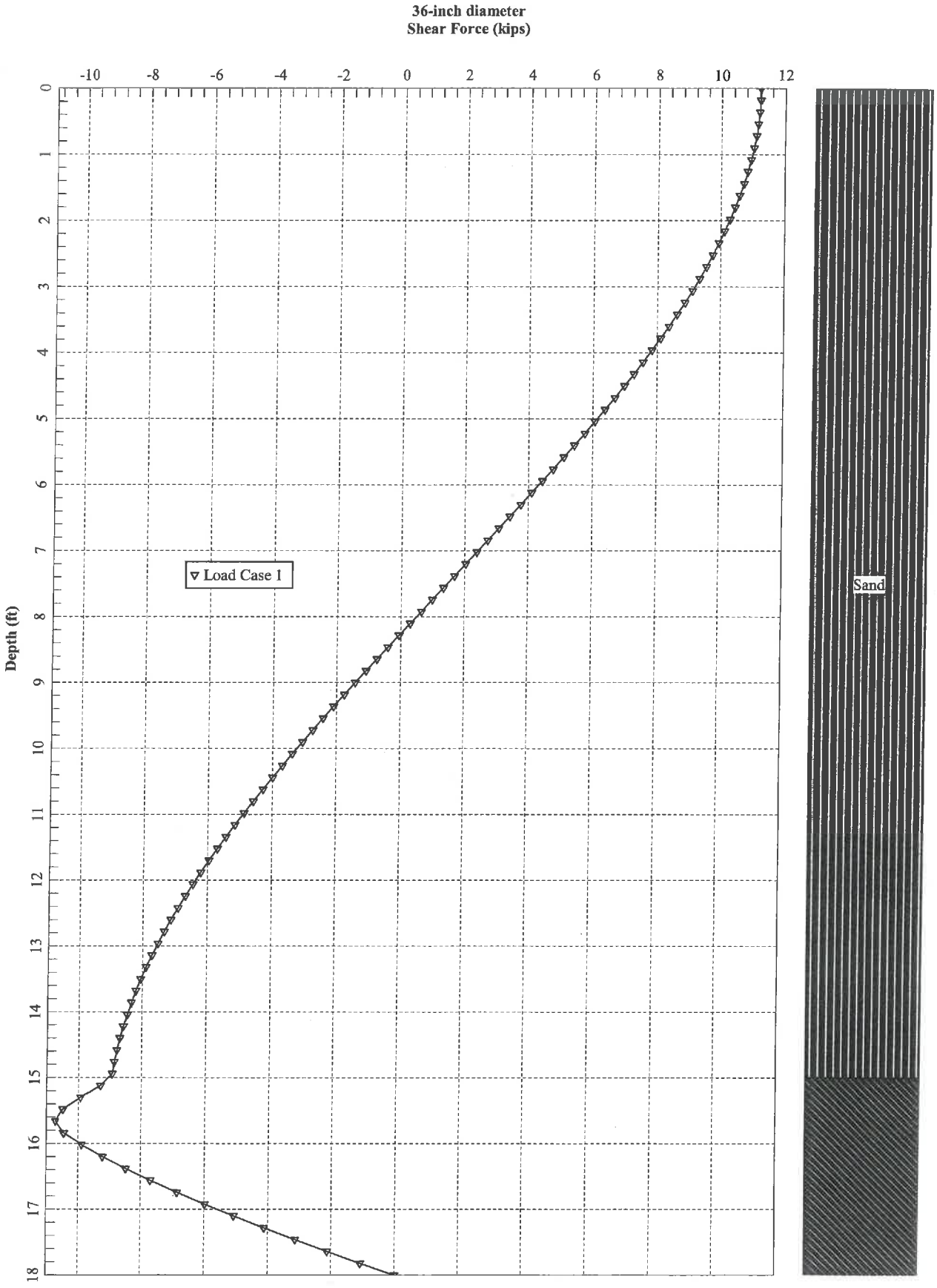

30-inch diameter
Bending Moment (in-kips)
0
100
200
300
400
500
600
700
Depth (ft)
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
Load Case 1
Sand


30-inch diameter
Shear Force (kips)
-10
-8
-6
-4
-2
0
2
4
6
8
10
Depth (ft)
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
Load Case 1
Sand

