



Appendix G-1

Geotechnical Investigation Report



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Lockhart Solar PV II Project

San Bernardino County, CA

September 24, 2021

PREPARED FOR:

Lockhart Solar PV II, LLC

PREPARED BY:

Westwood

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San Bernardino County, CA



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Attachments

Exhibits

- Exhibit 1: Geotechnical Investigation Overview
- Exhibit 2: USGS Topographic Map
- Exhibit 3: Local Soils Map
- Exhibit 4: Local Geology Map
- Exhibit 5: Earthquake and Fault Map
- Exhibit 6: Seismic Hazard Map

Appendices

- Appendix A: Soil Boring Logs
- Appendix B: Electrical Resistivity Test Results
- Appendix C: Laboratory Testing Reports
- Appendix D: Pile Load Testing Report
- Appendix E: LPile Lateral Calibration Curves

Executive Summary

Westwood Professional Services (Westwood) is pleased to present this geotechnical investigation report to Lockhart Solar PV II, LLC for the proposed Lockhart Solar PV II Project (Project) located in San Bernardino County, California. The scope of work for this investigation included subsurface exploration, pile load testing, field and laboratory testing, engineering analysis, and preparation of this report. The geotechnical investigation has revealed no subsurface conditions that would preclude development of the Project.

The Project Site is located within a seismically active area of California, with one mapped fault located near the northeast boundary of the Project Site. The Project Site also lies outside of, but adjacent to, an Alquist-Priolo fault zone, where surface rupture may be expected. There are several additional active faults and seismic zones within 10 miles of the Project Site, and several magnitude 4.0+ earthquakes have occurred within the last 50 years that would have been expected to be felt at the Project Site. The design of structures on the Project Site should account for seismic loads in accordance with the California Building Code.

Based on the information obtained from soil borings performed in the project area, the subsurface conditions predominately consist of medium dense to dense silty sand and poorly graded sand with variable amounts of silt and clay. Groundwater was not observed at any of the borings to a maximum depth of up to 51.5 feet and is generally not expected to impact Project design or construction, although seasonal fluctuations in groundwater are expected.

The shallow sand in the project area is generally considered adequate subgrade for access roads and foundations, and may be used as fill for general site grading within the project area, provided the compaction recommendations in this report are followed. The moisture content of the soil within the project area may be dry of optimum during construction and application of additional water may be required to achieve adequate compaction.

Driven pile foundations are generally feasible to support the photovoltaic (PV) racking systems. During the pile load testing investigation, no test piles encountered refusal prior to their target depth. In general, the low electrical resistivity values measured within the project area and in the laboratory indicate a corrosive environment to steel piles, although the generally dry soil conditions will mitigate some of the corrosive effects. Corrosion of steel and concrete foundations should be considered by the structural engineer during final design.

Shallow spread footings and mat foundations shall bear a minimum 1 foot below the ground surface, and the subgrade should be scarified to a depth of 1 foot below bottom of foundation, moisture conditioned, and re-compacted in maximum 12 inch thick loose lifts to 92% of the modified Proctor maximum dry density (ASTM D1557).

This executive summary should be read in context of the entire report for full understanding of the subsurface conditions encountered, as well as design and construction recommendations.

1.0 Introduction

This report presents the findings of the geotechnical investigation conducted by Westwood Professional Services, Inc. (Westwood) for the proposed Lockhart Solar PV II Project (Project). The Project consists of photovoltaic (PV) modules and the associated civil and electrical infrastructure and a battery energy storage system (BESS). The primary focuses of this report are earthwork considerations, access roads, and foundations for the PV racking and ancillary electrical equipment. The services provided by Westwood were in general conformance with the scope of work and assumptions outlined in project work order LS-01, dated December 8, 2020. This report is intended for exclusive use by Lockhart Solar PV II, LLC to support foundation, civil, and electrical design efforts for the proposed Lockhart Solar PV II Project.

The Project is located in San Bernardino County, California, approximately 20 miles northwest of Barstow and just west of Harper Lake. The Project Site is adjacent to the existing SEGS VIII and IX Solar Thermal Power Plants and is largely sited on land previously approved by the California Energy Commission for development of the SEGS X solar thermal power facility, although construction of SEGS X was initiated, halted and never resumed in the early 1990s. The Project Site is approximately 755 acres and primarily consists of a relatively flat, previously disturbed land with miscellaneous concrete foundations, various electrical lines and poles, as well as existing facilities within the Shared Facilities Area.

For the purposes of this report, the “project boundary or project area” included in the investigation is consistent with the SEGS X facility boundary (approximately 600-acres) and excludes the portion of the Project Site on its southern end referred to as the Shared Facilities Area and any areas outside the existing SEGS X property fence line. While the Project Site, as a whole, is discussed in this report as it relates to regional geology and seismicity, Westwood did not include the Shared Facilities Area as part of the geotechnical field investigation. In 1987, Applied Geotechnical Engineering, Inc. prepared a Geotechnical Engineering Study for proposed SEGS facilities under California Energy Commission (CEC) jurisdiction. The SEGS facilities were approved by the CEC, and construction of the Shared Facilities Area occurred as part of SEGS VIII and IX facilities construction in the early 1990s. Existing facilities in the Shared Facilities Area include an O&M building, warehouse, employee building, switchyard, other supporting facilities, electrical transmission infrastructure, and compacted access roads. Thus, the Shared Facilities Area has incurred comprehensive severe surface disturbance over the past 30 years as part of the two operational solar thermal facilities. The Shared Facilities Area is also part of the County-approved Lockhart Solar I Facility site (Conditional Use Permit [CUP] Project #201900125; 2019) and includes the permitted, but not yet constructed, collector substation and battery energy storage system (BESS) for Lockhart Solar I Facility, BESS for SEGS IX (California Energy Commission [CEC] permitted in 2020), and would include the BESS for the Project. As geotechnical conditions within the Shared Facilities Area were previously reviewed as part of the SEGS VIII or SEGS IX and X CEC certifications, and were not included in the geotechnical field investigation for the Project.

Refer to Exhibits 1 and 2 for Project location.

2.0 Methods

A geotechnical exploration program consisting of soil borings and laboratory testing was performed by Westwood. Choice Drilling of Pacoima, CA was retained by Westwood to perform soil borings with standard penetration tests (SPT). Westwood performed laboratory index testing and Soil Engineering Testing (SET) of Bloomington, MN performed thermal resistivity, Modified Proctor, and California Bearing Ratio (CBR) testing. A Westwood geotechnical representative coordinated the field work and laboratory testing, logged the soil borings, performed pile load tests and electrical resistivity tests, and prepared this report. The geotechnical field investigation was performed between December 14th and December 19th, 2020, and consisted of the following:

- Conducting soil borings with SPT sampling at 19 locations (B-01 through B-11, B-13 through B-20) to a target depth of 16.5 ft below ground surface (bgs).
- Conducting a soil boring with SPT sampling at one location (B-12) to a depth of 51.5 ft bgs.
- Classifying and collecting soil samples from the soil borings for laboratory testing.
- Conducting electrical resistivity tests at seven locations.
- Observing the installation of 28 test piles.
- Performing 24 axial uplift load tests, 4 axial compression load tests, and 24 lateral load tests.

Geotechnical test locations are shown on Exhibit 1. Test locations were selected by Westwood after a review of the site accessibility, proposed layout, and local geologic mapping to provide spatial coverage of the project area and cover the anticipated subsurface variation. All test locations were surveyed and staked by a Westwood representative with a hand-held GPS, and as-built coordinates are provided on the associated boring logs (Appendix A) and electrical resistivity test reports (Appendix B). Refer to the Pile Load Testing Report in Appendix D for additional information on the methods and results of the pile load test program within the project area.

2.1 Soil Borings

Soil borings were drilled using hollow stem auger drilling techniques, and soil samples were obtained using an automatic hammer and split-spoon samplers in general accordance with ASTM D1586 (Standard Test Method for Penetration Test and Split-Barrel Sampling of Soils). Standard penetration test (SPT) N-values are recorded on boring logs. In general, soil samples were collected every 2.5 feet in the upper 15 feet and at 5-foot intervals thereafter to the explored depth. A Westwood geotechnical representative logged the borings and collected the soil samples. Bulk soil samples were also collected from shallow auger cuttings for laboratory testing. Soil samples were shipped to Westwood and SET for testing at their geotechnical laboratories. Soil boring logs are included in Appendix A.

2.2 Laboratory Testing

Laboratory tests were conducted on representative soil samples to aid in classification and evaluation of the physical properties and engineering characteristics of the material. Soil and bulk samples were sent to Westwood and SET for testing, which included the following:

- Moisture content (ASTM D2216)
- Sieve analysis (ASTM D422 and D1140)
- Hydrometer (ASTM D422)
- Atterberg limits (ASTM D4318)

- Modified Proctor moisture-density relationship (ASTM D1557)
- pH (ASTM D4972)
- Sulfates (ASTM C1580)
- Chlorides (ASTM D512)
- Soil Box Resistivity (ASTM G187)
- Thermal resistivity with dry-out curves (ASTM D5334)
- California Bearing Ratio (ASTM D1883)

Bulk samples collected for thermal resistivity tests were prepared near the as-received moisture contents and compacted to 90% of the modified Proctor maximum dry density (MDD), representing the compaction conditions typical of a backfilled utility trench, and subsequently dried out to zero moisture. Thermal resistivity measurements were taken at the compacted moisture content, zero moisture, and at several intermediate moisture contents during drying. Results of the thermal resistivity tests are included in Appendix C, along with a summary of laboratory testing results.

2.3 Electrical Resistivity Testing

Electrical resistivity measurements were taken at seven total test locations shown on Exhibit 1, and were collected using the Wenner Four-Electrode Method and an AEMC Instruments Model 6470-B Multi-Function Digital Ground Resistance Tester, in general accordance with ASTM G57. Resistivity tests were performed at two locations along two perpendicular profiles with an electrode spacing of 2, 4, 6, 8, 10, 20, 30, 50, 100, and 200 feet. Resistivity tests were performed at five locations along two perpendicular profiles with an electrode spacing of 2, 4, 6, 8, 10, and 20 feet.

3.0 Site Conditions

3.1 Regional Geology and Climate

The Lockhart Solar PV II Project Site is located within the Sonoran Desert Section of the Basin and Range Province, which is part of the greater Intermontane Plateaus Division (USGS, 2013). The Basin and Range Province is divided into five sections, including the Great Basin, Sonoran Desert, Salton Trough, Mexican Highland, and Sacramento Sections. The Basin and Range Province spans from eastern California to central Utah in the east-west direction and from southern Idaho to Sonora (Mexico) in the north-south direction (NPS, 2020). The distinct feature of the Basin and Range Province is the alternating pattern of valleys and ranges, caused by the faults that resulted from the expansion of the Earth's crust and upper (NPS, 2020).

Based on Web Soil Survey data available through the United States Department of Agriculture, three major soil units exist across the Project Area: Norob-Halloran Complex (65%), Victorville Variant Sand (16%), and Cajon Loamy Sand (13%) (USDA, 2021). Other minor soils include Kimberlina Loamy Fine Sand and Cajon Sand (USDA, 2021). The Norob-Halloran Complex is described as alluvium derived from granite and classified as silty sand (SM) and poorly graded sand (SP). The Victorville Variant Sand Complex is described as alluvium derived from granite and classified as silty sand (SM) and poorly graded sand (SP). The Cajon Loamy Sand is described as alluvium derived from granite sources and classified as silty sand (SM). Mapped Soil Survey units are shown in Exhibit 3.

According to the Geologic Map of California, the Project Site is mapped within Quaternary alluvium and marine deposits (Jennings et al., 1977). This Pleistocene- to Holocene-aged unit consists mostly of alluvium, lake, playa, and terrace deposits and is described as unconsolidated to semi-consolidated. Additional geologic units mapped within 5 miles of the Project Site include Precambrian rocks to the northwest and Mesozoic granitic rocks also to the northwest. Geologic units are shown in Exhibit 4.

The Project Site falls within desert (or arid) climate zone (bordering between BWh and BWk), as defined by the Köppen climate classification (Geiger, 1954). This climate is characterized by hot temperatures (mean annual temperature around 18 °C), excess evaporation over precipitation, and ground surfaces being mostly bald, rocky, or sandy and holding little moisture (Arnfield, 2020).

3.2 Seismicity

San Bernardino County is historically a seismically active region and at high risk for continued seismic activity. In the past 50 years, 20 earthquake events greater than 4.0 magnitude on the Richter scale and more than 700 events greater than 2.5 magnitude have been mapped within 25 miles of the Project Site (see Exhibit 5) (USGS, 2021a). The largest of these events was a 4.8 magnitude earthquake located approximately 23 miles east of the Project Site recorded in 1992. The nearest of these events was a 4.1 magnitude earthquake located approximately 8 miles southeast of the Project Site. The most recent of the events greater than a 4.0 magnitude earthquake located approximately 21 miles east of the Project Site, recorded in 2000.

The Project Site sits among a number of mapped faults, including the Lockhart Section of the Lenwood-Lockhart fault zone, located less than ¼ mile northeast of the Project Site, and several other faults mapped within 10 miles of the Project Site (USGS, 2021b). The active Lenwood-Lockhart fault zone is Holocene-aged (last 11,650 years) and runs northwest to southeast with a vertical dip direction and a right-lateral slip at a rate between approximately 0.2 and 1.0 mm/yr (USGS, 2021b). Although the Project Site is not mapped within an Alquist-Priolo Fault Zone, an Alquist-Priolo Fault Zone is mapped along the Lenwood-Lockhart fault, less than 1/4 mile from the Project Site (see Exhibit 6) (CGS, 2020; ICC, 2019). The design of Project structures on site should account for seismic loads in accordance with the California Building Code. See Section 4.2.1 for additional recommendations regarding seismic design parameters.

In order for liquefaction to occur, several conditions need to be present; loose to medium dense poorly-graded sands with low fines content, saturated soil conditions (typically due to a shallow groundwater table), and large seismic shaking events (generally greater than magnitude 6.5). While the project area does contain pockets of poorly graded sand with low fines content and has experienced large seismic events, the material was generally found to be medium dense to dense within the target depth of the borings and no shallow groundwater was detected. In general, the potential for liquefaction to occur is considered low, although some differential settlement of shallow foundations may be expected due to seismically-induced settlement if a large earthquake event occurs over the lifespan of the Project.

3.3 Subsurface Stratigraphy

Based on the conditions encountered at the soil boring locations, the general stratigraphic units found across the project area can be described as follows:

- **Silty Sand, Poorly Graded Sand w/ Silt, Clayey Sand (SM, SP-SM, SC).** The primary soil unit encountered consisted of a poorly graded sand with varying amounts of silt and clay. The soil

was typically brown, dry to damp, and medium dense to dense, with isolated layers of loose surficial sand and deeper deposits of very dense sand. This unit extended to the target depth at all 20 boring locations.

The sandy material had moisture contents ranging from 1.4% to 6.6%, with an average of approximately 3%. The in-situ dry unit weight of the material is estimated to be approximately 110 pcf, with a friction angle ranging between 29 and greater than 40 degrees based on published correlations to SPT blow counts. Detailed descriptions of the subsurface conditions are provided on the boring logs found in Appendix A.

3.4 Groundwater

Boreholes were observed during and shortly after drilling for the presence and level of groundwater. During the investigation, a static groundwater level was not observed at any borehole. Water well data made publicly available through the California Department of Water Resources has mapped multiple wells in the vicinity of the Project Site. Publicly available groundwater monitoring data from the California Dept. of Water Resources (CDWR, 2021) suggests that groundwater is greater than 100 ft below the ground surface in the region. Groundwater is not expected to impact project construction or operation.

4.0 Discussion and Recommendations

4.1 General Earthwork Considerations

4.1.1 Clearing and Grubbing

Prior to Project grading activities, existing vegetation, trees, stumps, brush, large roots, topsoil, old foundations, boulders, uncontrolled fill, and abandoned underground utilities, if encountered, should be removed from the proposed concrete foundation and PV array areas, as well as areas to receive fill. Areas disturbed during clearing and grubbing should be properly backfilled and compacted as described in Sections 4.1.4 and 4.1.5.

4.1.2 Excavation Safety

Overburden soil and fill at the site can be excavated with conventional excavation equipment, such as backhoes, excavators, dozers, loaders, or scrapers. Excavations should be constructed using safe side slopes unless adequately shored and/or braced as necessary for construction and safety. Per Occupational Safety and Health Administration (OSHA) Part 1926, the sandy soil at the site may generally be inferred to be a Type C soil, although it is the responsibility of the competent field personnel to verify in-situ conditions during construction. Excavations should be constructed in conformance with applicable federal, state, and local standards.

4.1.3 Water Control

It is not anticipated that groundwater will accumulate in the excavations on site unless work is performed during a period of high precipitation; however, should any precipitation, ground water, or surface water collect in the excavations, the water should be removed prior to the placement of fill or foundations. Temporary sumps and pumps may be required to remove any

collected water. The foundation subgrade should be inspected by the construction-phase geotechnical engineer, or their representative, after excavation and before placement of materials to verify water control.

4.1.4 Subgrade Preparation

After clearing and grubbing, exposed areas to receive fill, including the subgrade below road aggregate and foundation over-excavations, should be scarified, moisture conditioned as-needed, and compacted to 92% of the modified Proctor maximum dry density (ASTM D1557). The depth of subgrade compaction should extend at least 1 foot within fill areas and access roads, or below shallow foundations. Foundations should not bear directly on loose sand, and where encountered, loose sand should be re-compacted to a depth of 1 foot below the bearing elevation. Foundation subgrade should also be inspected by the construction-phase geotechnical engineer, or their representative, to ensure adequate bearing capacity and water control. Native sand may be used as general fill if moisture conditioned and re-compacted, as discussed in Section 4.1.5.

Disturbance to subgrades prepared for foundations, access roads, and other areas to be filled should be minimized. Repeated traffic loading and excessive moisture due to precipitation may degrade subgrade soil. Where unsuitable subgrade, such as loose sand, is encountered, the subgrade should be moisture conditioned and re-compacted as described above, or over-excavated as recommended by the construction-phase geotechnical engineer and replaced with structural fill in accordance with Section 4.1.5.

4.1.5 Fill Placement and Compaction

The native sandy soil encountered throughout the site may be used as structural fill and may be suitable for backfilling around and above foundations, provided that all compaction requirements are met. Native sand used as structural fill or foundation backfill should be free of foreign debris, organics, frozen material, and particles or clods larger than 3 inches. Structural fill should be moisture conditioned as needed and compacted to a minimum of 92% of the modified Proctor maximum dry density (ASTM D1557) in maximum 12-inch thick loose lifts.

Trenches may be backfilled using native material, provided that it is screened of particles or clods larger than 3/8" and moisture conditioned to near optimum moisture content and compacted to a minimum of 90% of the modified Proctor maximum dry density (ASTM D1557) in non-structural areas and 92% of the modified Proctor maximum dry density in structural areas (i.e., within 5 feet of foundations and below access roads).

4.1.6 Cut and Fill Slopes

Cut and fill slopes using native soil may be designed at an inclination of 4H:1V or flatter. Fill slopes should be constructed in horizontal lifts in accordance with the recommendations in Section 4.1.5. Although not anticipated, any fill slopes greater than 5 feet in height should be benched into the existing slope to prevent movement between the fill and native soils. Benches should be approved by the construction-phase geotechnical engineer prior to placement of fill. Appropriate erosion control measures (e.g., vegetation or erosion control matting) should be implemented immediately after cut and fill slopes are constructed to reduce the potential for erosion.

4.2 General Foundation Considerations

4.2.1 Seismic Design Parameters

At the time of this report the State of California has adopted the 2019 California Building Code with amendments (ICC, 2019). The maximum considered earthquake spectral response accelerations presented in Table 3.1 below should be considered in design of site infrastructure (ATC, 2021).

Table.1 Seismic Design Parameters

Parameter	Design Value
Reference	2019 CBC
Site Class	D
Coordinates (Lat., Lon.)	35.043520, -117.349194
Mapped Spectral Acceleration for Short (0.2 sec) Periods, S_s	1.069 g
Mapped Spectral Acceleration for 1-second Periods, S_1	0.395 g
Acceleration-Based Site Coefficient, F_a	1.073
Velocity-Based Site Coefficient, F_v	1.9*
Max. Considered Spectral Response Acceleration, S_{MS}	1.146 g
Max. Considered Spectral Response Acceleration, S_{M1}	0.751 g*
Design Spectral Response Acceleration (Short Periods), S_{DS}	0.764 g
Design Spectral Response Acceleration (1-second Period), S_{D1}	0.500 g*
Peak Ground Acceleration, PGA	0.468 g

*See requirements for site-specific ground motions in Section 11.4.8 of ASCE 7-16, or geophysical tests may be performed to measure shear wave velocities and confirm seismic site class.

4.2.2 Frost Depth

Areas experiencing ground freezing conditions can be susceptible to frost heave. San Bernardino, California is expected to have less than 12 inches of extreme frost depth (NFEC, 1986). Although frost heave is not expected to affect foundation design, foundations should bear a minimum of 12 inches below grade for adequate confinement and protection.

4.2.3 Electrical Resistivity

Field electrical resistivity generally varies with material type and moisture content, and ranges within the project area between 500 ohm-cm (Ω -cm) and 135,200 Ω -cm. Electrical resistivity measurements were also performed on six re-compacted samples in the laboratory and ranged between 800 Ω -cm and 17,300 Ω -cm at their native moisture content and 300 Ω -cm and 1,500 Ω -cm when saturated. These observed values are relatively low, but generally fall within the expected range for the sandy soils encountered on site (Palacky, 1987). Results of the field electrical resistivity tests conducted in the project area are presented in Appendix B and results of the laboratory box electrical resistivity tests are presented and summarized in Appendix C.

4.2.4 Soil Corrosivity

The chemical constituent test results indicate that the soil has a pH ranging from 8.1 to 9.3. Soluble sulfates were measured to be as high as 1,690 mg/kg and soluble chlorides were measured as high as 1,570 mg/kg. These values, along with other soil properties such as moisture content, soil type, and electrical resistivity, indicate that the subsurface conditions are corrosive to steel piles. The foundation engineer should take these results into consideration when evaluating corrosion rates, along with electrical resistivity, soil type, and moisture content. Test results are presented in Appendix C and summarized in the Lab Test Summary Table.

4.3 PV Array Foundations

It is expected that PV modules will be supported by steel racking systems mounted on driven steel wide-flange (W-section) pile foundations, which generally appears feasible based on the subsurface conditions encountered during this investigation. The discussion and recommendations in this section may also be applied to driven W-section pile foundations used to support inverter skids located throughout the project area. The axial and lateral capacity recommendations provided in this section are based on results of this investigation and the pile load testing program.

Consideration should also be given to scour potential due to surface water runoff on un-stabilized surficial soil, in particular where prior construction activities may have disturbed the ground surface. A detailed hydrologic study should be performed to better quantify hydrologic scour potential.

4.3.1 Constructability

Pile load tests were conducted within the project area and results are included in the Pile Load Testing Report (Appendix D). A total of 28 test piles were driven to embedment depths of 6 feet and 8 feet at 12 locations on within the project area. Pile drive times ranged from 24 to 129 seconds and no piles met refusal prior to their target embedment depths. Refer to the Pile Load Testing Report (Appendix D) for more information on the location and drivability of test piles.

4.3.2 Axial Capacity

Driven pile foundations will develop their capacity through a combination of skin friction and end bearing when in compression and skin friction alone when in uplift. The recommended skin friction and end bearing values for design of the PV array foundations are based on a minimum pile embedment depth of 6 feet. Skin friction and end bearing values provided below are ultimate and do not include a safety factor. A safety factor of 2.0 is recommended when determining load bearing and uplift capacity, unless the controlling load case is due to wind or seismic loading, in which case a safety factor of 1.5 should be applied. Skin friction should be applied to the surface area of a wide-flange beam based on the “rectangular” perimeter of the pile, taken as twice the sum of the flange width and web depth. End bearing should be applied to the full “rectangular” area at the bottom of piles in compression (i.e. flange width times web depth).

An ultimate end bearing capacity of 50,000 psf may be used for design of piles embedded to at least 6 ft, and an ultimate unit skin friction value of 225 psf/ft is recommended for design. The above skin friction should be used in the following equation to calculate the ultimate uplift and compression capacity of the pile due to skin friction.

$$Q_{ult} = \frac{1}{2} H^2 * P * q_s$$

Where:

Q_{ult} = Ultimate uplift or compression capacity due to skin friction (lb)

H = Embedment depth of piles (ft)

P = Perimeter of pile (ft)

q_s = Unit skin friction per depth of pile (psf/ft), (230 psf/ft)

Consideration should be given to neglecting skin friction within the upper 12 inches of embedment to account for the potential for erosion/scour. Additional scour depths may be applied based on results of the hydrologic study.

4.3.3 Lateral Capacity

The lateral capacity of driven pile foundations was evaluated with pile load tests. The lateral response of the piles may be modeled using the software program LPile by Ensoft, Inc. The recommended LPile soil model input parameters for design of wide-flange beam foundations for PV array racking systems are provided in the table below. The LPile recommendations provided were calibrated using lateral load testing results. Calibration curves are provided in Appendix E.

Table 4.2 LPile soil input parameters

Depth (ft)	LPile Soil Model	Effective Unit Weight (pcf)	Friction Angle (°)	p, y Multipliers
0 – 1	Ignore due to scour/erosion			
1 – 5	Sand (Reese)	110	35	3.25, 1
5 – 20	Sand (Reese)	110	48	0.2, 1

4.4 Shallow Foundations

Results of the investigation suggest that shallow spread/strip footings and mat foundations are feasible at this site. It is assumed that the pads and mat foundations supporting electrical equipment will bear at least 1 foot below grade. Provided the recommendations of this report are followed, including pads bearing on at least 1 foot of structural fill, the design of large slab-on-grade equipment foundations (i.e., 10 to 20 feet wide) and conventional spread and strip footing foundations (i.e., 4 feet wide) may use a maximum allowable gross bearing capacity of 3,000 psf.

A total estimated settlement of less than 1 inch is anticipated for shallow foundations, provided the subgrade preparation recommendations in Section 4.1.4 are followed. Differential settlement can generally be assumed to be $\frac{1}{2}$ to $\frac{3}{4}$ of the total settlement. Proper drainage should be provided around foundations to minimize the potential for foundation movement. Shallow foundations should be reinforced as necessary to reduce the potential for damage caused by differential movement.

A friction factor of 0.4 may be used for the ultimate frictional resistance to lateral sliding along the base of footings founded on compacted select structural fill. A minimum factor of safety of 1.5 is recommended to determine the allowable frictional resistance to lateral sliding. A vertical modulus of subgrade reaction of 125 pounds per cubic inch (pci) may be used for mat foundations bearing on 1 foot

of compacted native sand. This vertical modulus of subgrade reaction represents a 1 foot square foundation and should be modified as needed for larger foundation sizes.

4.5 Access Roads

Access roads will be required during construction to accommodate construction equipment and deliveries. The access roads will also facilitate long-term operation and maintenance of the facility. These roads will be subjected to heavy loads, but only for limited duration and frequency. The suitability of the shallow site soil for use as access roads will depend primarily on the strength and moisture condition of the soil at the time the traffic occurs. The shallow soil on is generally considered adequate subgrade for gravel access roads.

Westwood understands that a few native soil access roads exist within the project area. The general condition of the existing roads varied across the project area. Portions exhibited no signs of rutting or surficial damage, while loose sand that was difficult to traverse with a UTV was observed in other areas in the project area. The existing native soil access roads should have an aggregate surface to help ensure accessibility during wet conditions. Access roads constructed only of compacted native soil (no aggregate) may perform adequately during dry conditions, but may deteriorate if used during wet conditions. A detailed structural evaluation of the existing roads within the project area was outside of this scope, but in general some improvements, such as additional aggregate and road widening, will be needed to facilitate construction traffic.

Existing and proposed access road subgrade should be moisture conditions and compacted in accordance with the recommendations in Section 4.1.4. A design subgrade CBR of 9 may be used for access road design provided the subgrade is compacted to 92% of the Modified Proctor maximum dry density. Following subgrade preparation, a minimum 4 to 6 inch layer of aggregate should be placed on the existing roadway surface, which should be suitable to support construction traffic. These roads should be inspected by a qualified geotechnical representative to ensure adequate strength and durability to handle the construction and operation loads of the proposed development.

It is expected that aggregate-surfaced access roads will require ongoing maintenance to keep them in a serviceable condition, regardless of the aggregate thickness and subgrade preparation. It is not practical to design an aggregate section of adequate thickness that prevents ongoing maintenance. Ruts, depressions, and soft subgrade should be repaired as needed to facilitate traffic. Additional aggregate may be placed in ruts and depressions, or the entire aggregate section and soft subgrade may be removed and replaced with a new aggregate section.

Surface vegetation root zones and other soft or otherwise unsuitable material should be stripped from access roadways and the surface graded to provide positive drainage. In order to identify potentially unsuitable soil, the road subgrade or existing road surface should be compacted and subsequently proof-rolled with a fully loaded tandem axle or tri-axle truck with a minimum gross weight of 25 tons and minimum axle loading of 10 tons. Subgrade preparation should be monitored by a representative of the construction-phase geotechnical engineer at the time of construction. At locations where pumping or unacceptable rutting (i.e. greater than 1.5 inches) of the subgrade occurs, the subgrade should be moisture conditions and re-compacted, or the loose/soft soil should be removed and replaced with properly compacted fill in accordance with Section 4.1.5.

4.6 Construction Considerations

To a large degree, satisfactory foundation and earthwork performance depends on construction quality control; therefore, subgrade preparation, subgrade compaction, proof-rolling, and placement and compaction of fill and backfill material should be observed and tested by qualified personnel. In addition, qualified staff who are experienced with the foundation design requirements should monitor and document foundation preparation and construction activities.

5.0 Limitations

This report has been prepared in accordance with generally accepted geotechnical engineering practice for the exclusive use of Lockhart Solar PV II, LLC for the Lockhart Solar PV II Project. The primary focuses of this report are the typical grading activities, pile foundations for the PV racking, shallow foundations for electrical equipment within the general project area, and access roads. Additional investigations and analyses may be necessary for other Project Site infrastructure not specifically addressed in this report.

The borings are representative of the subsurface conditions at the sampled locations and intervals, and therefore do not necessarily reflect strata variations that may exist between sampled locations and intervals. If variations from the subsurface conditions described in this study are noted during construction, recommendations in this report must be re-evaluated. Any user of this report should verify all boring locations against the final location of the respective infrastructure to determine if infrastructure has moved prior to using the recommendations provided by Westwood. In the event that any changes in the nature, design, or location of the facilities are planned, the conclusions and recommendations contained in this report should not be considered valid unless the changes are reviewed and the conclusions of this report are modified or verified in writing by Westwood. Westwood is not responsible for any claims, damages, or liability associated with the interpretation of subsurface data by others.

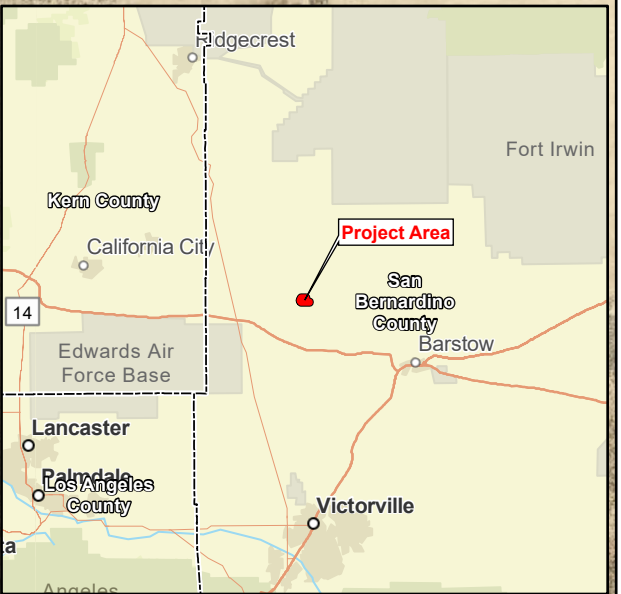
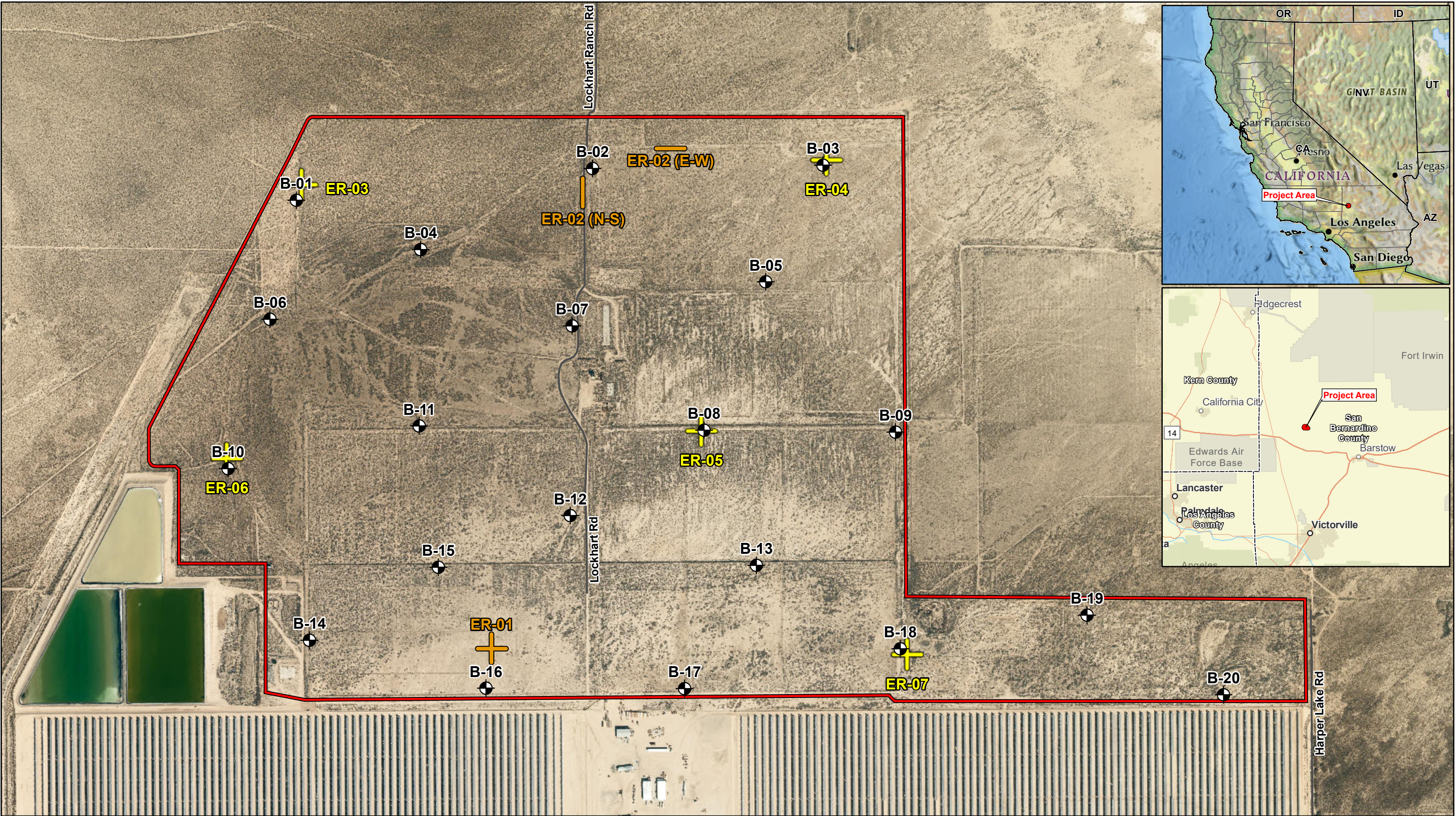
After plans for the facility are completed in sufficient detail, a geotechnical engineer should be consulted regarding any additional subsurface information that may be required to arrive at additional recommendations for design and construction.

6.0 References

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Exhibits



Data Source(s): Westwood (2021); ESRI WMS World Imagery, National Geographic, & World Streets Basemaps (Accessed 2021); Census Bureau (2019).

Legend

- | | |
|---|---|
|  Project Area |  Boring Location |
|  Named Census Road |  Electrical Resistivity Test Location (20ft) |
| |  Electrical Resistivity Test Location (200ft) |

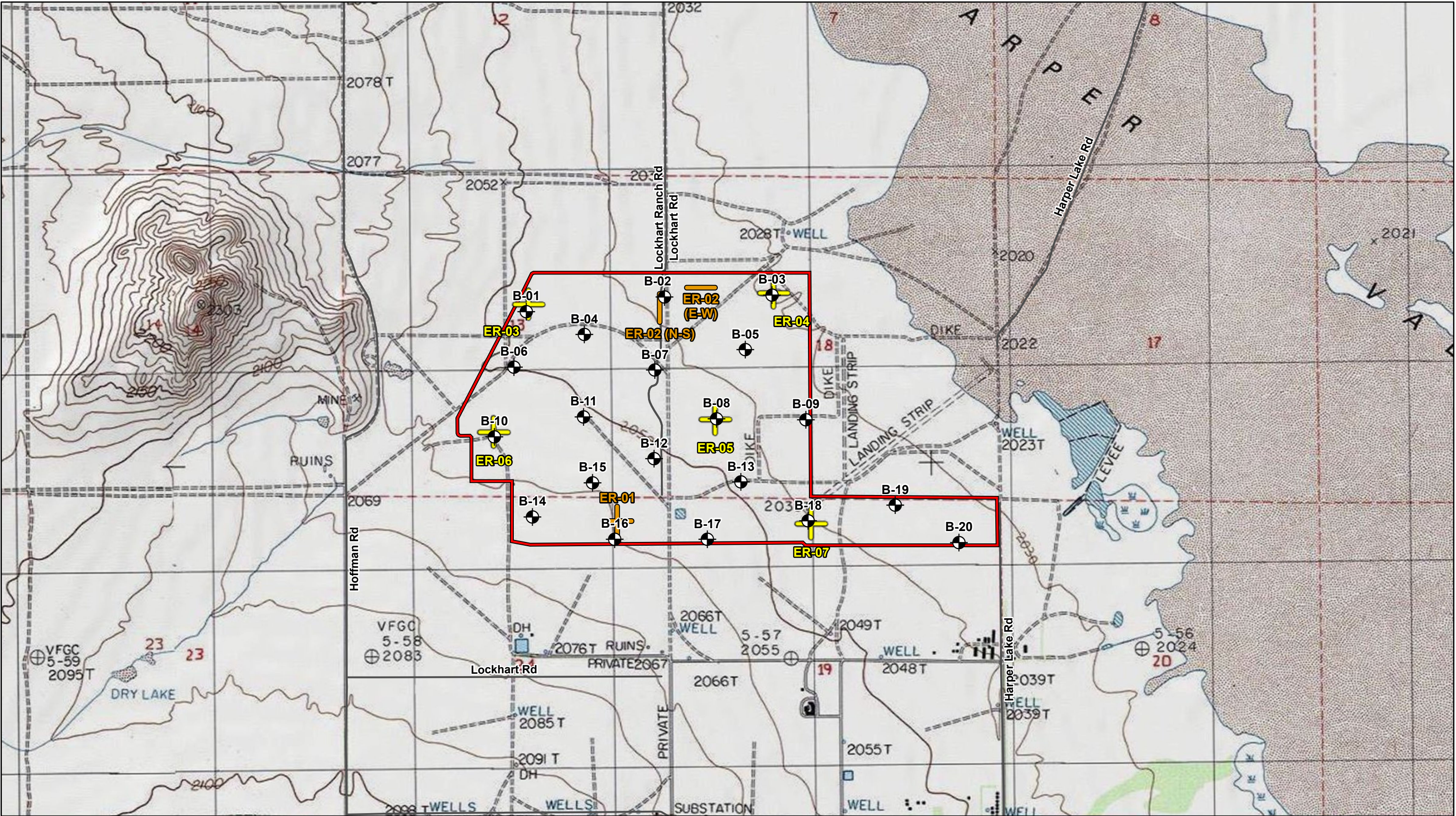


Lockhart Solar II Project
San Bernardino County, California

Geotechnical Investigation Overview Map

Westwood

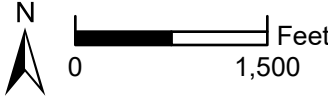
Toll Free (888) 937-5150 westwoodps.com
Westwood Professional Services, Inc.



Data Source(s): Westwood (2021); ESRI WMS USA Topo Basemap (Accessed 2021); Census Bureau (2019).

Legend

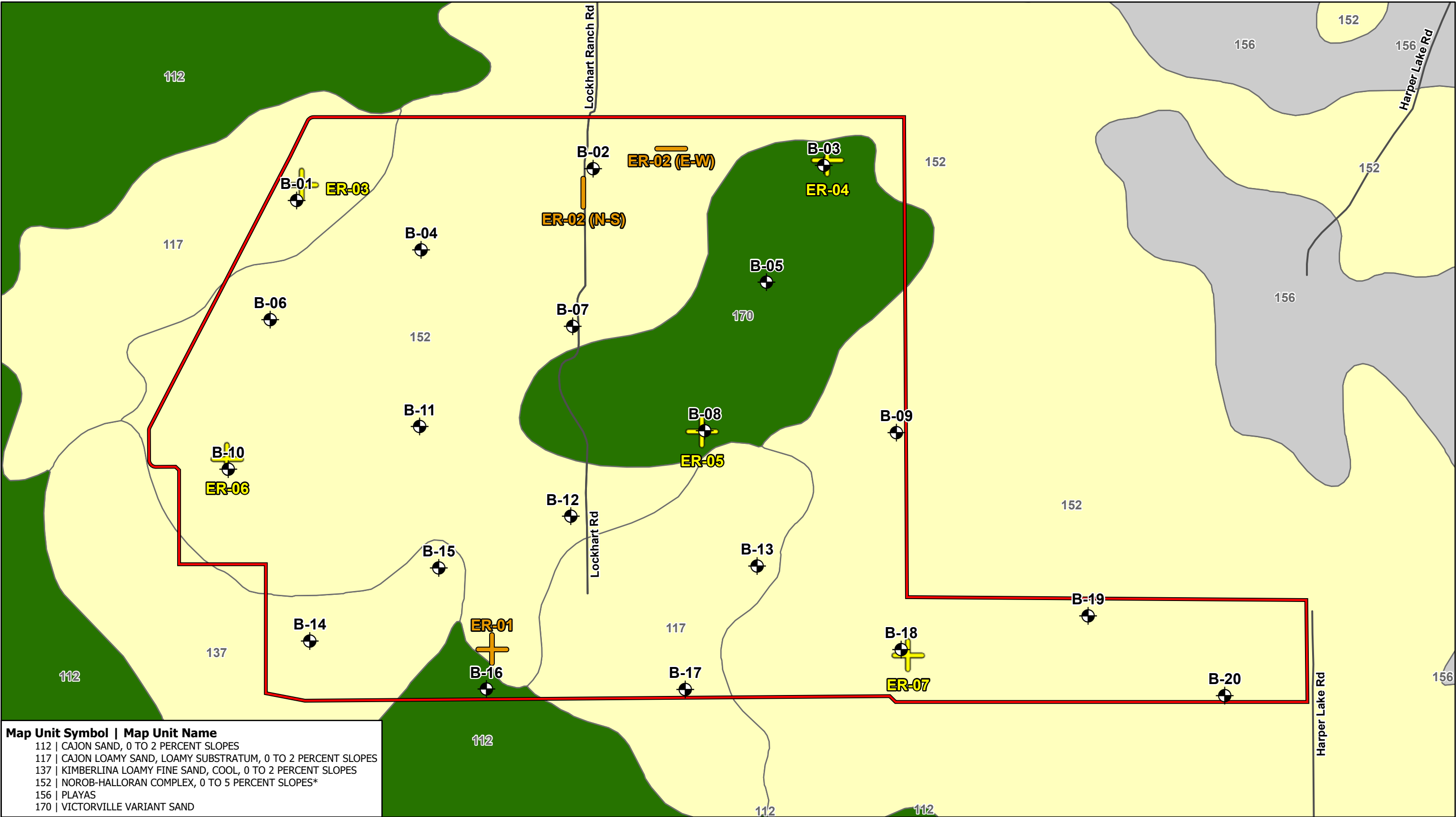
- Project Area
- Boring Location
- Electrical Resistivity Test Location (20ft)
- Named Census Road
- Electrical Resistivity Test Location (200ft)



Lockhart Solar II Project
San Bernardino County, California

USGS Topography Map

Map Document: N:\03030222.00_GIS\Lockhart Solar II\Geotech Exhibits\lockhart solar II Geotech Exhibits.aprx 9/24/2021 1:33 PM VM/Flowers



Map Unit Symbol Map Unit Name	
112	CAJON SAND, 0 TO 2 PERCENT SLOPES
117	CAJON LOAMY SAND, LOAMY SUBSTRATUM, 0 TO 2 PERCENT SLOPES
137	KIMBERLINA LOAMY FINE SAND, COOL, 0 TO 2 PERCENT SLOPES
152	NOROB-HALLORAN COMPLEX, 0 TO 5 PERCENT SLOPES*
156	PLAYAS
170	VICTORVILLE VARIANT SAND

Data Source(s): Westwood (2021); Census Bureau (2019); U.S. Department of Agriculture, Natural Resources Conservation Service (2021); *USCS Classifications Determined By Westwood Where USDA Lacks Surficial Classification.

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Legend

- Project Area
- Named Census Road

- Boring Location
- Electrical Resistivity Test Location (20ft)
- Electrical Resistivity Test Location (200ft)

Unified Soil Classification

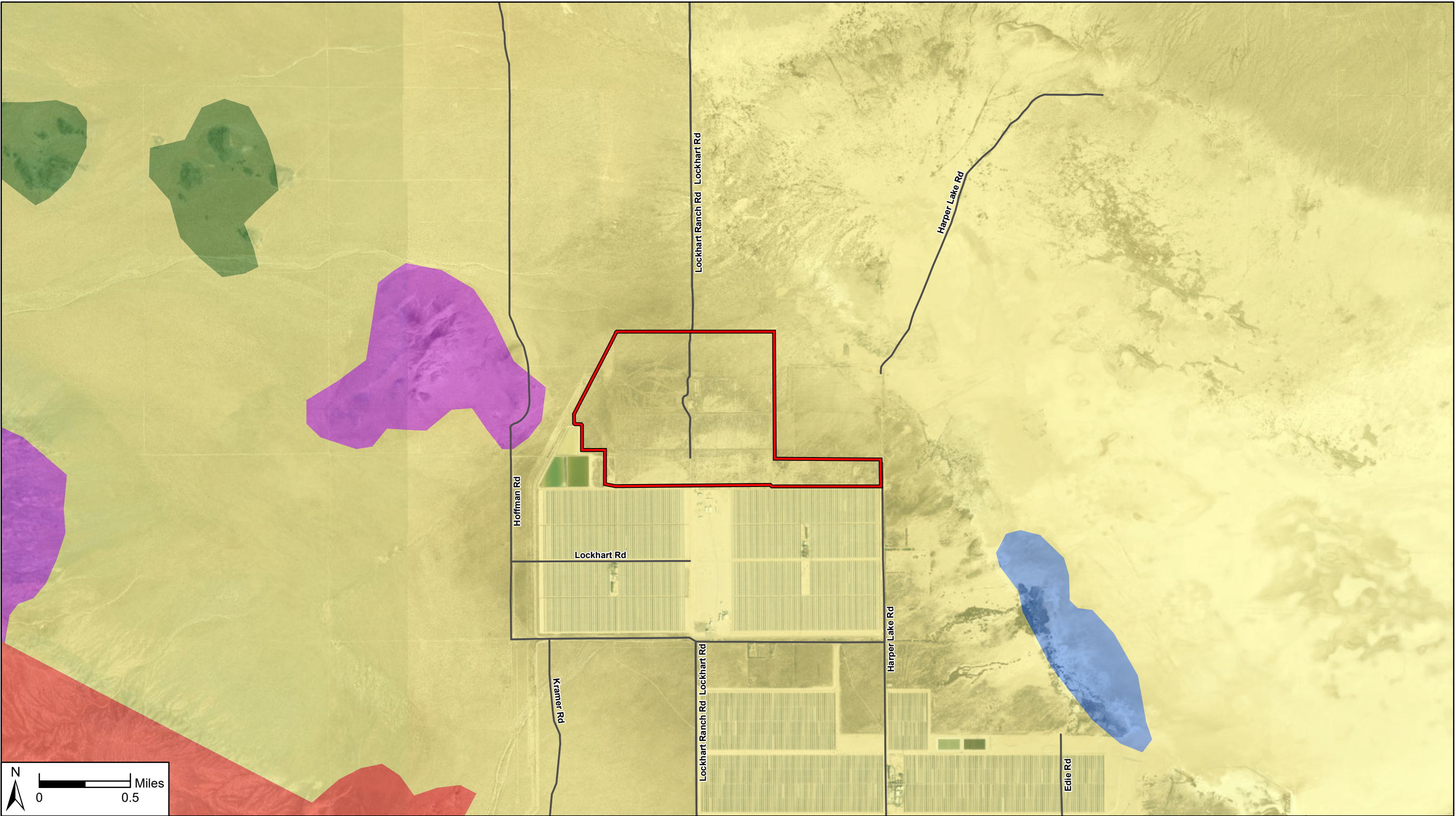
- SM
- SP-SM
- Classification Not Given



Lockhart Solar II Project

San Bernardino County, California


Surficial Soils Map




Data Source(s): Westwood (2021); ESRI WMS World Imagery (Accessed 2021); Census Bureau (2019); USGS (2018).