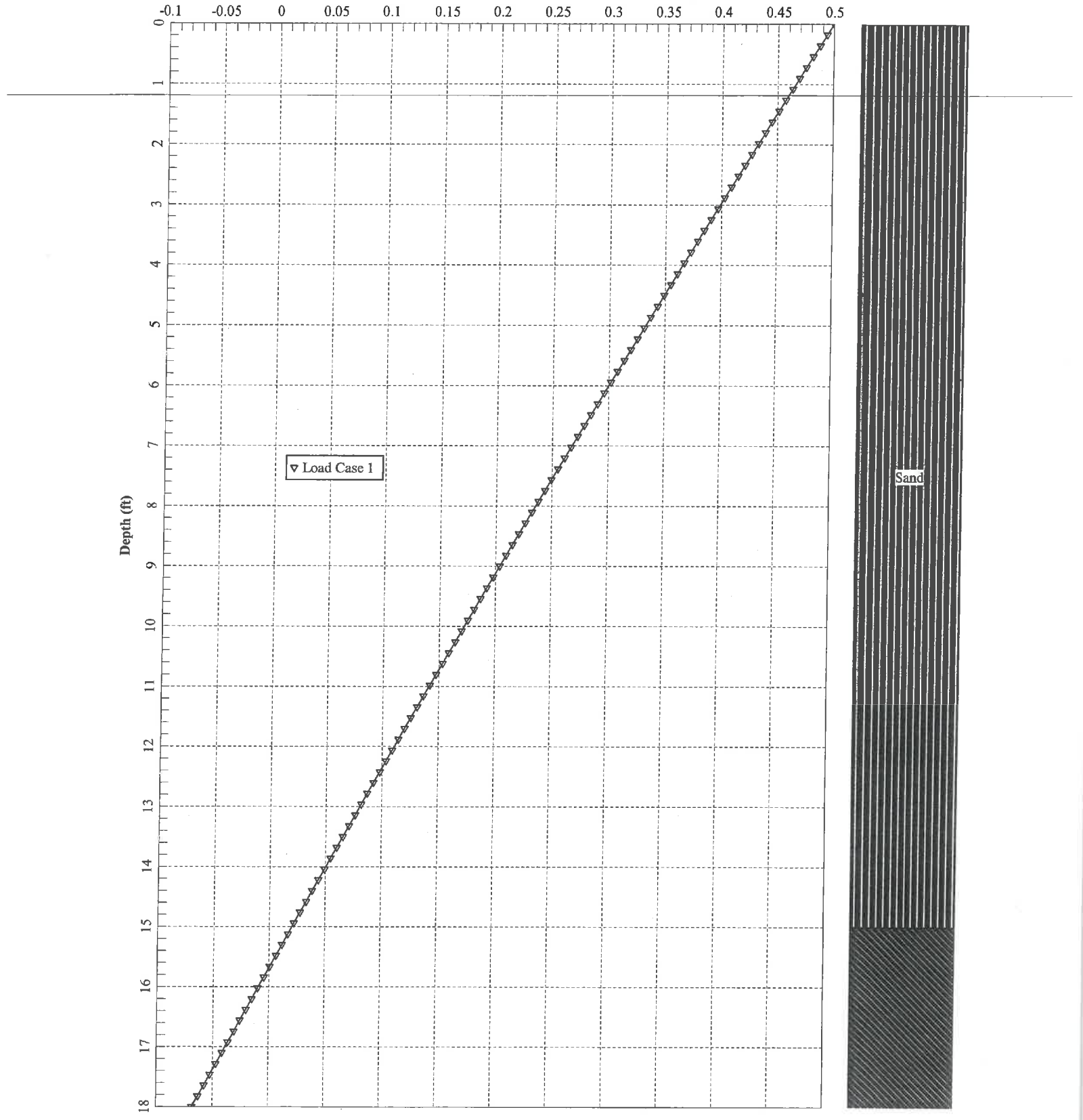
**36-inch diameter**
**Lateral Pile Deflection (inches)**

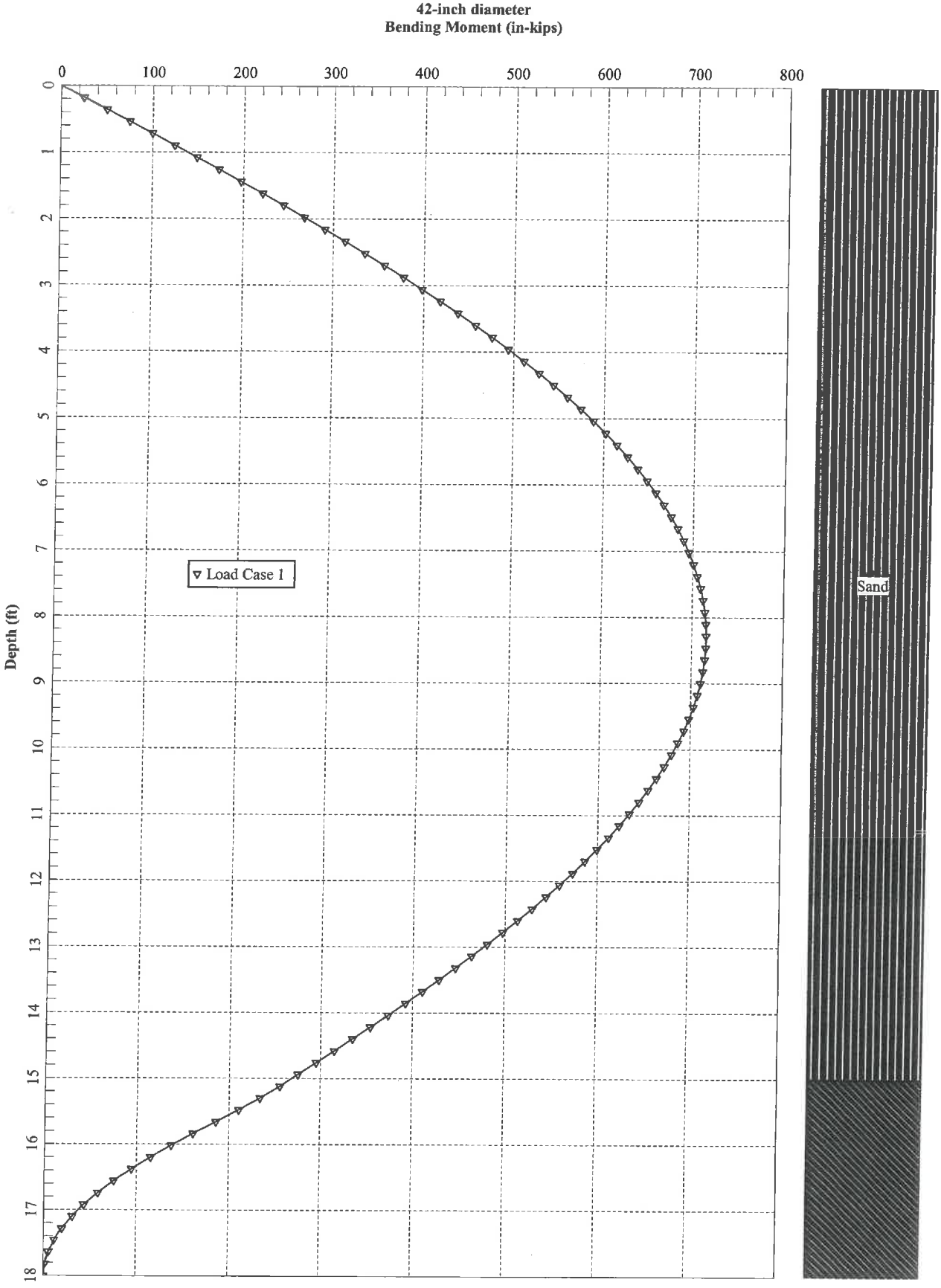


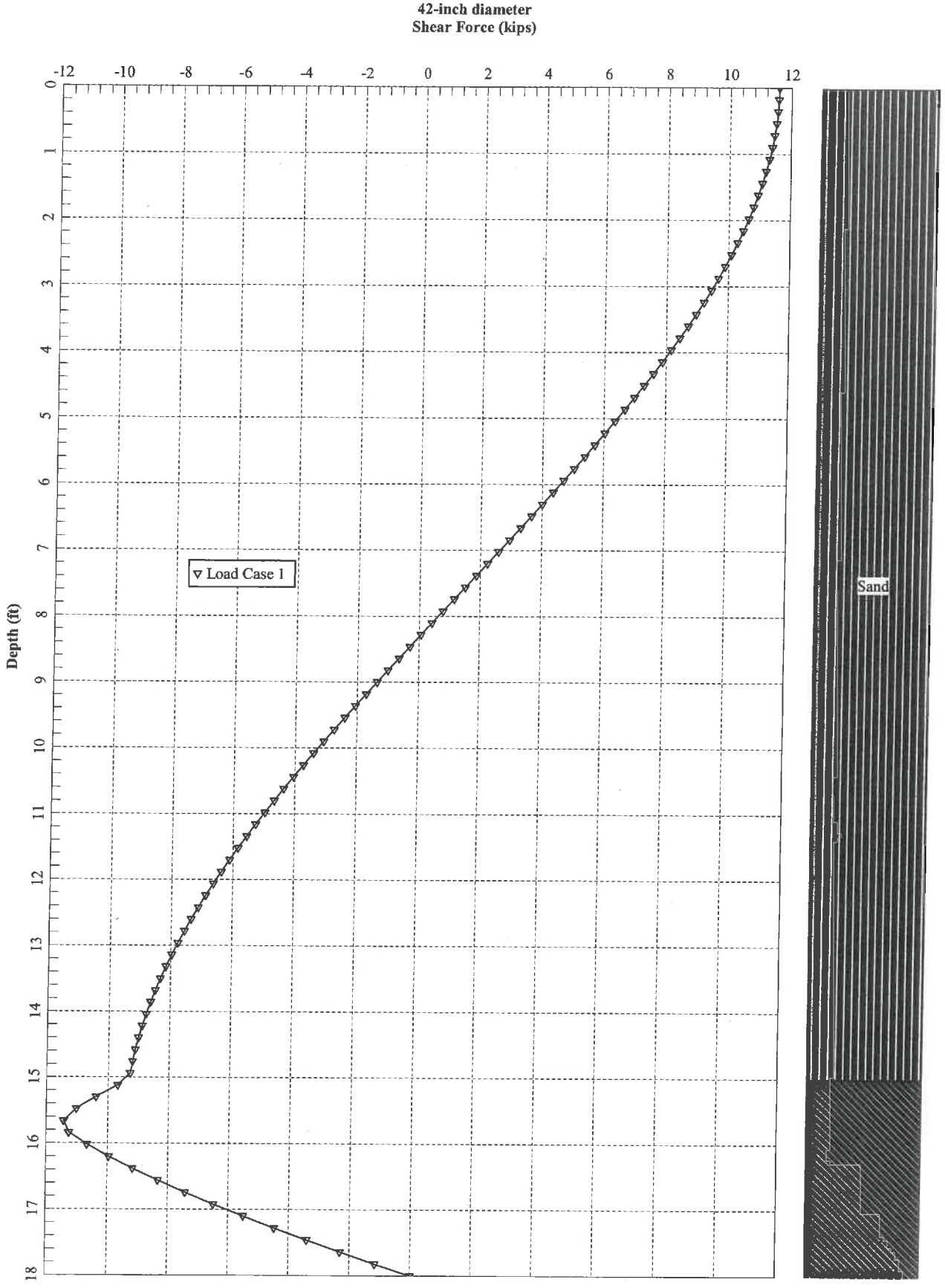

36-inch diameter
Bending Moment (in-kips)
0
100
200
300
400
500
600
700
Depth (ft)
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
Load Case 1
Sand


36-inch diameter
Shear Force (kips)
-10
-8
-6
-4
-2
0
2
4
6
8
10
12
Depth (ft)
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
Load Case 1
Sand

**42-inch diameter**
**Lateral Pile Deflection (inches)**




42-inch diameter
Bending Moment (in-kips)
0
100
200
300
400
500
600
700
800
Depth (ft)
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
Load Case 1
Sand


42-inch diameter
Shear Force (kips)
-12
-10
-8
-6
-4
-2
0
2
4
6
8
10
12
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
Depth (ft)
Load Case 1
Sand

Baldwin Hills Recreation Center Sports Field Lighting (W.O.# E170501)
Change Order Log

Attachment No. 2

| NO | SCOPE OF OF WORK | CHANGE ORDER AMOUNT | TYPE |
|---|---|---|---|
| 1 | Adjustment of labor time | $ 4,864.00 | Additional scope |