Legend


 Project Area


 Named Census Road

Geologic Unit Symbol | Geologic Unit Name | Geologic Unit Age

 Q | Quaternary alluvium and marine deposits | Phanerozoic - Cenozoic - Quaternary - Holocene

 Qoa | Older Quaternary alluvium and marine deposits | Phanerozoic - Cenozoic - Quaternary - Pleistocene

 grMz | Mesozoic granitic rocks, unit 3 (Sierra Nevada, Death Valley area, Northern Mojave Desert and Transverse Ranges) | Phanerozoic - Cenozoic - Tertiary

 pC | Precambrian rocks, undivided, unit 2 (Mojave Desert and Transverse Ranges) | Phanerozoic - Cenozoic - Tertiary-Neogene - Miocene

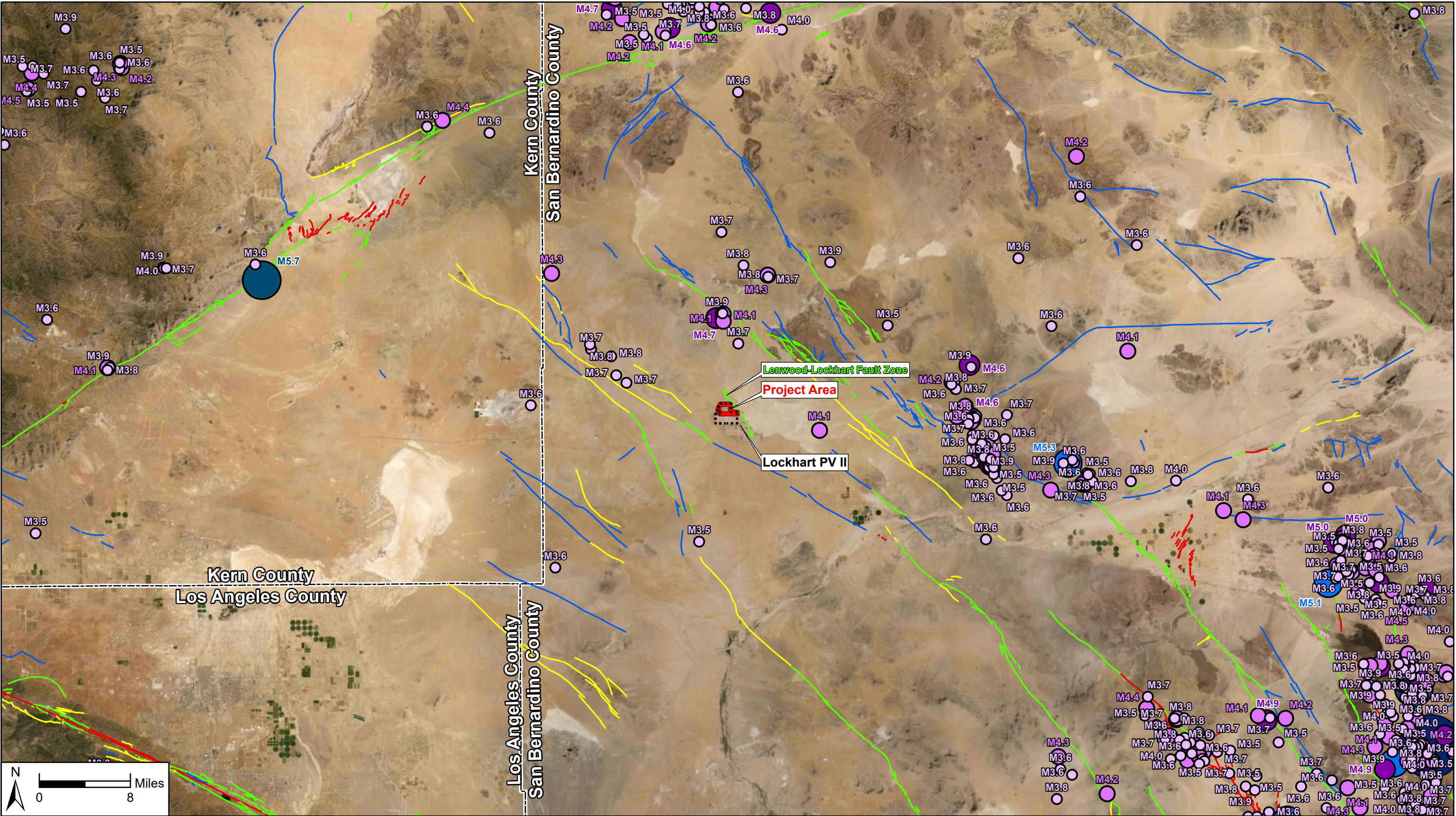
 Water | Water | N/A

Lockhart Solar II Project
San Bernardino County, California

Local Geology Map









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Data Source(s): Westwood (2021); ESRI WMS World Imagery Basemap (Accessed 2021); Census Bureau (2018); Department of Conservation, California Geological Survey (2010); USGS (2021).

Legend

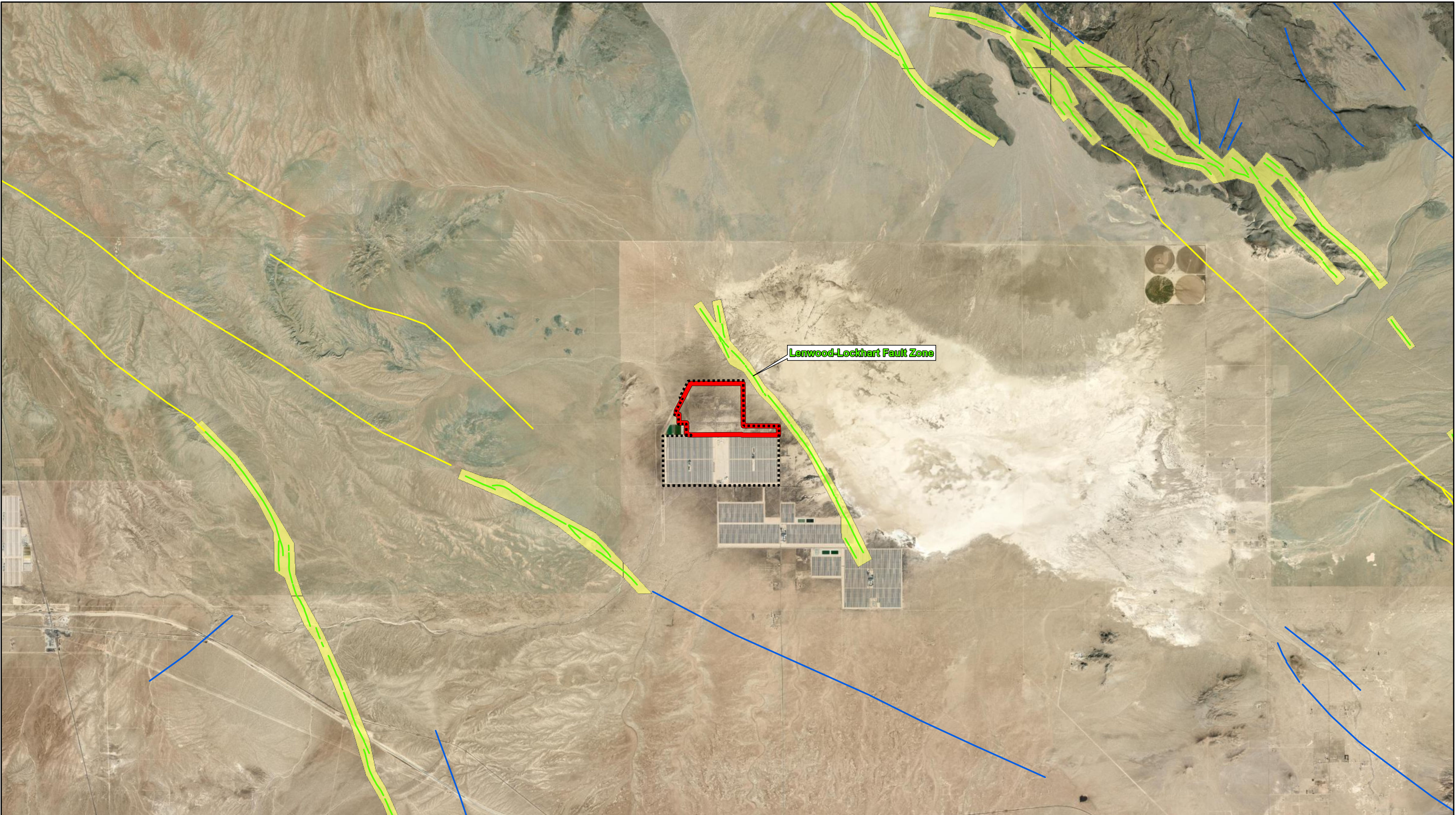
- | | | |
|---|--|---|
|  Project Area |  Major Highway |  Historic Displacement Fault Line (Last 200 Years) |
|  Lockhart PV II |  Holocene Quaternary Fault Line (Last 11,000 Years) | |
|  County Boundary |  Late Quaternary Fault Line (Last 750,000 Years) | |
| |  Undivided Quaternary Fault Line (Last 1.6 Million Years) | |

Earthquakes by Magnitude From 1971 to 2021

- | | |
|---|---|
|  3.5-4.0 |  5.6-6.0 |
|  4.1-4.5 | |
|  4.6-5.0 |  7.1 |
|  5.1-5.5 | |








Lockhart Solar II Project
San Bernardino County, California

Earthquake & Fault Map



Data Source(s): Westwood (2021); ESRI WMS World Imagery Basemap (2021); Census Bureau (2010); Department of Conservation, California Geological Survey (2010); USGS (2020).

Legend

-  Project Area
-  Lockhart PV II
-  Alquist-Priolo Fault Zone
-  Major Highway
-  Holocene Quaternary Fault Line (Last 11,000 Years)
-  Late Quaternary Fault Line (Last 750,000 Years)
-  Undivided Quaternary Fault Line (Last 1.6 Million Years)



Lockhart Solar II Project
San Bernardino County, California

Seismic Hazard Map

Appendix A

Soil Boring Logs

Facility/Project Name: Lockhart Solar II San Bernardino County, California		Boring Location: Lat: 35.048478 Long: -117.356381		Surface Elev. (ft): ---	Total Depth (ft bgs): 16.5	Borehole Dia. (in): 8 in
Drilling Firm: Choice Drilling	Drilling Method: Hollow Stem Auger (HSA) Auto-Hammer	Personnel: Logger - C. Acker Driller - J. Saravia		Date Started: 12/17/20	Date Completed: 12/17/20	Water Depth (ft bgs): DNE

SAMPLE		BLOW COUNTS	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	USCS	GRAPHIC LOG	N VALUE (BLOWS)	POCKET PEN (tsf) (* = brittle failure)	COMPRESSIVE STRENGTH (TSF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	P 200 (%)	COMMENTS
NUMBER AND TYPE	RECOVERY (%)													
1 SS	94	10 12 15		SILTY SAND (SM) - light yellowish brown, dry, medium dense.	SM		0 10 20 30 40 50							Coordinates are NAD83 Datum.
AU			2											Bulk sample taken from auger cuttings 2 to 5 ft bgs.
2 SS	89	5 5 7												
AU			4											
3 SS	100	10 11 15		POORLY GRADED SAND w/ SILT (SP-SM) - brownish yellow, dry to damp, dense to very dense.	SP-SM		0 10 20 30 40 50			5.4			42	Sat. ER* = 1,500 Moist ER* = 9,300 pH = 9.2
			6											
4 SS	100	11 24 27												
			8											
5 SS	100	15 18 24		SILTY SAND (SM) - brownish yellow to light yellowish brown, damp, medium dense to dense.	SM		0 10 20 30 40 50							
			10											
6 SS	100	12 15 18												
			12											
7 SS	100	11 12 14		BORING TERMINATED. TARGET DEPTH REACHED.			0 10 20 30 40 50							* ER = Electrical Resistivity in Ohm-cm.
			16											
			18											

WW BORING LOG PP 2021-1-15 LOCKHART SOLAR II BORING LOGS.GPJ RMT CORP.GDT 1/25/21

Checked By: B. Kravitz	Date: 1/25/21	Approved By: B. Kravitz	Date: 1/25/21	Firm: Westwood Professional Services 8401 Greenway Boulevard, Suite 400 Middleton, WI 53562	(608) 821-6600
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Facility/Project Name: Lockhart Solar II San Bernardino County, California		Boring Location: Lat: 35.049106 Long: -117.348772		Surface Elev. (ft): ---	Total Depth (ft bgs): 16.5	Borehole Dia. (in): 8 in
Drilling Firm: Choice Drilling	Drilling Method: Hollow Stem Auger (HSA) Auto-Hammer	Personnel: Logger - C. Acker Driller - J. Saravia		Date Started: 12/18/20	Date Completed: 12/18/20	Water Depth (ft bgs): DNE

SAMPLE		BLOW COUNTS	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	USCS	GRAPHIC LOG	N VALUE (BLOWS)	POCKET PEN (tsf) (* = brittle failure)	COMPRESSIVE STRENGTH (TSF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	P 200 (%)	COMMENTS
NUMBER AND TYPE	RECOVERY (%)													
1 SS	100	7 10 12		POORLY GRADED SAND w/ SILT (SP-SM) - brownish yellow, dry to damp, medium dense.										Coordinates are NAD83 Datum.
2 SS	100	10 12 15	2		SP-SM									
3 SS	100	10 13 16	4											
4 SS	100	10 14 17	6	SILTY SAND (SM) - brownish yellow, damp, medium dense to dense.	SM					6.4		16		
5 SS	100	12 21 25	8	POORLY GRADED SAND w/ SILT (SP-SM) - brownish yellow, damp, dense.	SP-SM									
6 SS	100	15 21 28	10	SILTY SAND (SM) - light yellowish brown to yellow, damp, dense.	SM									
7 SS	100	12 19 25	12	- pale brown.										
			14											
			16											
			18	BORING TERMINATED. TARGET DEPTH REACHED.										

WW BORING LOG_PP 2021-1-15 LOCKHART SOLAR II BORING LOGS.GPJ RMT CORP.GDT 1/25/21

Checked By: B. Kravitz	Date: 1/25/21	Approved By: B. Kravitz	Date: 1/25/21	Firm: Westwood Professional Services 8401 Greenway Boulevard, Suite 400 Middleton, WI 53562	(608) 821-6600
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Facility/Project Name: Lockhart Solar II San Bernardino County, California		Boring Location: Lat: 35.049146 Long: -117.342855		Surface Elev. (ft): ---	Total Depth (ft bgs): 16.5	Borehole Dia. (in): 8 in
Drilling Firm: Choice Drilling		Drilling Method: Hollow Stem Auger (HSA) Auto-Hammer		Personnel: Logger - C. Acker Driller - J. Saravia	Date Started: 12/16/20	Date Completed: 12/16/20
						Water Depth (ft bgs): DNE

SAMPLE		BLOW COUNTS	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	USCS	GRAPHIC LOG	N VALUE (BLOWS)	POCKET PEN (tsf) (* = brittle failure)	COMPRESSIVE STRENGTH (TSF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	P 200 (%)	COMMENTS
NUMBER AND TYPE	RECOVERY (%)													
1 SS	94	9 12 15		POORLY GRADED SAND w/ SILT (SP-SM)- brownish yellow, dry to damp, medium dense.	SP-SM									Coordinates are NAD83 Datum. Bulk sample taken from auger cuttings 2 to 5 ft bgs.
AU			2							3.2	NC	NP	23	
2 SS	100	7 12 15		SILTY SAND (SM)- yellowish brown, dry to damp, medium dense.	SM									
AU			4											
3 SS	100	7 11 21		POORLY GRADED SAND w/ SILT (SP-SM)- brownish yellow, dry to damp, dense.	SP-SM									
4 SS	100	12 15 22		SILTY SAND (SM)- light yellowish brown to yellow, dry to damp, dense.										
5 SS	100	8 14 21			SM									
6 SS	100	16 20 27		POORLY GRADED SAND w/ SILT (SP-SM)- brownish yellow, dry to damp, dense.	SP-SM									
7 SS	100	9 12 15		SILTY SAND (SM)- pale brown, damp, medium dense.	SM									
				BORING TERMINATED. TARGET DEPTH REACHED.										

WW BORING LOG PP 2021-1-15 LOCKHART SOLAR II BORING LOGS.GPJ RMT CORP.GDT 1/25/21

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Facility/Project Name: Lockhart Solar II San Bernardino County, California		Boring Location: Lat: 35.047415 Long: -117.353196		Surface Elev. (ft): ---	Total Depth (ft bgs): 16.5	Borehole Dia. (in): 8 in
Drilling Firm: Choice Drilling		Drilling Method: Hollow Stem Auger (HSA) Auto-Hammer		Personnel: Logger - C. Acker Driller - J. Saravia	Date Started: 12/17/20	Date Completed: 12/17/20
						Water Depth (ft bgs): DNE

SAMPLE			DEPTH IN FEET	LITHOLOGIC DESCRIPTION	USCS	GRAPHIC LOG	N VALUE (BLOWS)	POCKET PEN (tsf) (* = brittle failure)	COMPRESSIVE STRENGTH (TSF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	P 200 (%)	COMMENTS
NUMBER AND TYPE	RECOVERY (%)	BLOW COUNTS												
1 SS	100	8 19 20		SILTY SAND (SM) - light yellowish brown, dry to damp, dense.	SM									Coordinates are NAD83 Datum.
			2	POORLY GRADED SAND w/ SILT (SP-SM) - yellowish brown, damp, dense.										
2 SS	100	7 15 19												
			4											
3 SS	100	11 18 21			SP-SM									
			6											
4 SS	94	9 21 23		SILTY SAND (SM) - brownish yellow, damp, dense.										
			10											
5 SS	100	12 17 21			SM									
			12											
6 SS	100	11 20 21		POORLY GRADED SAND w/ SILT (SP-SM) - very pale brown, damp, dense to very dense.										
			14		SP-SM									
			16											
7 SS	100	19 33 40												
			18	BORING TERMINATED. TARGET DEPTH REACHED.										

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Checked By: B. Kravitz	Date: 1/25/21	Approved By: B. Kravitz	Date: 1/25/21	Firm: Westwood Professional Services 8401 Greenway Boulevard, Suite 400 Middleton, WI 53562	(608) 821-6600
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Facility/Project Name: Lockhart Solar II San Bernardino County, California		Boring Location: Lat: 35.046683 Long: -117.344342		Surface Elev. (ft): ---	Total Depth (ft bgs): 16.5	Borehole Dia. (in): 8 in
Drilling Firm: Choice Drilling		Drilling Method: Hollow Stem Auger (HSA) Auto-Hammer		Personnel: Logger - C. Acker Driller - J. Saravia	Date Started: 12/18/20	Date Completed: 12/18/20
						Water Depth (ft bgs): DNE

SAMPLE		BLOW COUNTS	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	USCS	GRAPHIC LOG	N VALUE (BLOWS)	POCKET PEN (tsf) (* = brittle failure)	COMPRESSIVE STRENGTH (TSF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	P 200 (%)	COMMENTS
NUMBER AND TYPE	RECOVERY (%)													
1 SS	100	10 11 13		SILTY SAND (SM) - yellowish brown, dry to damp, medium dense.	SM					2.2			19	Coordinates are NAD83 Datum. Sat. ER* = 300 Moist ER* = 6,700 pH = 8.5
2 SS	100	10 12 19		POORLY GRADED SAND w/ SILT (SP-SM) - yellowish brown, damp, dense.	SP-SM									
3 SS	100	10 19 27			SP-SM									
4 SS	100	9 16 20		SILTY SAND (SM) - yellowish brown, damp, dense.	SM									
5 SS	100	14 17 24			SM									
6 SS	100	15 23 30		POORLY GRADED SAND w/ SILT (SP-SM) - light yellowish brown, damp, dense to very dense.	SP-SM									
7 SS	100	15 24 25			SP-SM									
				BORING TERMINATED. TARGET DEPTH REACHED.										* ER = Electrical Resistivity in Ohm-cm.

WW BORING LOG-PP 2021-1-15 LOCKHART SOLAR II BORING LOGS.GPJ RMT CORP.GDT 1/25/21

Checked By: B. Kravitz	Date: 1/25/21	Approved By: B. Kravitz	Date: 1/25/21	Firm: Westwood Professional Services 8401 Greenway Boulevard, Suite 400 Middleton, WI 53562	(608) 821-6600
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Facility/Project Name: Lockhart Solar II San Bernardino County, California		Boring Location: Lat: 35.045966 Long: -117.357079		Surface Elev. (ft): ---	Total Depth (ft bgs): 16.5	Borehole Dia. (in): 8 in
Drilling Firm: Choice Drilling	Drilling Method: Hollow Stem Auger (HSA) Auto-Hammer	Personnel: Logger - C. Acker Driller - J. Saravia		Date Started: 12/17/20	Date Completed: 12/17/20	Water Depth (ft bgs): DNE

SAMPLE		BLOW COUNTS	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	USCS	GRAPHIC LOG	N VALUE (BLOWS)	POCKET PEN (tsf) (* = brittle failure)	COMPRESSIVE STRENGTH (TSF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	P 200 (%)	COMMENTS
NUMBER AND TYPE	RECOVERY (%)													
1 SS	100	2 7 10		SILTY SAND (SM) - light yellowish brown, dry to damp, medium dense.	SM									Coordinates are NAD83 Datum.
2 SS	100	6 10 20		POORLY GRADED SAND w/ SILT (SP-SM) - brownish yellow, damp, medium dense to dense.						4.1				
3 SS	100	10 17 21												
4 SS	89	7 11 20		- pale brown.	SP-SM									
5 SS	100	10 11 18												
6 SS	100	10 16 25												
7 SS	100	10 20 21		SILTY SAND (SM) - light yellowish brown, damp, dense.	SM									
				BORING TERMINATED. TARGET DEPTH REACHED.										

WW BORING LOG_PP 2021-1-15 LOCKHART SOLAR II BORING LOGS.GPJ RMT CORP.GDT 1/25/21

Checked By: B. Kravitz	Date: 1/25/21	Approved By: B. Kravitz	Date: 1/25/21	Firm: Westwood Professional Services 8401 Greenway Boulevard, Suite 400 Middleton, WI 53562	(608) 821-6600
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Facility/Project Name: <div>Lockhart Solar II</div> <div>San Bernardino County, California</div>		Boring Location: Lat: 35.045786 Long: -117.349322	Surface Elev. (ft): ---	Total Depth (ft bgs): 16.5	Borehole Dia. (in): 8 in
Drilling Firm: <div>Choice Drilling</div>	Drilling Method: <div>Hollow Stem Auger (HSA)</div> <div>Auto-Hammer</div>	Personnel: Logger - C. Acker Driller - J. Saravia	Date Started: 12/16/20	Date Completed: 12/16/20	Water Depth (ft bgs): DNE

SAMPLE				DEPTH IN FEET	LITHOLOGIC DESCRIPTION	USCS	GRAPHIC LOG	N VALUE (BLOWS)	POCKET PEN (tsf) (* = brittle failure)	COMPRESSIVE STRENGTH (TSF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	P 200 (%)	COMMENTS
NUMBER AND TYPE	RECOVERY (%)	BLOW COUNTS													
1 SS	100	12 20 21		2	SILTY CLAYEY SAND (SC-SM)- brownish yellow, dry, dense to very dense.	SC-SM									Coordinates are NAD83 Datum.
AU															
2 SS	83	13 17 20													
AU															
3 SS	100	15 20 32													
4 SS	100	15 22 40		8	POORLY GRADED SAND w/ SILT (SP-SM)- brownish yellow, dry to damp, dense to very dense.	SP-SM								Bulk sample taken from auger cuttings 2 to 5 ft bgs.	
5 SS	100	15 18 31													
6 SS	100	8 32 37													
7 SS	100	24 30 32		16											
				18	BORING TERMINATED. TARGET DEPTH REACHED.										

WWW BORING LOG PP 2021-1-15 LOCKHART SOLAR II BORING LOGS.GPJ RMT CORP.GDT 1/25/21

Checked By:	Date:	Approved By:	Date:	Firm:	Westwood Professional Services (608) 821-6600
B. Kravitz	1/25/21	B. Kravitz	1/25/21	8401 Greenway Boulevard, Suite 400	Middleton, WI 53562

Facility/Project Name: Lockhart Solar II San Bernardino County, California		Boring Location: Lat: 35.043562 Long: -117.345952		Surface Elev. (ft): ---	Total Depth (ft bgs): 16.5	Borehole Dia. (in): 8 in
Drilling Firm: Choice Drilling		Drilling Method: Hollow Stem Auger (HSA) Auto-Hammer		Personnel: Logger - C. Acker Driller - J. Saravia	Date Started: 12/16/20	Date Completed: 12/16/20
						Water Depth (ft bgs): DNE

SAMPLE		BLOW COUNTS	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	USCS	GRAPHIC LOG	N VALUE (BLOWS)	POCKET PEN (tsf) (* = brittle failure)	COMPRESSIVE STRENGTH (TSF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	P 200 (%)	COMMENTS
NUMBER AND TYPE	RECOVERY (%)													
1 SS	94	9 12 15		SILTY SAND (SM) - brownish yellow, damp, medium dense to dense.						2.5				Coordinates are NAD83 Datum.
2 SS	100	12 14 22			SM									
3 SS	100	12 15 16												
4 SS	89	9 12 17			SP-SM									
5 SS	100	9 12 20		SILTY SAND (SM) - brownish yellow, damp, dense.	SM									
6 SS	100	15 19 21		POORLY GRADED SAND w/ SILT (SP-SM) - yellowish brown, damp, dense.	SP-SM									
7 SS	94	9 17 19												
				POORLY GRADED SAND w/ SILT (SP-SM) - yellowish brown, damp, dense.										
				BORING TERMINATED. TARGET DEPTH REACHED.										

WW BORING LOG PP 2021-1-15 LOCKHART SOLAR II BORING LOGS.GPJ RMT CORP.GDT 1/25/21

Checked By: B. Kravitz	Date: 1/25/21	Approved By: B. Kravitz	Date: 1/25/21	Firm: Westwood Professional Services 8401 Greenway Boulevard, Suite 400 Middleton, WI 53562	(608) 821-6600
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Facility/Project Name: Lockhart Solar II San Bernardino County, California		Boring Location: Lat: 35.043493 Long: -117.341035		Surface Elev. (ft): ---	Total Depth (ft bgs): 16.5	Borehole Dia. (in): 8 in
Drilling Firm: Choice Drilling		Drilling Method: Hollow Stem Auger (HSA) Auto-Hammer		Personnel: Logger - C. Acker Driller - J. Saravia	Date Started: 12/16/20	Date Completed: 12/16/20
						Water Depth (ft bgs): DNE

SAMPLE		BLOW COUNTS	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	USCS	GRAPHIC LOG	N VALUE (BLOWS)	POCKET PEN (tsf) (* = brittle failure)	COMPRESSIVE STRENGTH (TSF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	P 200 (%)	COMMENTS
NUMBER AND TYPE	RECOVERY (%)													
1 SS	100	20 32 34		SILTY SAND (SM) - yellowish brown, dry to damp, medium dense to very dense.										Coordinates are NAD83 Datum.
2 SS	100	9 10 17	2											
3 SS	100	10 11 20	6		SM					3.5			20	Sat. ER* = 700 Moist ER* = 14,700 pH = 8.1
4 SS	100	9 12 15	8											
5 SS	89	7 8 12	10	- brownish yellow, damp.										
6 SS	100	10 12 14	12											
7 SS	100	11 15 16	16											
			18											
				BORING TERMINATED. TARGET DEPTH REACHED.										* ER = Electrical Resistivity in Ohm-cm.

WW BORING LOG_PP 2021-1-15 LOCKHART SOLAR II BORING LOGS.GPJ RMT CORP.GDT 1/25/21

Checked By: B. Kravitz	Date: 1/25/21	Approved By: B. Kravitz	Date: 1/25/21	Firm: Westwood Professional Services 8401 Greenway Boulevard, Suite 400 Middleton, WI 53562	(608) 821-6600
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Facility/Project Name: Lockhart Solar II San Bernardino County, California		Boring Location: Lat: 35.042814 Long: -117.358181		Surface Elev. (ft): ---	Total Depth (ft bgs): 16.5	Borehole Dia. (in): 8 in
Drilling Firm: Choice Drilling	Drilling Method: Hollow Stem Auger (HSA) Auto-Hammer	Personnel: Logger - C. Acker Driller - J. Saravia		Date Started: 12/17/20	Date Completed: 12/17/20	Water Depth (ft bgs): DNE

SAMPLE		BLOW COUNTS	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	USCS	GRAPHIC LOG	N VALUE (BLOWS)	POCKET PEN (tsf) (* = brittle failure)	COMPRESSIVE STRENGTH (TSF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	P 200 (%)	COMMENTS
NUMBER AND TYPE	RECOVERY (%)													
1 SS	89	7 11 20		SILTY SAND (SM) - brownish yellow, dry to damp, medium dense to dense.	SM		0 10 20 30 40 50							Coordinates are NAD83 Datum.
2 SS	100	11 12 15	2											
3 SS	100	10 12 18	4											
4 SS	100	10 11 20	6											
5 SS	94	7 14 18	8	POORLY GRADED SAND w/ SILT (SP-SM) - yellow, dry to damp, dense.	SP-SM		0 10 20 30 40 50			3.3			34	Sat. ER* = 500 Moist ER* = 17,300 pH = 8.1
6 SS	94	16 19 32	10											
7 SS	100	18 24 34	12	SILTY SAND (SM) - very pale brown, dry to damp, very dense.	SM		0 10 20 30 40 50							* ER = Electrical Resistivity in Ohm-cm.
			14											
			16											
			18	BORING TERMINATED. TARGET DEPTH REACHED.										

WW BORING LOG_PP 2021-1-15 LOCKHART SOLAR II BORING LOGS.GPJ RMT CORP.GDT 1/25/21

Checked By: B. Kravitz	Date: 1/25/21	Approved By: B. Kravitz	Date: 1/25/21	Firm: Westwood Professional Services 8401 Greenway Boulevard, Suite 400 Middleton, WI 53562	(608) 821-6600
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Facility/Project Name: Lockhart Solar II San Bernardino County, California		Boring Location: Lat: 35.043685 Long: -117.353264		Surface Elev. (ft): ---	Total Depth (ft bgs): 16.5	Borehole Dia. (in): 8 in
Drilling Firm: Choice Drilling	Drilling Method: Hollow Stem Auger (HSA) Auto-Hammer	Personnel: Logger - C. Acker Driller - J. Saravia		Date Started: 12/17/20	Date Completed: 12/17/20	Water Depth (ft bgs): DNE

SAMPLE		BLOW COUNTS	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	USCS	GRAPHIC LOG	N VALUE (BLOWS)	POCKET PEN (tsf) (* = brittle failure)	COMPRESSIVE STRENGTH (TSF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	P 200 (%)	COMMENTS
NUMBER AND TYPE	RECOVERY (%)													
1 SS	83	6 10 12		SILTY SAND (SM) - light yellowish brown, dry, medium dense.						2.5				Coordinates are NAD83 Datum.
			2		SM									
2 SS	100	10 16 20												
			4											
3 SS	100	10 24 30		POORLY GRADED SAND w/ SILT (SP-SM) - brownish yellow, dry to damp, very dense.										
			6		SP-SM									
4 SS	100	14 24 50/6"												
			8											
5 SS	100	15 27 32		SILTY SAND (SM) - light yellowish brown, damp, very dense.										
			10		SM									
			12											
6 SS	60	20 41 50/3"		POORLY GRADED SAND w/ SILT (SP-SM) - brownish yellow, damp, very dense.										
			14		SP-SM									
			16											
7 SS	100	18 30 38		SILTY SAND (SM) - very pale brown, damp, very dense.										
			18		SM									
				BORING TERMINATED. TARGET DEPTH REACHED.										

WW BORING LOG PP 2021-1-15 LOCKHART SOLAR II BORING LOGS.GPJ RMT CORP.GDT 1/25/21

Checked By: B. Kravitz	Date: 1/25/21	Approved By: B. Kravitz	Date: 1/25/21	Firm: Westwood Professional Services 8401 Greenway Boulevard, Suite 400 Middleton, WI 53562	(608) 821-6600
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Facility/Project Name: Lockhart Solar II San Bernardino County, California		Boring Location: Lat: 35.041772 Long: -117.349401		Surface Elev. (ft): ---	Total Depth (ft bgs): 51.5	Borehole Dia. (in): 8 in
Drilling Firm: Choice Drilling	Drilling Method: Hollow Stem Auger (HSA) Auto-Hammer	Personnel: Logger - C. Acker Driller - J. Saravia		Date Started: 12/16/20	Date Completed: 12/16/20	Water Depth (ft bgs): DNE

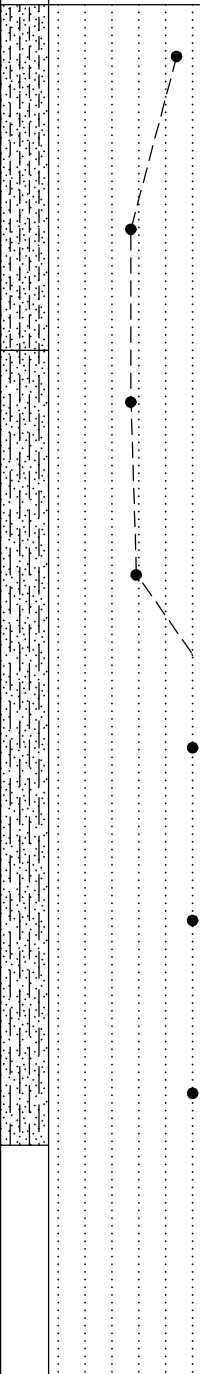
SAMPLE		BLOW COUNTS	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	USCS	GRAPHIC LOG	N VALUE (BLOWS)	POCKET PEN (tsf) (* = brittle failure)	COMPRESSIVE STRENGTH (TSF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	P 200 (%)	COMMENTS
NUMBER AND TYPE	RECOVERY (%)													
1 SS	72	1 2 3		POORLY GRADED SAND w/ SILT (SP-SM) - brownish yellow, dry, loose.										Coordinates are NAD83 Datum. Bulk sample taken from auger cuttings 1 to 4 ft bgs.
AU				- light yellowish brown, damp, medium dense. - moist.						2.1	NC	NP	13	
2 SS	100	4 6 7												
3 SS	100	5 11 12	5		SP-SM									
4 SS	100	7 8 11												
5 SS	100	7 10 15	10	SILTY SAND (SM) - yellowish brown, moist, medium dense.	SM									
6 SS	100	10 16 18		POORLY GRADED SAND w/ SILT (SP-SM) - brownish yellow, moist, dense.	SP-SM									
7 SS	100	7 9 11	15	CLAYEY SAND (SC) - pale brown, moist, medium dense. - 0.5" diameter quartz mineral grain.	SC					13.5	51.5	34.5	41	Sat. ER* = 700 Moist ER* = 800 pH = 9.3
8 SS	100	9 10 11	20	POORLY GRADED SAND w/ SILT (SP-SM) - light yellowish brown, moist, medium dense.										* ER = Electrical Resistivity in Ohm-cm.
9 SS	100	9 10 14	25		SP-SM									

WW BORING LOG PP 2021-1-15 LOCKHART SOLAR II BORING LOGS.GPJ RMT CORP.GDT 1/25/21

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SAMPLE			DEPTH IN FEET	LITHOLOGIC DESCRIPTION	USCS	GRAPHIC LOG	N VALUE (BLOWS)	POCKET PEN (tsf) (* = brittle failure)	COMPRESSIVE STRENGTH (TSF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	P 200 (%)	COMMENTS
NUMBER AND TYPE	RECOVERY (%)	BLOW COUNTS												
10 SS	100	11 12 15					0 10 20 30 40 50							
					SP-SM									
11 SS	100	16 30 37	35	SILTY SAND (SM) - yellowish brown, moist, dense to very dense.										
					SM									
12 SS	100	11 12 20	40	POORLY GRADED SAND w/ SILT (SP-SM) - light yellowish brown, moist, very dense.										
					SP-SM									
13 SS	89	16 21 30	45											
14 SS	100	35 50/5"	50											
				BORING TERMINATED. TARGET DEPTH REACHED.										
			55											
			60											
			65											

Facility/Project Name: Lockhart Solar II San Bernardino County, California		Boring Location: Lat: 35.040697 Long: -117.344631		Surface Elev. (ft): ---	Total Depth (ft bgs): 16.5	Borehole Dia. (in): 8 in
Drilling Firm: Choice Drilling	Drilling Method: Hollow Stem Auger (HSA) Auto-Hammer	Personnel: Logger - C. Acker Driller - J. Saravia		Date Started: 12/17/20	Date Completed: 12/17/20	Water Depth (ft bgs): DNE

SAMPLE			DEPTH IN FEET	LITHOLOGIC DESCRIPTION	USCS	GRAPHIC LOG	N VALUE (BLOWS)	POCKET PEN (tsf) (* = brittle failure)	COMPRESSIVE STRENGTH (TSF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	P 200 (%)	COMMENTS
NUMBER AND TYPE	RECOVERY (%)	BLOW COUNTS												
1 SS	100	20 21 23	2	SILTY SAND (SM)- brownish yellow to yellowish brown, dry to damp, medium dense to dense.	SM								Coordinates are NAD83 Datum.	
2 SS	100	7 11 16												
3 SS	100	8 12 15	6	POORLY GRADED SAND w/ SILT (SP-SM)- yellowish brown, dry to damp, medium dense.	SP-SM									
4 SS	100	10 14 15												
5 SS	100	12 34 40	10	- very dense.	SP-SM					2.4		11		
6 SS	100	11 22 30												
7 SS	100	15 20 37	16	- well cemented.										
			18	BORING TERMINATED. TARGET DEPTH REACHED.										

WW BORING LOG-PP 2021-1-15 LOCKHART SOLAR II BORING LOGS.GPJ RMT CORP.GDT 1/25/21

Checked By: B. Kravitz	Date: 1/25/21	Approved By: B. Kravitz	Date: 1/25/21	Firm: Westwood Professional Services 8401 Greenway Boulevard, Suite 400 Middleton, WI 53562	(608) 821-6600
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Facility/Project Name: Lockhart Solar II San Bernardino County, California		Boring Location: Lat: 35.039179 Long: -117.356115		Surface Elev. (ft): ---	Total Depth (ft bgs): 16.5	Borehole Dia. (in): 8 in
Drilling Firm: Choice Drilling		Drilling Method: Hollow Stem Auger (HSA) Auto-Hammer		Personnel: Logger - C. Acker Driller - J. Saravia	Date Started: 12/15/20	Date Completed: 12/15/20
						Water Depth (ft bgs): DNE

SAMPLE		BLOW COUNTS	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	USCS	GRAPHIC LOG	N VALUE (BLOWS)	POCKET PEN (tsf) (* = brittle failure)	COMPRESSIVE STRENGTH (TSF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	P 200 (%)	COMMENTS
NUMBER AND TYPE	RECOVERY (%)													
1 SS	78	18	18	SILTY SAND (SM) - brownish yellow, dry, dense.	SM		18							
		19	19											
		16	16											
2 SS	94	8	8	POORLY GRADED SAND w/ SILT (SP-SM) - brownish yellow to yellowish brown, dry to damp, medium dense to dense.	SP-SM		8							
		10	10											
		15	15											
3 SS	89	6	6	- very dense.	SP-SM		6							
		12	12											
		20	20											
4 SS	100	12	12	- very dense.	SP-SM		12							
		21	21											
		32	32											
5 SS	100	11	11	- very pale brown, very dense.	SP-SM		11							
		30	30											
		35	35											
6 SS	100	13	13	- very pale brown, very dense.	SP-SM		13							
		18	18											
		22	22											
7 SS	78	15	15	- very pale brown, very dense.	SP-SM		15							
		27	27											
		30	30											
			18	BORING TERMINATED. TARGET DEPTH REACHED.										

WW BORING LOG PP 2021-1-15 LOCKHART SOLAR II BORING LOGS.GPJ RMT CORP.GDT 1/25/21

Checked By: B. Kravitz	Date: 1/25/21	Approved By: B. Kravitz	Date: 1/25/21	Firm: Westwood Professional Services 8401 Greenway Boulevard, Suite 400 Middleton, WI 53562	(608) 821-6600
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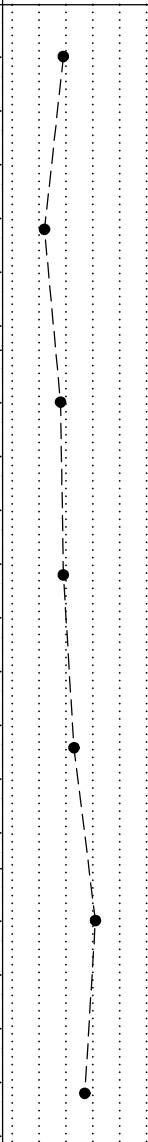
Facility/Project Name: Lockhart Solar II San Bernardino County, California		Boring Location: Lat: 35.040704 Long: -117.352797		Surface Elev. (ft): ---	Total Depth (ft bgs): 16.5	Borehole Dia. (in): 8 in
Drilling Firm: Choice Drilling		Drilling Method: Hollow Stem Auger (HSA) Auto-Hammer		Personnel: Logger - C. Acker Driller - J. Saravia	Date Started: 12/17/20	Date Completed: 12/17/20
						Water Depth (ft bgs): DNE

SAMPLE		BLOW COUNTS	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	USCS	GRAPHIC LOG	N VALUE (BLOWS)	POCKET PEN (tsf) (* = brittle failure)	COMPRESSIVE STRENGTH (TSF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	P 200 (%)	COMMENTS
NUMBER AND TYPE	RECOVERY (%)													
1 SS	100	15 24 25		SILTY SAND (SM) - brownish yellow, dry, medium dense to dense.	SM		0 10 20 30 40 50							Coordinates are NAD83 Datum.
2 SS	83	6 8 15	2											
3 SS	100	11 15 17	4											
4 SS	100	20 32 30	6											
5 SS	100	11 16 17	8	POORLY GRADED SAND w/ SILT (SP-SM) - brownish yellow, dry to damp, dense to very dense.	SP-SM		0 10 20 30 40 50							
6 SS	100	9 10 18	10											
7 SS	100	7 8 12	12											
			14											
			16	BORING TERMINATED. TARGET DEPTH REACHED.			0 10 20 30 40 50							
			18											

WW BORING LOG PP 2021-1-15 LOCKHART SOLAR II BORING LOGS.GPJ RMT CORP.GDT 1/25/21

Checked By: B. Kravitz	Date: 1/25/21	Approved By: B. Kravitz	Date: 1/25/21	Firm: Westwood Professional Services 8401 Greenway Boulevard, Suite 400 Middleton, WI 53562	(608) 821-6600
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Facility/Project Name: Lockhart Solar II San Bernardino County, California		Boring Location: Lat: 35.038138 Long: -117.351595		Surface Elev. (ft): ---	Total Depth (ft bgs): 16.5	Borehole Dia. (in): 8 in
Drilling Firm: Choice Drilling		Drilling Method: Hollow Stem Auger (HSA) Auto-Hammer		Personnel: Logger - C. Acker Driller - J. Saravia	Date Started: 12/15/20	Date Completed: 12/15/20
						Water Depth (ft bgs): DNE

SAMPLE			BLOW COUNTS	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	USCS	GRAPHIC LOG	N VALUE (BLOWS)	POCKET PEN (tsf) (* = brittle failure)	COMPRESSIVE STRENGTH (TSF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	P 200 (%)	COMMENTS		
NUMBER AND TYPE	RECOVERY (%)																
1 SS	83		17 10 9		SILTY SAND (SM) - brownish yellow, dry to damp, medium dense.	SM										Coordinates are NAD83 Datum. Bulk sample taken from auger cuttings 2 to 5 ft bgs.	
AU				2													
2 SS	100		4 5 7														
AU				4													
3 SS	100		5 8 10		POORLY GRADED SAND w/ SILT (SP-SM) - yellowish brown, damp, medium dense.	SP-SM											
				6													
4 SS	100		5 9 10														
				8													
5 SS	100		10 11 12		- very pale brown.												
6 SS	100		10 11 20		SILTY SAND (SM) - brownish yellow, damp, medium dense to dense.	SM											
7 SS	56		11 12 15														
				18	BORING TERMINATED. TARGET DEPTH REACHED.												

WW BORING LOG_PP 2021-1-15 LOCKHART SOLAR II BORING LOGS.GPJ RMT CORP.GDT 1/25/21

Checked By: B. Kravitz	Date: 1/25/21	Approved By: B. Kravitz	Date: 1/25/21	Firm: Westwood Professional Services 8401 Greenway Boulevard, Suite 400 Middleton, WI 53562	(608) 821-6600
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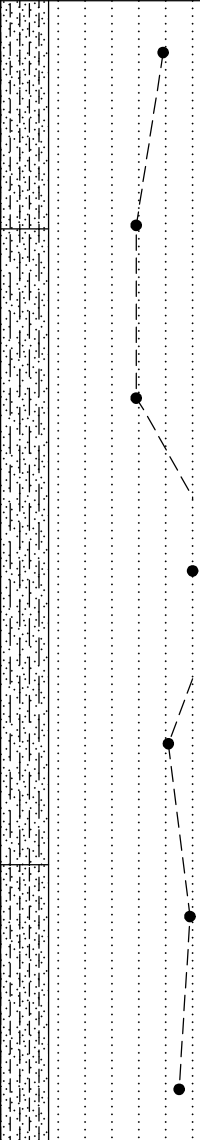
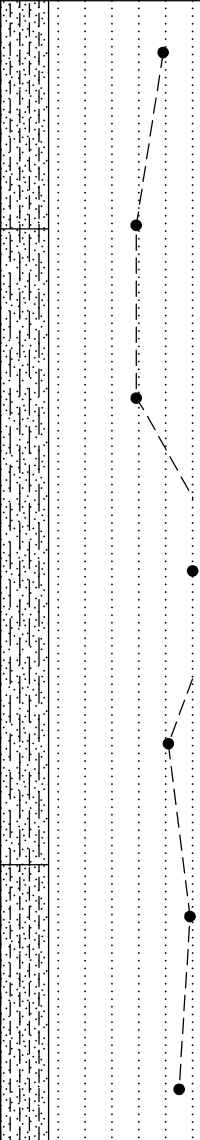
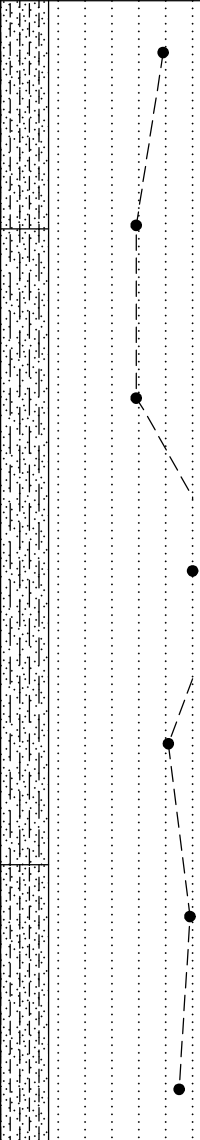
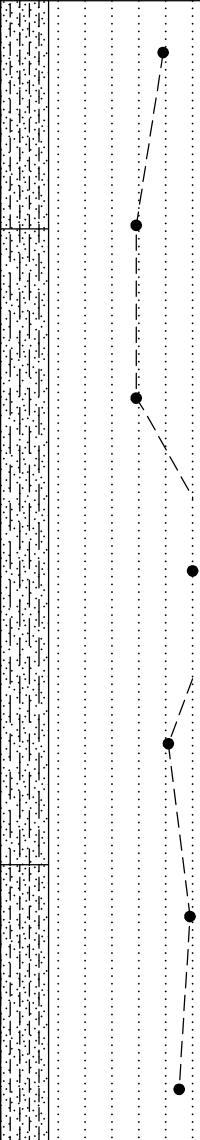
Facility/Project Name: Lockhart Solar II San Bernardino County, California		Boring Location: Lat: 35.038108 Long: -117.346493		Surface Elev. (ft): ---	Total Depth (ft bgs): 16.5	Borehole Dia. (in): 8 in
Drilling Firm: Choice Drilling		Drilling Method: Hollow Stem Auger (HSA) Auto-Hammer		Personnel: Logger - C. Acker Driller - J. Saravia	Date Started: 12/15/20	Date Completed: 12/15/20
						Water Depth (ft bgs): DNE

SAMPLE		BLOW COUNTS	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	USCS	GRAPHIC LOG	N VALUE (BLOWS)	POCKET PEN (tsf) (* = brittle failure)	COMPRESSIVE STRENGTH (TSF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	P 200 (%)	COMMENTS
NUMBER AND TYPE	RECOVERY (%)													
1 SS	100	17 24 40		SILTY SAND (SM) - brownish yellow, dry, medium dense to very dense.	SM		0 10 20 30 40 50			1.7				Coordinates are NAD83 Datum.
2 SS	100	11 12 13	2											
3 SS	100	6 10 18	4											
4 SS	100	15 19 21	6	POORLY GRADED SAND w/ SILT (SP-SM) - brownish yellow, damp, medium dense to dense.	SP-SM		0 10 20 30 40 50							
5 SS	100	12 17 21	8											
6 SS	100	11 15 18	10											
7 SS	94	7 15 18	12	- well cemented.	SM		0 10 20 30 40 50							
			14											
			16	SILTY SAND (SM) - brownish yellow, damp, dense.										
			18	BORING TERMINATED. TARGET DEPTH REACHED.										