| 2 | The costs associated with the additional work performed at Baldwin Hills Recreation Center due to insufficient existing conditions at the switchboard behind home plate.<br>There are both 3- phase and single-phase circuits going out of the pole to existing retrofit pole locations.<br>The lighting system was designed to be compatible with an existing 3-phase system.<br>Seven of the leven existing sports poles are wired single phase and the remaining 3-phase.<br>Electro is now required to increase breaker sizes at the switchboard per the load calculations for P3, P5, P7, P11, and P12.<br>In addition, Electro will need to rework the existing wiring inside the main switchboard from single phase to 3-phase, split existing circuits, re-organize and relabel circuits to their appropriate designation for future maintenance needs. | $ 4,043.00 | Additional scope |
| 3 | The costs associated with the additional work request at Baldwin Hills Recreation Center due to existing rusting bullhorns at the basketball courts.<br>Demo the existing arms, purchase and procure new galvanized bullhorns and re-install new LED fixtures once bullhorns are replaced. | $ 5,589.00 | Additional scope |
| | Total Amount: | $ 14,496.00 | |

| SUMMARY BY TYPE | AMOUNT | Percentage |
|---|---|---|
| additional scope | $ 14,496.00 | 2.9% |
| Total Amount: | $ 14,496.00 | 2.9% |