WW BORING LOG PP 2021-1-15 LOCKHART SOLAR II BORING LOGS.GPJ RMT CORP.GDT 1/25/21

Checked By: B. Kravitz	Date: 1/25/21	Approved By: B. Kravitz	Date: 1/25/21	Firm: Westwood Professional Services 8401 Greenway Boulevard, Suite 400 Middleton, WI 53562	(608) 821-6600
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Facility/Project Name: Lockhart Solar II San Bernardino County, California		Boring Location: Lat: 35.038913 Long: -117.340951		Surface Elev. (ft): ---	Total Depth (ft bgs): 16.5	Borehole Dia. (in): 8 in
Drilling Firm: Choice Drilling		Drilling Method: Hollow Stem Auger (HSA) Auto-Hammer		Personnel: Logger - C. Acker Driller - J. Saravia	Date Started: 12/15/20	Date Completed: 12/15/20
						Water Depth (ft bgs): DNE

SAMPLE			BLOW COUNTS	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	USCS	GRAPHIC LOG	N VALUE (BLOWS)	POCKET PEN (tsf) (* = brittle failure)	COMPRESSIVE STRENGTH (TSF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	P 200 (%)	COMMENTS
NUMBER AND TYPE	RECOVERY (%)														
1 SS	83	12 15 24	2		SILTY SAND (SM)- light yellowish brown, dry, dense.	SM									Coordinates are NAD83 Datum.
2 SS	100	7 12 17													
3 SS	89	10 14 15													
4 SS	100	15 30 35	8		- very dense.	SP-SM									
5 SS	94	12 17 24													
6 SS	100	11 17 32													
7 SS	100	17 22 23	16		SILTY SAND (SM)- light yellowish brown, damp, dense.	SM									
			18		BORING TERMINATED. TARGET DEPTH REACHED.										

WW BORING LOG_PP 2021-1-15 LOCKHART SOLAR II BORING LOGS.GPJ RMT CORP.GDT 1/25/21

Checked By: B. Kravitz	Date: 1/25/21	Approved By: B. Kravitz	Date: 1/25/21	Firm: Westwood Professional Services 8401 Greenway Boulevard, Suite 400 Middleton, WI 53562	(608) 821-6600
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Facility/Project Name: Lockhart Solar II San Bernardino County, California		Boring Location: Lat: 35.037899 Long: -117.33266		Surface Elev. (ft): ---	Total Depth (ft bgs): 16.5	Borehole Dia. (in): 8 in
Drilling Firm: Choice Drilling		Drilling Method: Hollow Stem Auger (HSA) Auto-Hammer		Personnel: Logger - C. Acker Driller - J. Saravia	Date Started: 12/15/20	Date Completed: 12/15/20
						Water Depth (ft bgs): DNE

SAMPLE		BLOW COUNTS	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	USCS	GRAPHIC LOG	N VALUE (BLOWS)	POCKET PEN (tsf) (* = brittle failure)	COMPRESSIVE STRENGTH (TSF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	P 200 (%)	COMMENTS
NUMBER AND TYPE	RECOVERY (%)													
1 SS	83	8 12 10		SILTY SAND (SM) - brownish yellow, dry, medium dense.	SM									Coordinates are NAD83 Datum.
			2											
2 SS	94	8 9 12		POORLY GRADED SAND w/ SILT (SP-SM) - brownish yellow to light yellowish brown, dry to damp, medium dense to dense.						3.2				
			4											
3 SS	83	8 15 17												
			6											
4 SS	100	12 24 35		- very dense.	SP-SM									
			8											
5 SS	100	17 23 30												
			10											
6 SS	100	15 21 24		SILTY SAND (SM) - brownish yellow, damp, dense.	SM									
			12											
7 SS	100	15 21 24												
			14											
			16											
			18	BORING TERMINATED. TARGET DEPTH REACHED.										

WW BORING LOG-PP 2021-1-15 LOCKHART SOLAR II BORING LOGS.GPJ RMT CORP.GDT 1/25/21

Checked By: B. Kravitz	Date: 1/25/21	Approved By: B. Kravitz	Date: 1/25/21	Firm: Westwood Professional Services 8401 Greenway Boulevard, Suite 400 Middleton, WI 53562	(608) 821-6600
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Appendix B

Electrical Resistivity Test Reports

Westwood

Electrical Resistivity Test Results
Wenner 4-Electrode Method
Lockhart Solar II - San Bernardino County, California

ER-01

Latitude	Longitude
35.038981°	-117.351437°

Description: 60°F, sunny, dry to damp soil conditions
North-South Transect

ELECTRODE SPACING		APPARENT RESISTIVITY	
(feet)	(meters)	ohm-feet	ohm-meters
2	0.6	317	96.5
4	1.2	219	66.6
6	1.8	193	58.7
8	2.4	330	101
10	3.0	210	64.0
20	6.1	161	49.0
30	9.1	298	90.8
50	15.2	97.4	29.7
100	30.5	81.7	24.9
200	61.0	4,436	1,352

Date: 12/18/2020

East-West Transect

ELECTRODE SPACING		APPARENT RESISTIVITY	
(feet)	(meters)	ohm-feet	ohm-meters
2	0.6	270	82.3
4	1.2	210	63.9
6	1.8	217	66.0
8	2.4	213	64.8
10	3.0	195	59.4
20	6.1	159	48.6
30	9.1	139	42.5
50	15.2	110	33.5
100	30.5	1,627	496
200	61.0	50.2	15.3

*ER-02

Latitude	Longitude
35.048598°	-117.349019°

Description: 34°F, sunny, dry to damp soil conditions
North-South Transect

ELECTRODE SPACING		APPARENT RESISTIVITY	
(feet)	(meters)	ohm-feet	ohm-meters
2	0.6	470	143
4	1.2	78.7	24.0
6	1.8	35.8	10.9
8	2.4	86.0	26.2
10	3.0	155	47.1
20	6.1	40.4	12.3
30	9.1	41.3	12.6
50	15.2	91.2	27.8
100	30.5	31.5	9.6
200	61.0	1,018	310

Latitude	Longitude
35.049524°	-117.346767°

Date: 12/19/2020

East-West Transect

ELECTRODE SPACING		APPARENT RESISTIVITY	
(feet)	(meters)	ohm-feet	ohm-meters
2	0.6	175	53.2
4	1.2	61.0	18.6
6	1.8	222	67.7
8	2.4	163	49.8
10	3.0	27.6	8.4
20	6.1	21.3	6.5
30	9.1	33.8	10.3
50	15.2	258	78.5
100	30.5	1,332	406
200	61.0	3,481	1,061

*Due to site constraints, two different center points were used for the two transects for ER-02.

Westwood

Electrical Resistivity Test Results
Wenner 4-Electrode Method
Lockhart Solar II - San Bernardino County, California

ER-03

Latitude	Longitude
35.048806°	-117.356244°

Description: 61°F, sunny, dry to damp soil conditions
Northeast-Southwest Transect

Date: 12/18/2020

ELECTRODE SPACING		APPARENT RESISTIVITY	
(feet)	(meters)	ohm-feet	ohm-meters
2	0.6	2,400	732
4	1.2	618	188
6	1.8	520	159
8	2.4	305	93.0
10	3.0	167	50.9
20	6.1	848	259

Northwest-Southeast Transect

ELECTRODE SPACING		APPARENT RESISTIVITY	
(feet)	(meters)	ohm-feet	ohm-meters
2	0.6	2,124	647
4	1.2	603	184
6	1.8	335	102
8	2.4	2,151	656
10	3.0	393	120
20	6.1	2,966	904

ER-04

Latitude	Longitude
35.049253°	-117.342759°

Description: 54°F, sunny, dry to damp soil conditions
North-South Transect

Date: 12/18/2020

ELECTRODE SPACING		APPARENT RESISTIVITY	
(feet)	(meters)	ohm-feet	ohm-meters
2	0.6	39.4	12.0
4	1.2	28.5	8.7
6	1.8	23.6	7.2
8	2.4	21.0	6.4
10	3.0	24.0	7.3
20	6.1	39.0	11.9

East-West Transect

ELECTRODE SPACING		APPARENT RESISTIVITY	
(feet)	(meters)	ohm-feet	ohm-meters
2	0.6	45.3	13.8
4	1.2	28.2	8.6
6	1.8	24.6	7.5
8	2.4	21.7	6.6
10	3.0	19.4	5.9
20	6.1	16.4	5.0

ER-05

Latitude	Longitude
35.043549°	-117.346021°

Description: 46°F, sunny, dry to damp soil conditions
North-South Transect

Date: 12/18/2020

ELECTRODE SPACING		APPARENT RESISTIVITY	
(feet)	(meters)	ohm-feet	ohm-meters
2	0.6	426	130
4	1.2	314	95.8
6	1.8	1,817	554
8	2.4	1,372	418
10	3.0	187	57.1
20	6.1	775	236

East-West Transect

ELECTRODE SPACING		APPARENT RESISTIVITY	
(feet)	(meters)	ohm-feet	ohm-meters
2	0.6	422	129
4	1.2	157	48.0
6	1.8	2,077	633
8	2.4	491	150
10	3.0	420	128
20	6.1	1,533	467

Westwood

Electrical Resistivity Test Results
Wenner 4-Electrode Method
Lockhart Solar II - San Bernardino County, California

ER-06

Latitude	Longitude
35.043033°	-117.358206°

Description: 61°F, sunny, dry to damp soil conditions
North-South Transect

Date: 12/18/2020

ELECTRODE SPACING		APPARENT RESISTIVITY	
(feet)	(meters)	ohm-feet	ohm-meters
2	0.6	106	32.4
4	1.2	90.2	27.5
6	1.8	85.6	26.1
8	2.4	100	30.5
10	3.0	308	94.0
20	6.1	435	133

East-West Transect

ELECTRODE SPACING		APPARENT RESISTIVITY	
(feet)	(meters)	ohm-feet	ohm-meters
2	0.6	109	33.3
4	1.2	125	38.2
6	1.8	120	36.7
8	2.4	80.1	24.4
10	3.0	65.9	20.1
20	6.1	141	42.9

ER-07

Latitude	Longitude
35.038794°	-117.340774°

Description: 57°F, sunny, dry to damp soil conditions
North-South Transect

Date: 12/18/2020

ELECTRODE SPACING		APPARENT RESISTIVITY	
(feet)	(meters)	ohm-feet	ohm-meters
2	0.6	748	228
4	1.2	354	108
6	1.8	2,326	709
8	2.4	623	190
10	3.0	334	102
20	6.1	459	140

East-West Transect

ELECTRODE SPACING		APPARENT RESISTIVITY	
(feet)	(meters)	ohm-feet	ohm-meters
2	0.6	344	105
4	1.2	307	93.5
6	1.8	288	87.9
8	2.4	168	51.2
10	3.0	133	40.6
20	6.1	328	100

Appendix C

Laboratory Testing Report

BORING ID	SAMPLE ID	SAMPLE DEPTH (ft)	GRAIN-SIZE DISTRIBUTION ⁽¹⁾⁽³⁾				NATURAL MOISTURE CONTENT (%)	ATTERBERG LIMITS		pH	Sulfate Ions (mg/kg)	Chloride Ions (mg/kg)	Miller Box Electrical Resistivity (Ω-cm)		USCS CLASSIFICATION ⁽²⁾⁽³⁾	MODIFIED PROCTOR		THERMAL RESISTIVITY	
			% Gravel	% Sand	% Silt	% Clay		LL	PI				As-Received	Saturated		MAX DRY DENSITY (pcf)	OPTIMUM MOISTURE CONTENT (%)	As-Received (°C-cm/W)	Dry (°C-cm/W)
B-01	SS-03	5-6.5	0	58	42		5.4			9.2	21.9	14.9	9,300	1,500	Silty sand (SM)				
B-01	Bulk	2-5	0.6	81.1	14.0	4.3	1.9								Silty sand (SM)	124.4	9.7	198	286
B-02	SS-04	7.5-9	2	82	16		6.4								Silty sand (SM)				
B-03	Bulk	2-5	0.4	76.6	13.9	9.1	3.2								Silty sand (SM)	129.9	8.5	103	169
B-05	SS-01	0-1.5	4	77	19		2.2			8.5	1690	1570	6,700	300	Silty sand (SM)				
B-06	SS-02	2.5-4					4.1								Silty sand (SM)				
B-07	Bulk	2-5	0.9	75.2	14.5	9.4	2.9								Silty sand (SM)	133.2	7.5	121	194
B-08	SS-01	0-1.5					2.5								Silty sand (SM)				
B-09	SS-03	5-6.5	2	78	20		3.5			8.1	384	597	14,700	700	Silty sand (SM)				
B-10	SS-03	5-6.5	0	66	34		3.3			8.1	607	515	17,300	500	Silty sand (SM)				
B-11	SS-01	0-1.5					2.5								Silty sand (SM)				
B-12	SS-07	15-16.5	1	58	41		13.5	51.5	34.5	9.3	< 12.9	< 9.2	800	700	Clayey sand (SC)				
B-12	Bulk	1-4	1.9	85.1	13.0		2.1								Poorly graded sand with silt (SP-SM)	129.4	8.1		
B-13	SS-04	7.5-9	1	88	11		2.4								Poorly graded sand with silt (SP-SM)				
B-15	SS-06	12.5-14	0	95	5		1.4								Poorly graded sand with silt (SP-SM)				
B-16	Bulk	2-5	2.5	80.1	12.0	5.4	3.2								Silty sand (SM)	129.8	9.0	86	162
B-17	SS-01	0-1.5					1.7								Silty sand (SM)				
B-19	SS-06	12.5-14	0	61	39		6.6			9.2	222	507	2,400	500	Silty sand (SM)				
B-19	Bulk	2-5	1.2	74.5	15.1	9.2	4.1								Silty sand (SM)	135.6	7.0	90	148
B-20	SS-02	2.5-4					3.2								Poorly graded sand with silt (SP-SM)				

Footnotes:

(1) % Gravel = part. greater than 4.75 mm (#4 sieve); % Sand = part. between 0.075 mm (#200 sieve) and 4.75 mm (#4 sieve); % Silt = part. between 0.002 mm and 0.075 mm (#200 sieve); % Clay = part. smaller than 0.002 mm.

(2) Visual classification, informed where possible by laboratory testing

(3) Represents soil fraction captured in split spoon, does not include cobbles/large gravel that may have been in profile.



1 Systems Drive
Appleton, WI 54914

main (920) 735-6900

LABORATORY TESTS OF SOILS

ASTM: D2216, D4318, D6913

Project: Lockhart Solar II - Hinkley, CA

Report To: Terra-Gen Power, LLC

Date: 1/6/2021

Westwood Prj. No. R0030022.00

Date Delivered: 12/28/2021

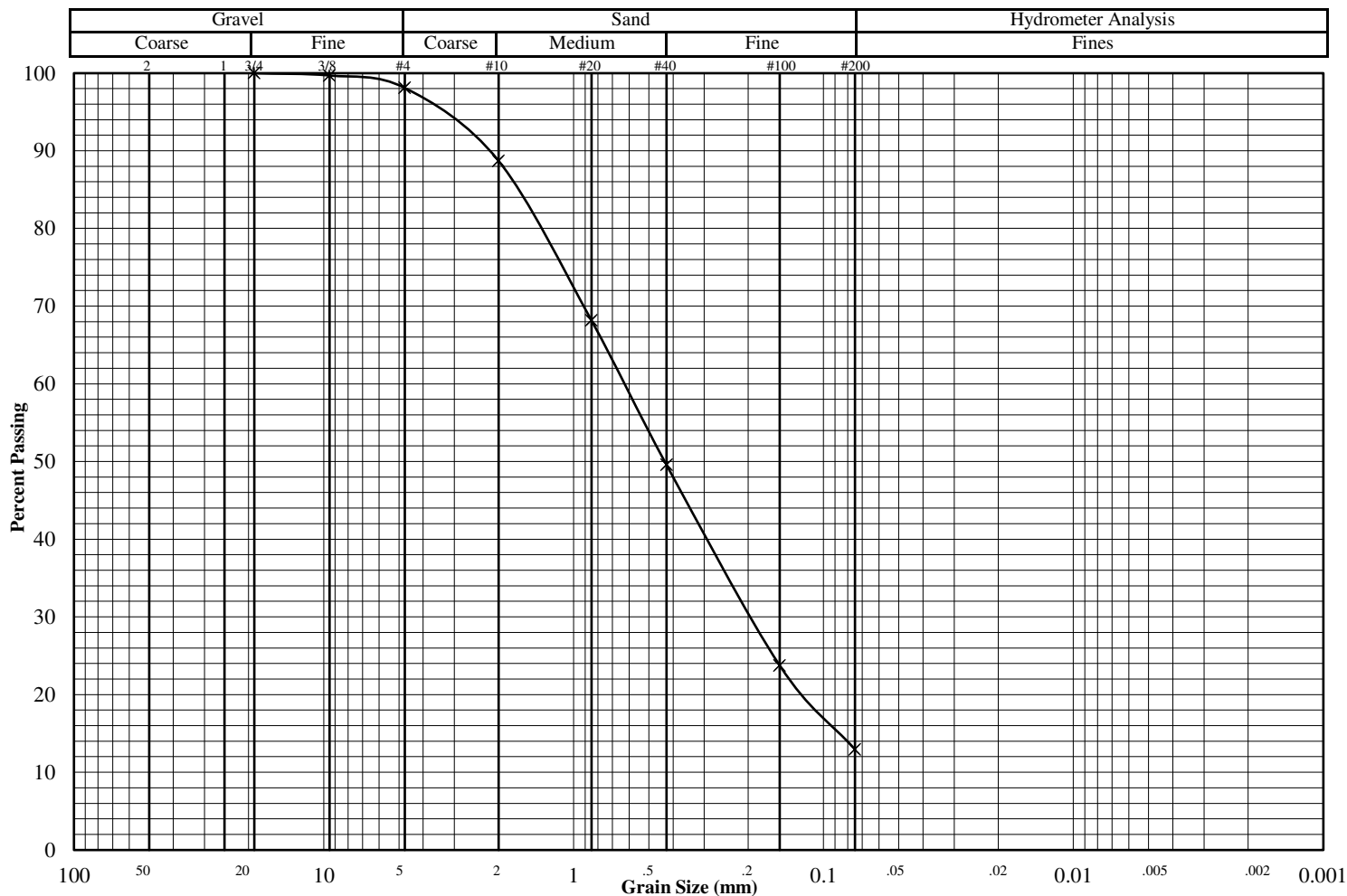
Boring	Depth	Sample	Moisture Content	Atterberg Limits			Percent Passing				
				LL	PL	PI	#4	#10	#40	#100	#200
B-01	5-6.5	SS-03	5.4%	51.5	17.1	34.5	100				42
B-02	7.5-9	SS-04	6.4%				98	82	51	28	16
B-05	0-1.5	SS-01	2.2%				96				19
B-06	2.5-4	SS-02	4.1%								
B-08	0-1.5	SS-01	2.5%								
B-09	5-6.5	SS-03	3.5%				98	89	54	32	20
B-10	5-6.5	SS-03	3.3%				100	97	87	63	34
B-11	0-1.5	SS-01	2.5%								
B-12	15-16.5	SS-07	13.5%				99				41
B-13	7.5-9	SS-04	2.4%				99				11
B-15	12.5-14	SS-06	1.4%				100				5
B-17	0-1.5	SS-01	1.7%								
B-19	12.5-14	SS-06	6.6%				100				39
B-20	2.5-4	SS-02	3.2%								

Grain Size Distribution ASTM D422-16

Job No. : **12949**

Project:	Lockhart Solar II	Test Date:	12/31/20
Reported To:	Westwood Surveying & Engineering	Report Date:	1/4/21

	Location / Boring No.	Sample No.	Depth (ft)	Sample Type	Soil Classification
*	B-12		1-4	Bulk	Silty Sand (SM/SP-SM)
•					
◇					



Additional Results

Liquid Limit
Plastic Limit
Plasticity Index
ASTM:D4316
Water Content
ASTM:D2216
Dry Density (pcf)
ASTM:D7263
Specific Gravity
ASTM:D854
Porosity
Organic Content
ASTM:D2974
pH
ASTM:D4972 Method B

	*	•	◇
Liquid Limit	N/A		
Plastic Limit	N/A		
Plasticity Index	NP		
Water Content	2.4		
Dry Density (pcf)			
Specific Gravity			
Porosity			
Organic Content			
pH			

	Percent Passing		
	*	•	◇
Mass (g)	18181.8		
2"			
1.5"			
1"			
3/4"	100.0		
3/8"	99.7		
#4	98.1		
#10	88.7		
#20	68.2		
#40	49.6		
#100	23.8		
#200	13.0		

	*	•	◇
D ₆₀			
D ₃₀			
D ₁₀			
C _u			
C _c			

Remarks:

(* = assumed)

9530 James Ave South

SOIL ENGINEERING
TESTING, INC.

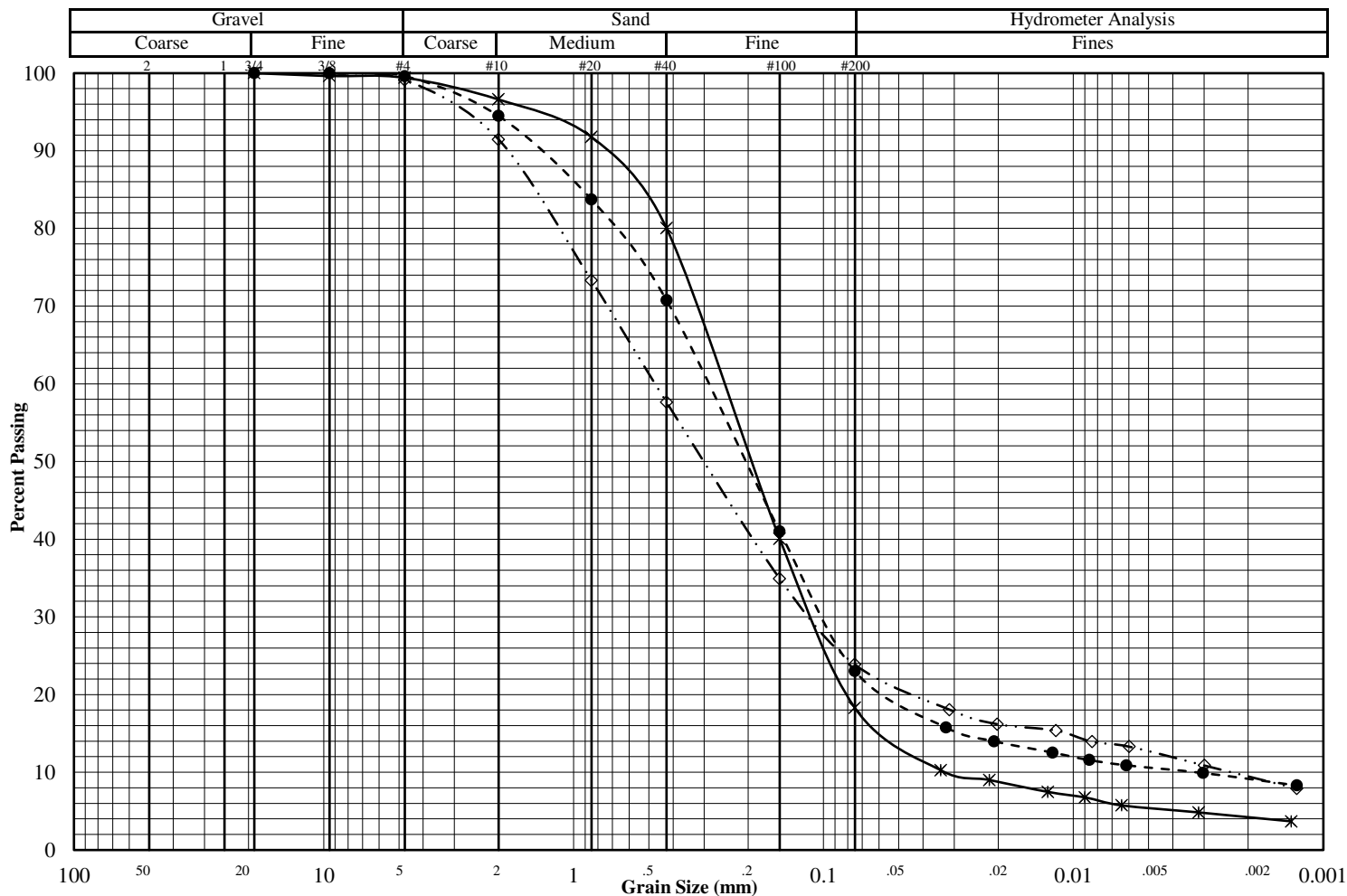
Bloomington, MN 55431

Grain Size Distribution ASTM D422-16

Job No. : **12949**

Project:	Lockhart Solar II	Test Date:	12/31/20
Reported To:	Westwood Surveying & Engineering	Report Date:	1/4/21

	Location / Boring No.	Sample No.	Depth (ft)	Sample Type	Soil Classification
*	B-01		2-5	Bulk	Silty Sand (SM)
●	B-03		2-5	Bulk	Silty Sand (SM)
◇	B-07		2-5	Bulk	Silty Clayey Sand (SC-SM)



Additional Results

	*	●	◇
Liquid Limit	N/A	N/A	22
Plastic Limit	N/A	N/A	18
Plasticity Index	NP	NP	4
Water Content	1.9	3.2	2.9
Dry Density (pcf)			
Specific Gravity	2.68*	2.68*	2.68*
Porosity			
Organic Content			
pH			

(* = assumed)

	Percent Passing		
Mass (g)	*	●	◇
2"	19405.7	19930.5	19926.9
1.5"			
1"			
3/4"	100.0	100.0	
3/8"	99.6	100.0	100.0
#4	99.4	99.6	99.1
#10	96.6	94.5	91.5
#20	91.8	83.7	73.3
#40	80.0	70.8	57.6
#100	40.1	41.0	34.9
#200	18.3	23.0	23.9

	*	●	◇
D ₆₀			
D ₃₀			
D ₁₀			
C _u			
C _c			

Remarks:

Grain Size Distribution ASTM D422-16

Job No. : **12949**

Project: Lockhart Solar II

Test Date: 12/31/20

Reported To: Westwood Surveying & Engineering

Report Date: 1/4/21

	Location / Boring No.	Sample No.	Depth (ft)	Sample Type	Soil Classification
Spec 1	B-01		2-5	Bulk	Silty Sand (SM)
Spec 2	B-03		2-5	Bulk	Silty Sand (SM)
Spec 3	B-07		2-5	Bulk	Silty Clayey Sand (SC-SM)

Sieve Data

Specimen 1		Specimen 2		Specimen 3	
Sieve	% Passing	Sieve	% Passing	Sieve	% Passing
2"		2"		2"	
1.5"		1.5"		1.5"	
1"		1"		1"	
3/4"	100.0	3/4"	100.0	3/4"	
3/8"	99.6	3/8"	100.0	3/8"	100.0
#4	99.4	#4	99.6	#4	99.1
#10	96.6	#10	94.5	#10	91.5
#20	91.8	#20	83.7	#20	73.3
#40	80.0	#40	70.8	#40	57.6
#100	40.1	#100	41.0	#100	34.9
#200	18.3	#200	23.0	#200	23.9

Hydrometer Data

Specimen 1		Specimen 2		Specimen 3	
Diameter (mm)	% Passing	Diameter	% Passing	Diameter	% Passing
0.034	10.3	0.032	15.8	0.031	18.1
0.022	9.0	0.021	14.0	0.020	16.2
0.013	7.5	0.012	12.6	0.012	15.4
0.009	6.8	0.009	11.6	0.008	13.9
0.006	5.8	0.006	10.9	0.006	13.3
0.003	4.8	0.003	9.9	0.003	10.9
0.001	3.7	0.001	8.3	0.001	7.9

Remarks

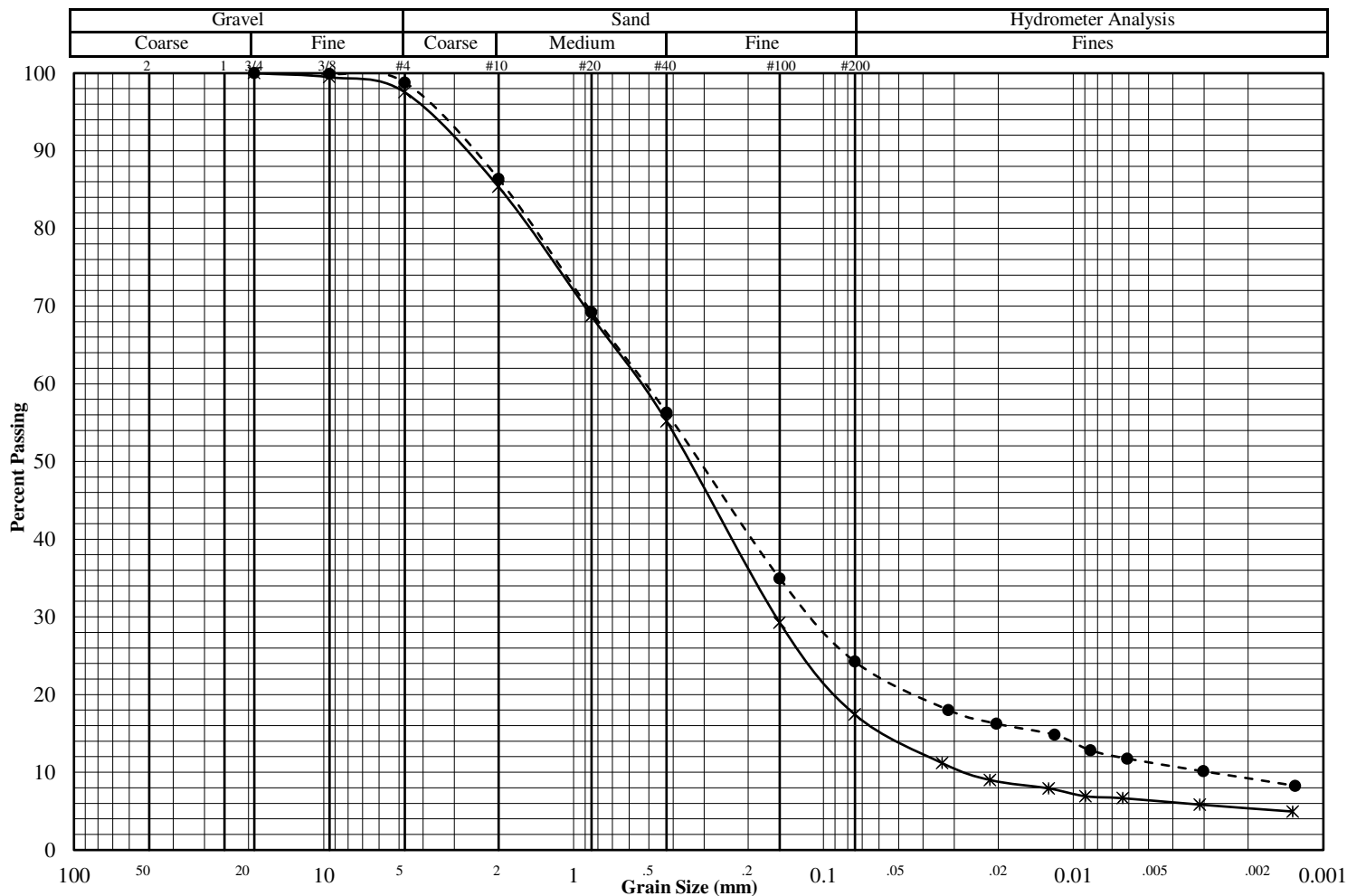
Specimen 1	Specimen 2	Specimen 3

Grain Size Distribution ASTM D422-16

Job No. : **12949**

Project:	Lockhart Solar II	Test Date:	12/31/20
Reported To:	Westwood Surveying & Engineering	Report Date:	1/4/21

	Location / Boring No.	Sample No.	Depth (ft)	Sample Type	Soil Classification
*	B-16		2-5	Bulk	Silty Sand w/a trace of gravel (SM)
●	B-19		2-5	Bulk	Silty Clayey Sand (SC-SM)
◇					



Grain Size Distribution ASTM D422-16

Job No. : **12949**

Project:	Lockhart Solar II	Test Date:	12/31/20
Reported To:	Westwood Surveying & Engineering	Report Date:	1/4/21
Location / Boring No.	Sample No.	Depth (ft)	Sample Type
Soil Classification			
Spec 1	B-16	2-5	Bulk
Spec 2	B-19	2-5	Bulk
Spec 3			

Sieve Data

Specimen 1		Specimen 2		Specimen 3	
Sieve	% Passing	Sieve	% Passing	Sieve	% Passing
2"		2"		2"	
1.5"		1.5"		1.5"	
1"		1"		1"	
3/4"	100.0	3/4"	100.0	3/4"	
3/8"	99.5	3/8"	99.9	3/8"	
#4	97.5	#4	98.8	#4	
#10	85.4	#10	86.4	#10	
#20	68.7	#20	69.2	#20	
#40	55.2	#40	56.3	#40	
#100	29.3	#100	35.0	#100	
#200	17.4	#200	24.3	#200	

Hydrometer Data

Specimen 1		Specimen 2		Specimen 3	
Diameter (mm)	% Passing	Diameter	% Passing	Diameter	% Passing
0.033	11.2	0.032	18.0		
0.022	9.0	0.020	16.3		
0.013	7.9	0.012	14.8		
0.009	6.9	0.009	12.8		
0.006	6.7	0.006	11.8		
0.003	5.8	0.003	10.1		
0.001	4.9	0.001	8.3		

Remarks

Specimen 1	Specimen 2	Specimen 3

Thermal Resistivity Report ASTM D:5334

Project: **Lockhart Solar II**

Job #: **12949**

Client: **Westwood Surveying & Engineering**

Date: **1/15/21**

Boring	Specimen Type	Depth (ft)	Type	Classification	Proctor Values		Initial Conditions			Dry
					Maximum Dry Density (PCF)	Optimum Moisture (%)	Dry Density (PCF)	WC (%)	Thermal Resistivity (°C-cm/W)	Thermal Resistivity (°C-cm/W)
B-01	Reconstituted	2-5	Bulk	Silty Sand (SM)	124.4	9.7%	112.3	1.8%	198	286
B-03	Reconstituted	2-5	Bulk	Silty Sand (SM)	129.9	8.5%	115.7*	3.0%	103	169
B-07	Reconstituted	2-5	Bulk	Silty Clayey Sand (SC-SM)	133.2	7.5%	118.4*	2.5%	121	194
B-16	Reconstituted	2-5	Bulk	Silty Sand with a trace of gravel (SM)	129.8	9.0%	116.8	3.3%	86	162
B-19	Reconstituted	2-5	Bulk	Silty Clayey Sand (SC-SM)	135.6	7.0%	118.0*	3.8%	90	148
	Specimens reconstituted to approximately 90% of maximum modified proctor density near the as received moisture content.									
	*Specimen compacted to maximum achievable density.									

9530 James Ave South



Bloomington, MN 55431

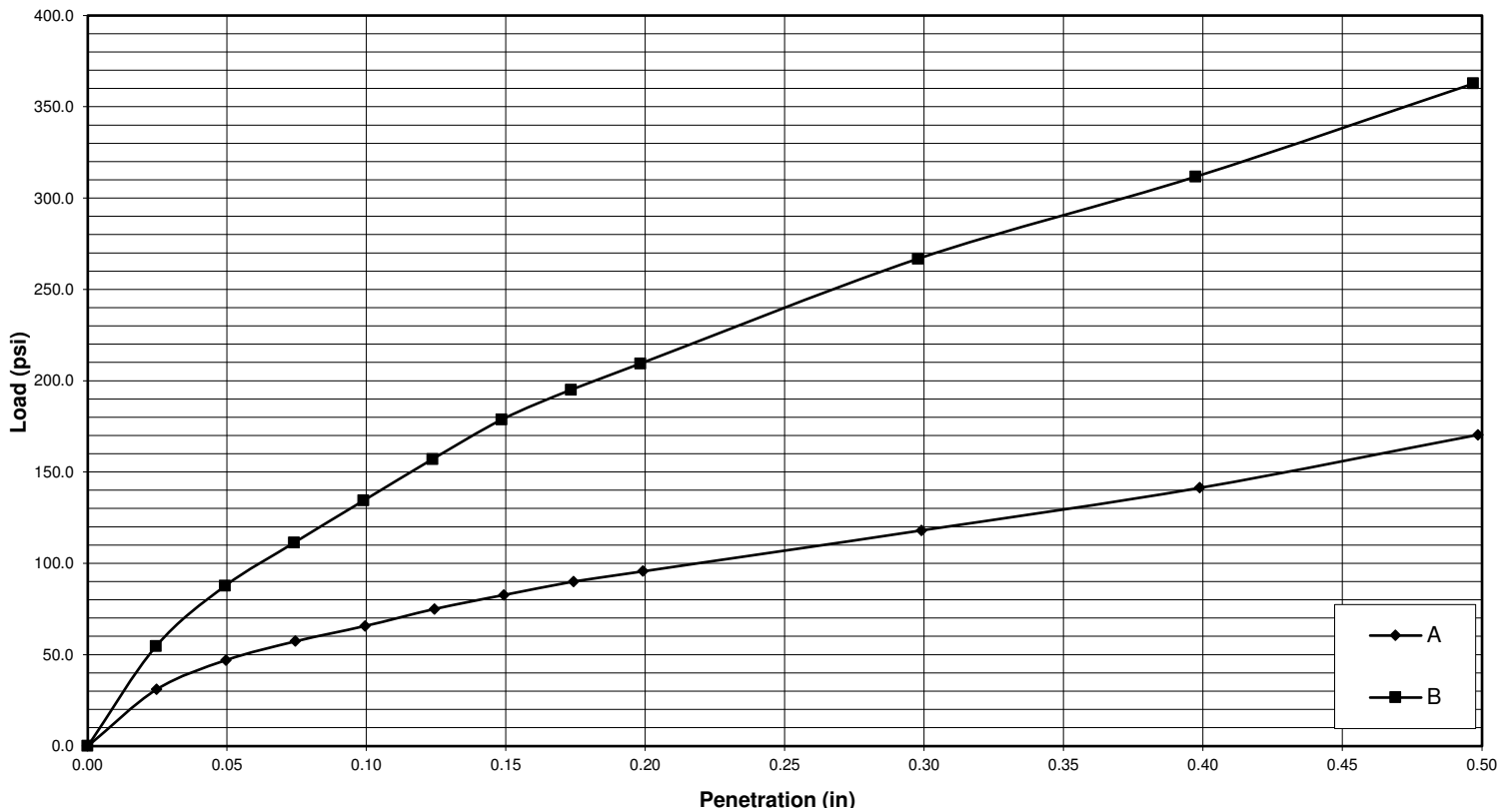
<http://www.soilengineeringtesting.com>

California Bearing Ratio ASTM:D1883

Project: Lockhart Solar II		Job: 12949
Client: Westwood Surveying & Engineering		Date: 1/12/21
Boring #: B-12		Procedural Method:
Sample:		Specimens compacted to approximately 90% and 95% of maximum modified proctor density at optimum moisture content. Specimens soaked for a period of 4 days before CBR test was performed.
Depth (ft): 1-4	Type: Bulk	
Location:		
Classification: Silty Sand (SM/SP-SM)		
Laboratory Moisture-Density Values		Index Properties
Method: ASTM:D1557 Method B		LL: Gs:
Maximum Dry Density (PCF): 129.4		PL: Organic Content:
Optimum Water Content: 8.1%		PI: pH:
Initial Molding Conditions		
Specimen	A	B
Compaction Hammer:	5 lb	5 lb
Number of Layers:	3	3
Blows per Layer:	NA	NA
Initial Moisture Content:	8.1%	8.1%
Initial Dry Density (PCF)	116.3	122.8
Relative Compaction	89.9%	94.9%
Soaking Phase		
Days Soaked	4	4
Surcharge (psf)	50	50
Total Swell (%)	-0.7%	0.3%
Penetration Phase		
Surcharge (psf)	50	50
Corrected CBR Values		
at 0.1 inch (%)	6.6%	13.4%
at 0.2 inch (%)	6.4%	14.0%
Moisture Content After Penetration		
Top 1" of Specimen:	13.1%	11.8%
Average of specimen:	11.5%	9.9%

Stress vs. Penetration Graph

Corrected Penetration Plot

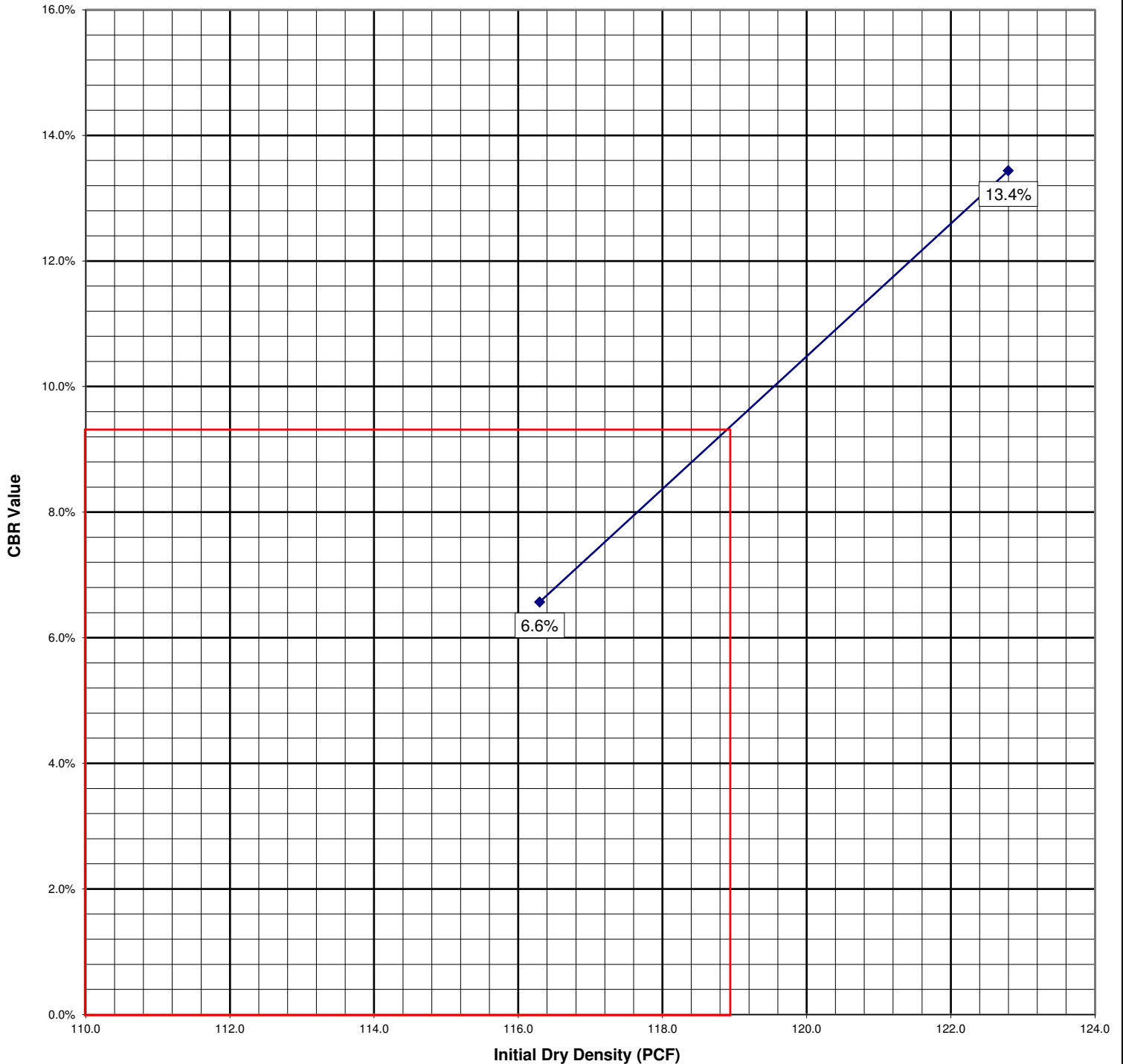


California Bearing Ratio ASTM:D1883

Project:	Lockhart Solar II	Job:	12949
Client:	Westwood Surveying & Engineering	Date:	1/12/21
Boring #: B-12	Procedural Method:		
Sample:	Specimens compacted to approximately 90% and 95% of maximum modified proctor density at optimum moisture content. Specimens soaked for a period of 4 days before CBR test was performed.		
Depth (ft): 1-4			
Type: Bulk			
Location:			
Classification:	Silty Sand (SM/SP-SM)		

Test Plot

Dry Density vs CBR



Moisture Density Curve ASTM: D1557, Method B

Project: **Lockhart Solar II**

Date: **1/12/21**

Client: **Westwood Surveying & Engineering**

Job No. **12949**

Boring No. **B-12**

Sample:

Depth(ft): **1-4**

Location:

Soil Type: **Silty Sand (SM/SP-SM)**

As Received W.C. (%): **2.1**

LL:

PL:

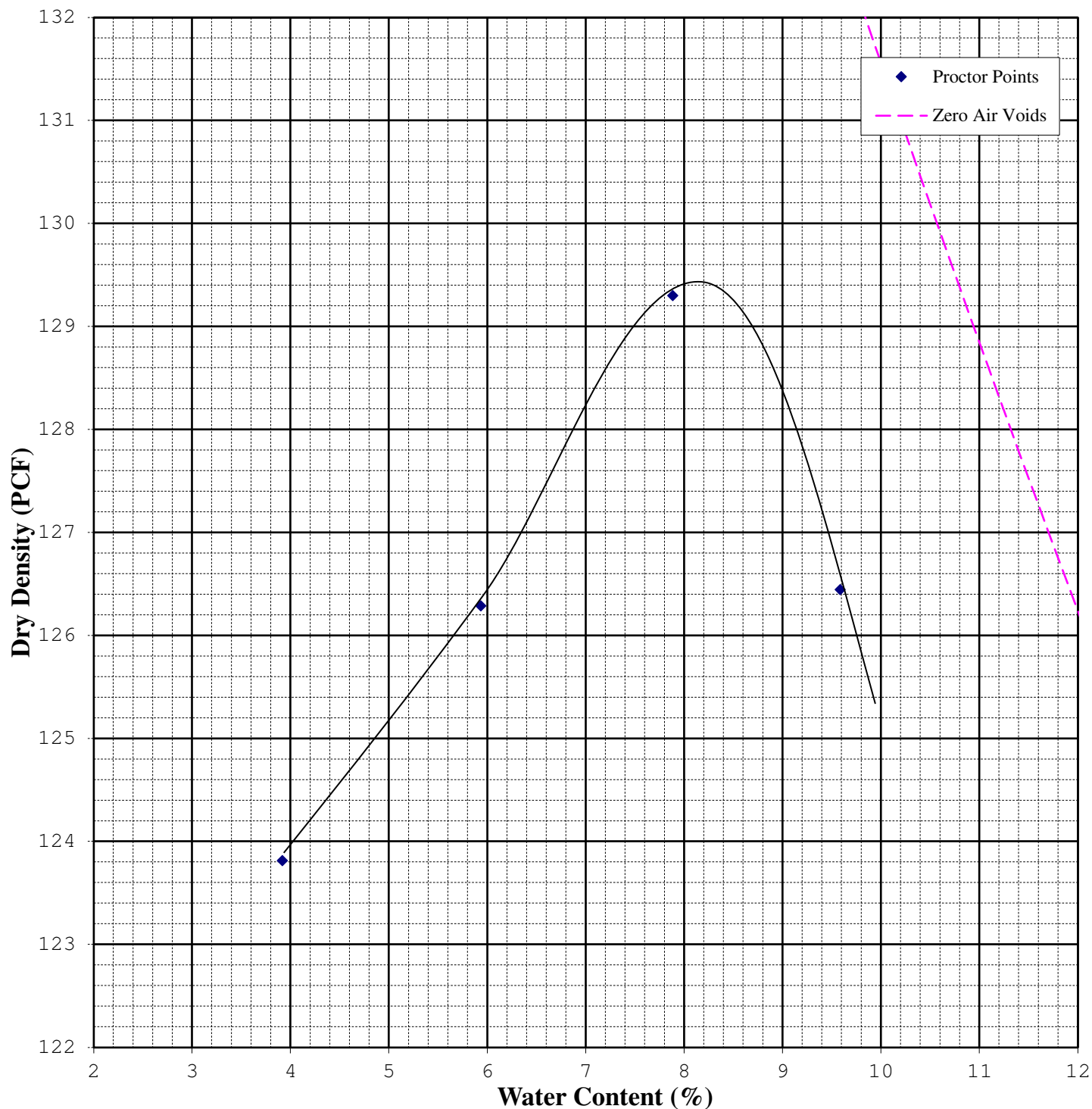
PI: **NP**

Specific Gravity: **2.67**

*Assumed

Maximum Dry Density (pcf): **129.4**

Opt. Water Content (%): **8.1**



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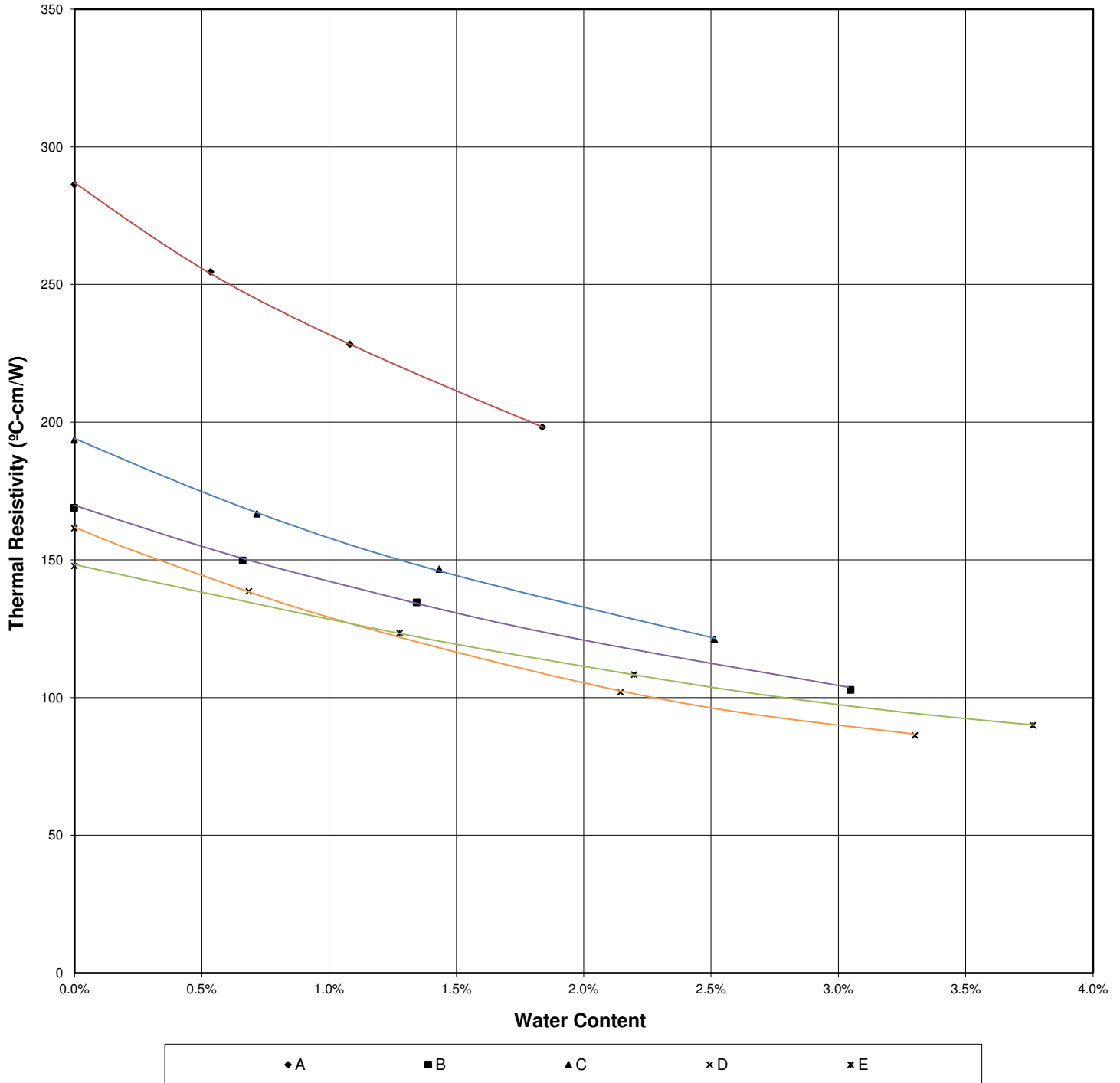
Thermal Resistivity Report ASTM D:5334

Project: Lockhart Solar II
 Client: Westwood Surveying & Engineering

Job: 12949
 Date: 1/15/21

	Boring	Depth (ft)
Specimen A:	B-01	2-5
Specimen B:	B-03	2-5
Specimen C:	B-07	2-5
Specimen D:	B-16	2-5
Specimen E:	B-19	2-5

Thermal Dryout Curves (Water Content vs. Resistivity)



Moisture Density Curve ASTM: D1557, Method B

Project: **Lockhart Solar II**

Date: **1/12/21**

Client: **Westwood Surveying & Engineering**

Job No. **12949**

Boring No. **B-01**

Sample:

Depth(ft): **2-5**

Location:

Soil Type: **Silty Sand (SM)**

As Received W.C. (%): **1.9**

LL:

PL:

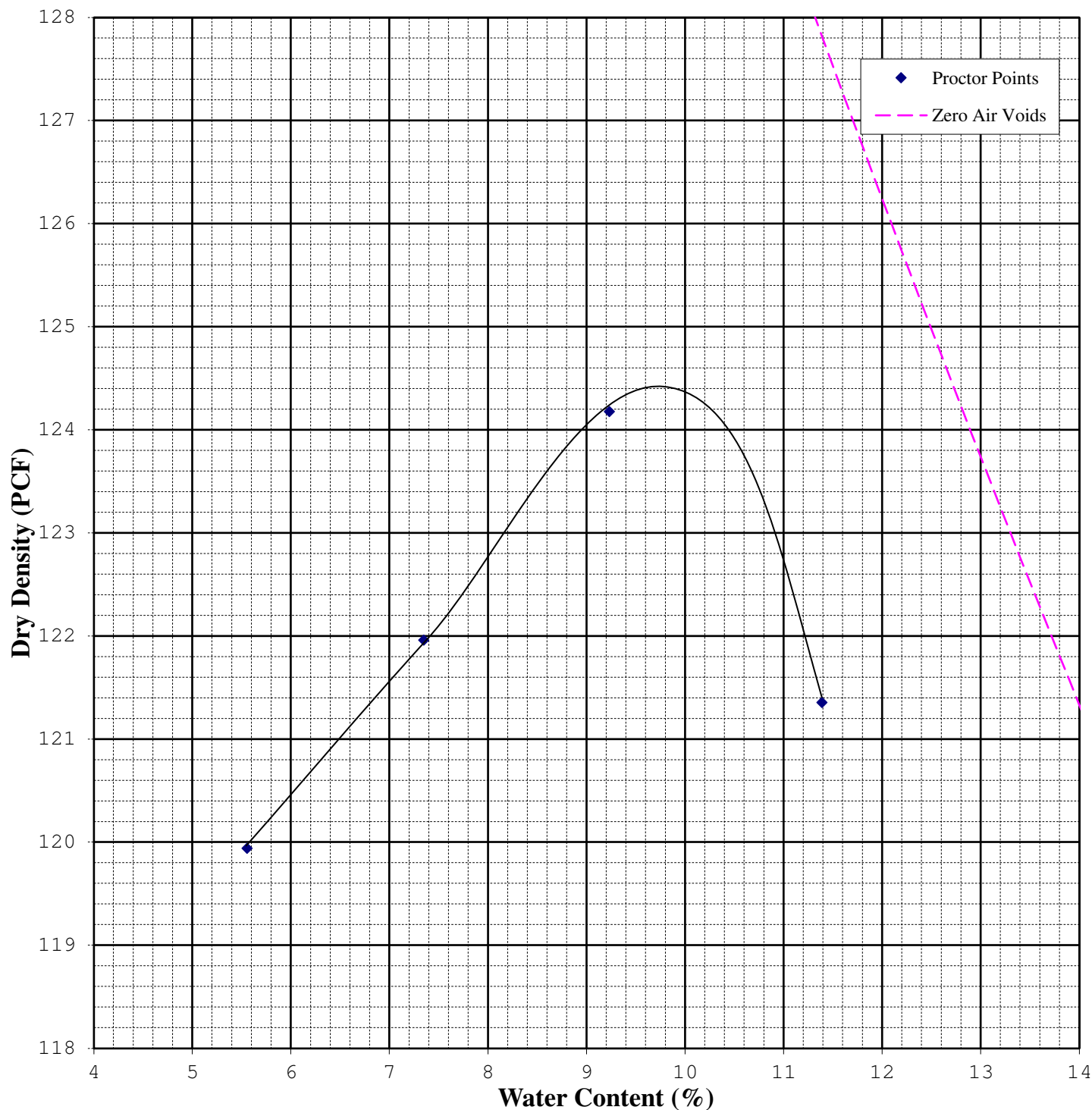
PI: **NP**

Specific Gravity: **2.67**

*Assumed

Maximum Dry Density (pcf): **124.4**

Opt. Water Content (%): **9.7**



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Moisture Density Curve ASTM: D1557, Method B

Project: **Lockhart Solar II**

Date: **1/12/21**

Client: **Westwood Surveying & Engineering**

Job No. **12949**

Boring No. **B-03**

Sample:

Depth(ft): **2-5**

Location:

Soil Type: **Silty Sand (SM)**

As Received W.C. (%): **3.2**

LL:

PL:

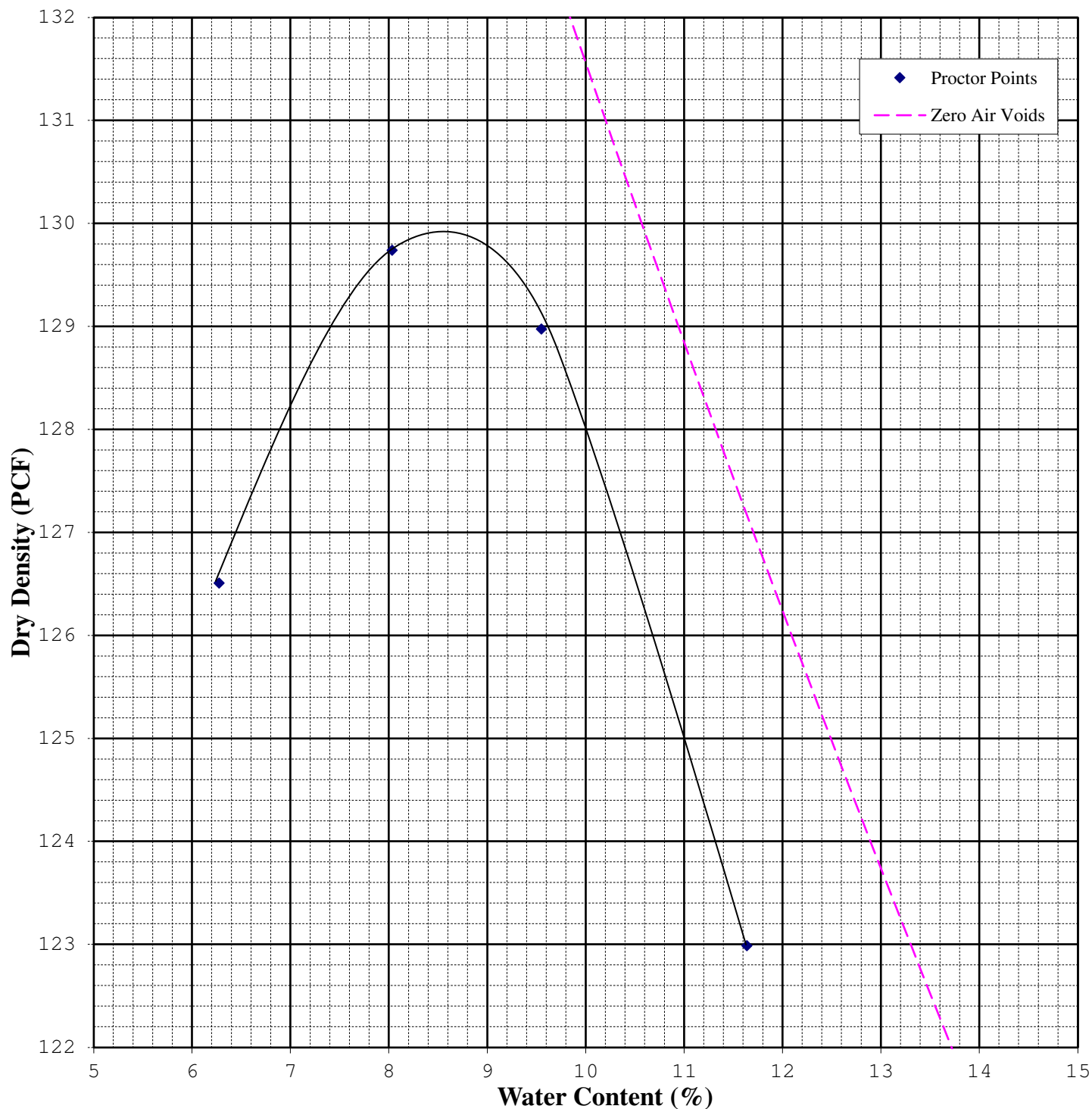
PI: **NP**

Specific Gravity: **2.67**

*Assumed

Maximum Dry Density (pcf): **129.9**

Opt. Water Content (%): **8.5**



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Moisture Density Curve ASTM: D1557, Method B

Project: **Lockhart Solar II**

Date: **1/12/21**

Client: **Westwood Surveying & Engineering**

Job No. **12949**

Boring No. **B-07**

Sample:

Depth(ft): **2-5**

Location:

Soil Type: **Silty Clayey Sand (SC-SM)**

As Received W.C. (%): **2.9**

LL: **22**

PL: **18**

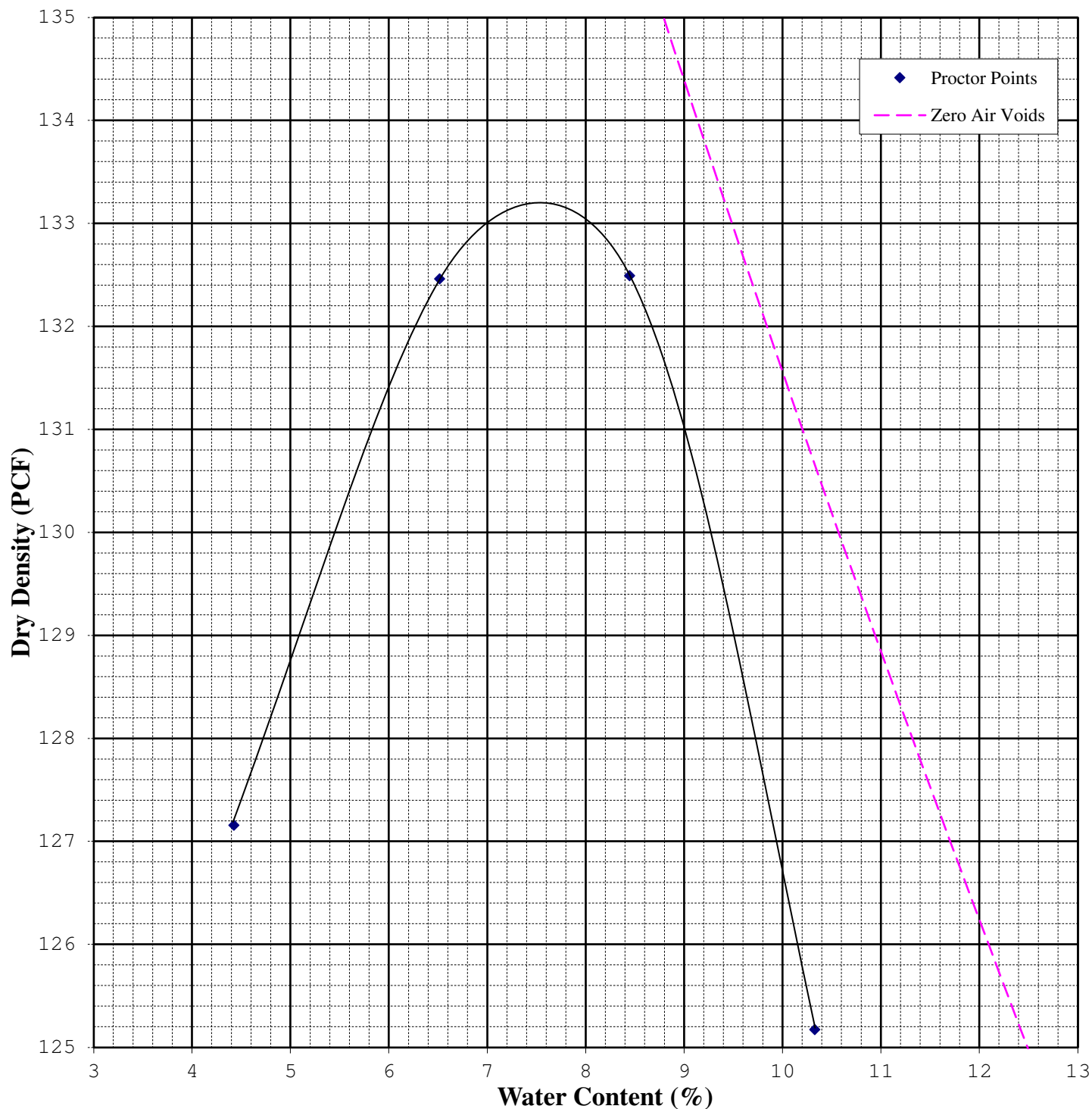
PI: **4**

Specific Gravity: **2.67**

*Assumed

Maximum Dry Density (pcf): **133.2**

Opt. Water Content (%): **7.5**



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Moisture Density Curve ASTM: D1557, Method B

Project: **Lockhart Solar II**

Date: **1/12/21**

Client: **Westwood Surveying & Engineering**

Job No. **12949**

Boring No. **B-16**

Sample:

Depth(ft): **2-5**

Location:

Soil Type: **Silty Sand w/a trace of gravel (SM)**

As Received W.C. (%): **3.2**

LL: **19**

PL: **NA**

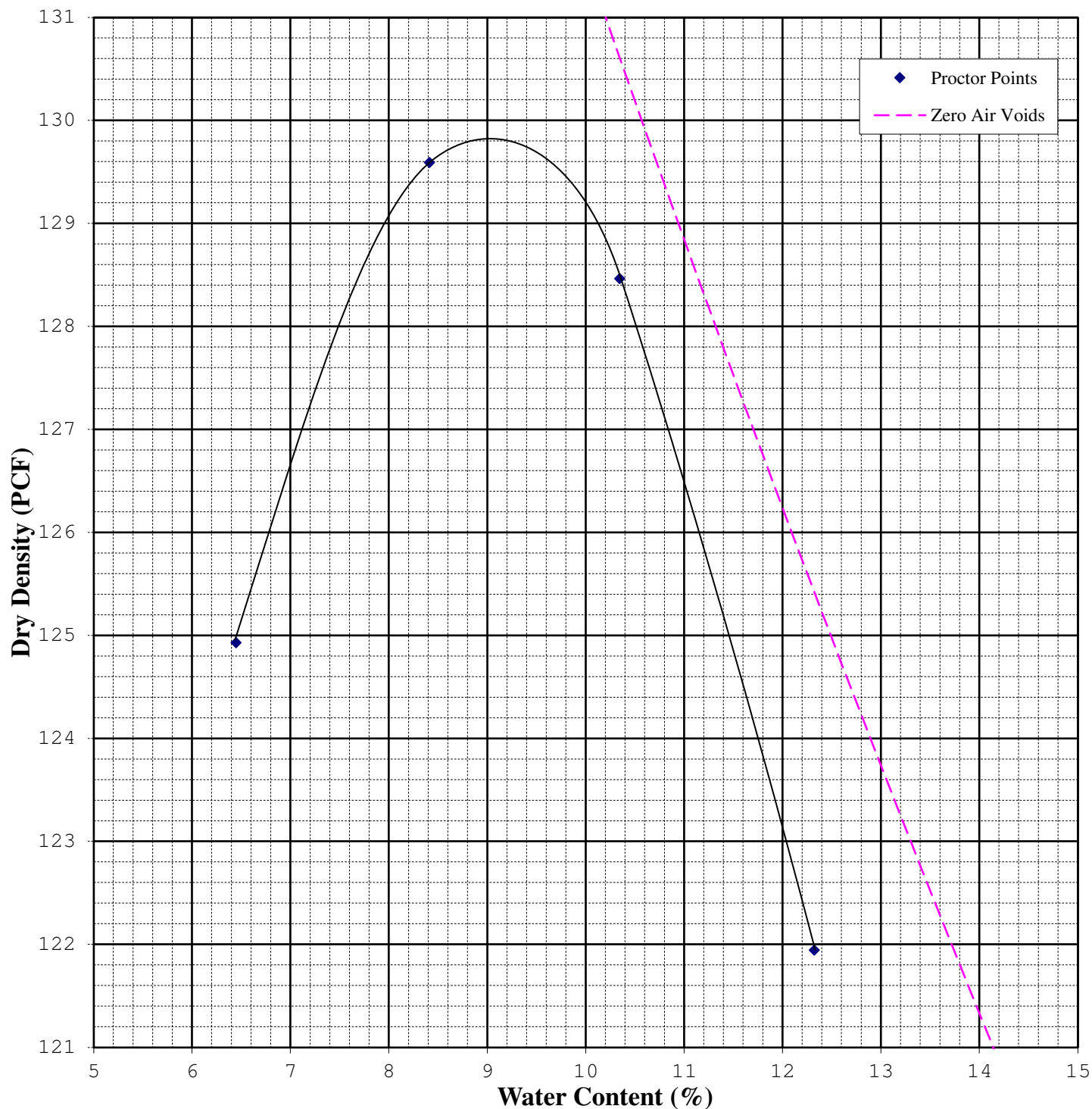
PI: **NP**

Specific Gravity: **2.67**

*Assumed

Maximum Dry Density (pcf): **129.8**

Opt. Water Content (%): **9.0**



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Moisture Density Curve ASTM: D1557, Method B

Project: **Lockhart Solar II**

Date: **1/15/21**

Client: **Westwood Surveying & Engineering**

Job No. **12949**

Boring No. **B-19**

Sample:

Depth(ft): **2-5**

Location:

Soil Type: **Silty Clayey Sand (SC-SM)**

As Received W.C. (%): **4.1**

LL: **22**

PL: **16**

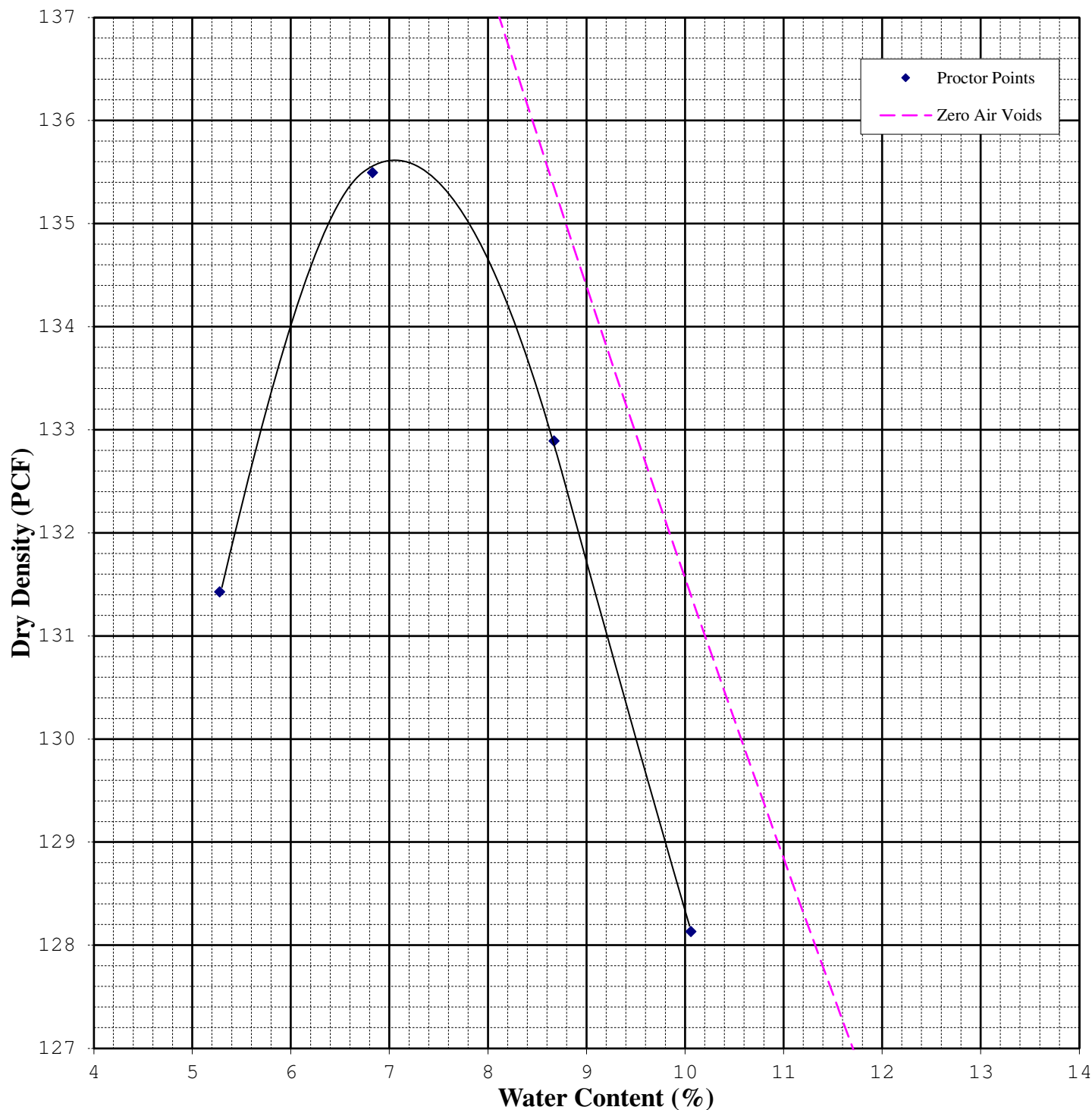
PI: **6**

Specific Gravity: **2.67**

*Assumed

Maximum Dry Density (pcf): **135.6**

Opt. Water Content (%): **7.0**



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1 Systems Drive
Appleton, WI 54914

main (920) 735-6900

LABORATORY TESTS OF SOILS

ASTM: G187, D4972, D2974 Method C

Project: Lockhart Solar II - Hinkley, CA

Report To: Terra-Gen Power, LLC

Date: 1/6/2021

Westwood Prj. No. R0030022.00

Date Delivered: 1/0/1900

			Electrical Resistivity								
			As-Received				Saturated				
			Temp.	Resistance	Resistivity		Temp.	Resistance	Resistivity		
Boring	Depth	Sample	Moist%	°C	(Ohms)	(Ohms-cm)*	Moist%	°C	(Ohms)	(Ohms-cm)*	pH
B-01	5-6.5	SS-03	5.4	20.0	14,000	9,300	25.3	20.8	2,300	1,500	9.2
B-05	0-1.5	SS-01	2.2	20.5	10,000	6,700	17.7	20.1	390	300	8.5
B-09	5-6.5	SS-03	3.5	20.5	22,000	14,700	17.1	19.9	1,000	700	8.1
B-10	5-6.5	SS-03	3.3	20.2	26,000	17,300	20.9	19.8	750	500	8.1
B-12	15-16.5	SS-07	13.5	20.3	1,200	800	27.2	19.9	1,000	700	9.3
B-19	12.5-14	SS-06	6.6	20.5	3,600	2,400	28.5	19.9	800	500	9.2

* Soil box factor = 0.67

Synergy Environmental Lab, INC

1990 Prospect Ct., Appleton, WI 54914 *P 920-830-2455 * F 920-733-0631

PAUL EGGEN
WESTWOOD PROFESSIONAL SERVICES
12701 WHITEWATER DRIVE
MINNETONKA, MN 55343

Report Date 15-Jan-21

Project Name LOCKHART SOLAR 2
Project # R0030022.00

Invoice # E38952

Lab Code 5038952A
Sample ID B-01 SS-03
Sample Matrix Soil
Sample Date 12/29/2020

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
General										
General										
Solids Percent	97.8	%			1	5021		12/31/2020	NJC	1

Wet Chemistry

General

Sulfate, Unfiltered	21.9 "J"	mg/kg	12.9	43	1	9056		1/5/2021	ESC	1
Chlorides, Unfiltered	14.9 "J"	mg/kg	9.2	30.7	1	9056		1/5/2021	ESC	1

Lab Code 5038952B
Sample ID B-05 SS-01
Sample Matrix Soil
Sample Date 12/29/2020

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
General										
General										
Solids Percent	98.7	%			1	5021		12/31/2020	NJC	1

Wet Chemistry

General

Sulfate, Unfiltered	1690	mg/kg	64.5	215	5	9056		1/5/2021	ESC	1
Chlorides, Unfiltered	1570	mg/kg	46	153.5	5	9056		1/5/2021	ESC	1

Project Name LOCKHART SOLAR 2
Project # R0030022.00

Invoice # E38952

Lab Code 5038952C
Sample ID B-09 SS-03
Sample Matrix Soil
Sample Date 12/29/2020

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
General										
General										
Solids Percent	98.6	%			1	5021		12/31/2020	NJC	1
Wet Chemistry										
General										
Sulfate, Unfiltered	384	mg/kg	12.9	43	1	9056		1/5/2021	ESC	1
Chlorides, Unfiltered	597	mg/kg	9.2	30.7	1	9056		1/5/2021	ESC	1

Lab Code 5038952D
Sample ID B-10 SS-03
Sample Matrix Soil
Sample Date 12/29/2020

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
General										
General										
Solids Percent	98.5	%			1	5021		12/31/2020	NJC	1
Wet Chemistry										
General										
Sulfate, Unfiltered	607	mg/kg	64.5	215	5	9056		1/5/2021	ESC	1
Chlorides, Unfiltered	515	mg/kg	46	153.5	5	9056		1/5/2021	ESC	1

Lab Code 5038952E
Sample ID B-12 SS-07
Sample Matrix Soil
Sample Date 12/29/2020

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
General										
General										
Solids Percent	97.9	%			1	5021		12/31/2020	NJC	1
Wet Chemistry										
General										
Sulfate, Unfiltered	< 129	mg/kg	129	430	10	9056		1/5/2021	ESC	1 49
Chlorides, Unfiltered	< 92	mg/kg	92	307	10	9056		1/5/2021	ESC	1 49

Project Name LOCKHART SOLAR 2
Project # R0030022.00

Invoice # E38952

Lab Code 5038952F
Sample ID B-19 SS-06
Sample Matrix Soil
Sample Date 12/29/2020

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
General										
General										
Solids Percent	98.4	%			1	5021		12/31/2020	NJC	1
Wet Chemistry										
General										
Sulfate, Unfiltered	222 "J"	mg/kg	129	430	10	9056		1/5/2021	ESC	1 49
Chlorides, Unfiltered	507	mg/kg	92	307	10	9056		1/5/2021	ESC	1

"J" Flag: Analyte detected between LOD and LOQ

LOD Limit of Detection

LOQ Limit of Quantitation

<i>Code</i>	<i>Comment</i>
-------------	----------------

1	Laboratory QC within limits.
---	------------------------------

49	Sample diluted to compensate for matrix interference.
----	---

ESC denotes sub contract lab - Certification #998093910

All solid sample results reported on a dry weight basis unless otherwise indicated. All LOD's and LOQ's are adjusted for dilutions but not dry weight. Subcontracted results are denoted by SUB in the analyst field.

Authorized Signature



Appendix D

Pile Load Testing Report

PILE LOAD TESTING REPORT

Lockhart Solar II Project

San Bernardino County, California

JANUARY 8, 2020

PREPARED FOR:



PREPARED BY:

Westwood

Pile Load Testing Report

Lockhart Solar II Project

San Bernardino County, California

Retained By:

Terra-Gen, LLC
11455 El Camino Real, Suite 160
San Diego, CA 92130
(646) 829-3900

Prepared By:

Westwood Professional Services
12701 Whitewater Drive, Suite 300
Minnetonka, MN 55343
(952) 937-5150

January 8, 2020

Westwood

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1.0 Introduction

Westwood Professional Services, Inc. (Westwood) was retained by Terra-Gen, LLC to perform axial tensile, lateral, and compression pile load tests at the Lockhart Solar II Project in San Bernardino County, CA.

A total of twenty-eight (28) W6x9 non-galvanized prototype test piles were installed by Westwood on December 12, 2020. Piles were installed at previously soil boring locations chosen to gain spatial coverage of the project site and to correlate load testing results to the soil borings. Pile load testing (axial tensile, lateral, and axial compression) was subsequently completed between December 14, 2020 and December 17, 2020. Pile locations are displayed in Figure 1 in Appendix 1.

2.0 Scope of Work

Westwood's scope included the following:

- Two (2) axial tensile pile load tests at the twelve (12) pile locations.
- Two (2) lateral pile load tests at the twelve (12) pile locations.
- One (1) axial compression pile load tests at the four (4) pile locations.
- Data report presenting test results.

3.0 Test Pile Installation

3.1 Test Pile Installation Summary

Twenty-eight (28) prototype test piles were installed by Frattalone Companies on December 12. All twenty-eight (28) were installed at eight (8) locations with two (2) piles and four (4) locations with three (3) piles. Table 1-1 below summarizes piles installed at each of the predesign pile locations.

Table 3-1: Piles Installed at Each Location

Number of Locations	Pile #	Pile Section	Pile Length (ft)	Planned Embedment Depth (ft)	Test Performed
8	1	W6x9	11	6	Axial Tensile and Lateral
	2	W6x9	13	8	Axial Tensile and Lateral
4	1	W6x9	11	6	Axial Tensile and Lateral
	2	W6x9	13	8	Axial Tensile and Lateral
	3	W6x9	11	6	Axial Compression

Test pile locations are displayed in Test Pile Location Figure in Appendix 1. No refusals were encountered when the piles were installed. The installed test piles utilized W6x9 non-galvanized I-beams conforming to ASTM standard A992. In general, test piles were installed at locations corresponding to the geotechnical soil boring locations. All piles were installed by Frattalone Companies of St. Paul, Minnesota using a Vermeer PD-10 pile driver. A Westwood representative was present when the piles were installed and recorded the install date, pile location, test post type/length, pile embedment, pile stick-up height, and total pile

drive time. This data is summarized in Table 1 in Appendix 2. Detailed data for drive time recorded by foot is available in Appendix 3.

4.0 Pile Load Testing

4.1 Axial Tensile Test Set-Up

In general accordance with ASTM D3689, the axial tensile load apparatus was constructed and positioned so that the resultant loads were applied vertically and in line with the central vertical axis of the pile so as to minimize eccentric loading and avoid a horizontal load component. A clear distance of at least five times the maximum diameter of the pile was provided between the test pile and the reaction points. All apparatuses used for applying and measuring loads, including all struts and structural members, were of sufficient size, strength, and stiffness to safely prevent excessive deflection and instability up to 125% of the maximum applied test load.

The displacement reference frame was set up independent of the loading system, with supports firmly planted on the ground at a clear distance from the test pile. Displacement indicators rested on a platform fixed to the test pile. Figure 4-1 displays an example axial tensile test configuration.



Figure 4-1: Axial Tensile Testing Example

4.2 Axial Tensile Test Equipment

Axial tensile setup consisted of the following equipment:

- Reaction frame consisting of an excavator
- 10 ton hydraulic ram capable of incremental increasing and decreasing of applied load
- Hydraulic pump and related hydraulic hardware
- Calibrated digital in-line load cell
- Pile loading connection hardware
- Two (2) calibrated displacement indicators capable of at least 4" of travel
- Measurement frame consisting of a surveyor's tripod

4.3 Axial Tensile Load Sequencing and Results

Axial tensile test loads and data recording were performed in accordance with Table 4-1. A summary of the axial tensile load test results are available in Table 2 in Appendix 2. Detailed tensile load testing results are displayed in Appendix 4. Pile load tests were terminated when the piles experienced continuous displacement or until the maximum test load was achieved. Continuous displacement is defined as the load (lbs) at which the pile experiences continuous movement to 1-inch of displacement as the test load is applied but the load experienced by the pile does not increase due to movement of the pile. Piles were loaded in 1,000 lbs increments. Displacement was recorded at 0 minutes and 1 minute of each load being applied. It should be noted that slight eccentricity in the test load can result in minor variations between the two displacement values. This is common and does not necessarily indicate malfunctioning equipment. When displacement variation occurs, not as a result of malfunction, the higher of the two displacements is to be used for evaluating the anchors performance.

Table 4-1: Axial Tensile Load Sequencing

Test Load (lbs)	Hold Time	Data Recording
0	1 minute	0, 1 minute
1,000	1 minute	0, 1 minute
2,000	1 minute	0, 1 minute
3,000	1 minute	0, 1 minute
4,000	1 minute	0, 1 minute
5,000	1 minute	0, 1 minute
6,000	1 minute	0, 1 minute
7,000	1 minute	0, 1 minute
8,000	1 minute	0, 1 minute
9,000	1 minute	0, 1 minute
10,000	1 minute	0, 1 minute
11,000	1 minute	0, 1 minute
12,000	1 minute	0, 1 minute
13,000	1 minute	0, 1 minute
14,000	1 minute	0, 1 minute
15,000	1 minute	0, 1 minute

4.4 Lateral Test Setup

In general accordance with ASTM D3966, lateral tests were performed following axial testing. Lateral tests used a hydraulic tension jack, calibrated in-line load cell, and a reaction counterweight. The test apparatus was constructed so that the resultant load was applied horizontally on the pile's strong axis, near the target load application height of approximately 4.5 feet above grade. The resultant loads were applied in line with the central vertical axis of the pile. The support reactions were constructed to prevent instability and to limit undesired rotations or lateral displacements. The distance between the test pile and reaction point was at least five times the maximum diameter of the test pile. All apparatuses used for applying and measuring loads, including all struts and structural members, were of sufficient size, strength, and stiffness to safely prevent excessive deflection and instability up to 125% of the maximum applied test load.

The displacement reference frame was supported independent of the loading system, with supports firmly planted on the ground at a clear distance from the test pile. The reference frames were oriented perpendicular to the line of load application, placing the beam supports as far as feasible from the test pile and reaction force system. The reference beams were constructed to allow displacement measurements to be taken near ground level and near the load application height. Figure 4-2 displays an example lateral test configuration.



Figure 4-2: Lateral Testing Example

4.5 Lateral Test Equipment

Lateral setup consisted of the following equipment.

- Counterweight consisting of an excavator
- 10 ton hydraulic ram capable of incremental increasing and decreasing of applied load
- Hydraulic pump and related hydraulic hardware
- Calibrated digital in-line load cell
- Pile loading connection hardware
- Two (2) calibrated displacement indicators capable of at least 4 inches of travel
- Measurement frames consisting of a surveyor's tripods

4.6 Lateral Load Sequencing and Results

Lateral test loads and data recording were performed in accordance with Table 4-2. The lateral tests were performed after the axial tests were completed. The pile load testing was terminated if the displacement of the pile exceeded the maximum range of the dial indicators (4 in), continuous displacement, and/or the maximum load was obtained. In some instances, the testing was terminated before continuous displacement or the maximum range of the dial indicators was exceeded. This was done when the technician was able to evaluate if the pile was going to experience continuous displacement or if the dial indicators would exceed the maximum range while advancing to the next load sequence. Following this protocol allowed for additional rebound data to be collected to evaluate residual displacement of the pile. A summary of the lateral load test results are available in Table 2 in Appendix 2. Detailed lateral load testing results are displayed in Appendix 5.

Table 4-2: Lateral Load Sequencing

Test Load (lbs)	Hold Time	Data Recording
0	0 minute	0 minute
750	1 minute	0, 1 minute
1,500	1 minute	0, 1 minute
0	1 minute	0, 1 minute
1,500	1 minute	0, 1 minute
2,250	1 minute	0, 1 minute
3,000	1 minute	0, 1 minute
0	0 minute	0 minute
3,000	1 minute	0, 1 minute
3,750	1 minute	0, 1 minute
4,500	1 minute	0, 1 minute
5,250	1 minute	0, 1 minute
6,000	1 minute	0, 1 minute
0	0 minute	0 minute

4.7 Axial Compression Test Set-Up

In accordance with ASTM D1143, the compressive loading and measurement apparatus were constructed and positioned so that the resultant loads were applied vertically and in line with the central vertical axis of the pile so as to minimize eccentric loading and avoid a horizontal load component. A clear distance was provided between the test pile and the reaction points. The distance between the test pile and reaction point was at least five times the maximum diameter of the pile. All apparatuses used for applying and measuring loads, including all struts and structural members, were of sufficient size, strength, and stiffness to safely prevent excessive deflection and instability up to 125% of the maximum anticipated test load.

The displacement reference frame was set up independent of the loading system, with supports firmly planted on the ground as far as feasible away from the test pile. Displacement indicators rested on a platform fixed to the test pile. Figure 4-3 displays an example axial compressive test configuration.



Figure 4-3: Axial Compressive Testing Example

4.8 Axial Compression Test Equipment

- Reaction frame consisting of an excavator
- 10 ton hydraulic ram capable of incremental increasing and decreasing of applied load
- Hydraulic pump and related hydraulic hardware
- Calibrated digital in-line load cell
- Pile loading connection hardware
- Two (2) calibrated displacement indicators capable of at least 4" of travel
- Measurement frame consisting of a surveyor's tripod

4.9 Axial Compression Load Sequencing and Results

Axial compression test loads and data recording were performed in accordance with Table 4-3. A summary of the results are displayed in Table 4 in Appendix 2. Pile load tests were terminated when the piles experienced continuous displacement or until the maximum test load was achieved. Continuous displacement is defined as the load (lbs) at which the pile experiences continuous movement to 1-inch of displacement as the test load is applied but the load experienced by the pile does not increase due to movement of the pile. It should be noted that slight eccentricity in the test load can result in minor variations between the two displacement values. This is common and does not necessarily indicate malfunctioning equipment. When displacement variation occurs, not as a result of malfunction, the higher of the two displacements is to be used for evaluating the anchors performance. Detailed compressive testing results are compiled in Appendix 6.

Table 4-3: Axial Compression Load Sequencing

Test Load (lbs)	Hold Time	Data Recording
0	0 minute	0 minute
1,000	1 minute	0, 1 minute
2,000	1 minute	0, 1 minute
3,000	1 minute	0, 1 minute
4,000	1 minute	0, 1 minute
5,000	1 minute	0, 1 minute
6,000	1 minute	0, 1 minute
7,000	1 minute	0, 1 minute
8,000	1 minute	0, 1 minute
9,000	1 minute	0, 1 minute
10,000	1 minute	0, 1 minute
11,000	1 minute	0, 1 minute
12,000	1 minute	0, 1 minute
13,000	1 minute	0, 1 minute
14,000	1 minute	0, 1 minute
15,000	1 minute	0, 1 minute

5.0 Limitations

This report has been prepared for the exclusive use by our client for the specific application to the project discussed, and has been prepared in accordance with generally accepted geotechnical engineering practices in this locality at this time. Westwood makes no representation, guarantee, or warranty, expressed or implied, regarding the services, communications (oral or written), report, opinion, or instrument of service provided.

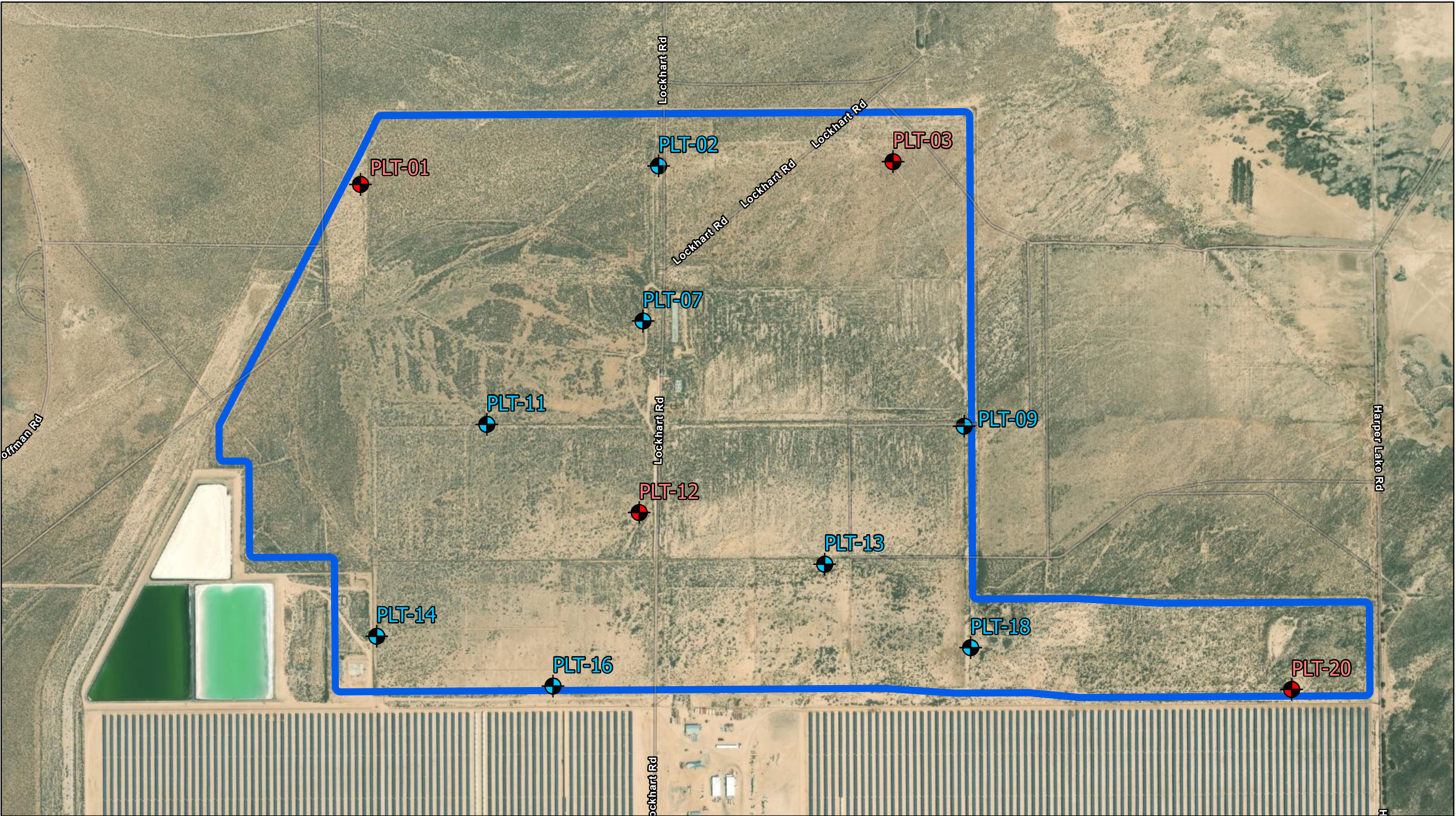
This report presents installation and testing data only. The limited conclusions and recommendations contained in this report are based on our field observations, test results, and our present knowledge of the project in attempt to provide additional information to the client.

It is not within our scope of work to check the referenced documents or work for conformance to codes or other client and government requirements. Westwood makes no representation as to the accuracy of structural dimensions, calculations, or any portion of the pile design.

Test results are representative of the test piles used, their embedment depth, and the subsurface conditions they were installed in. The test results, therefore, do not necessarily reflect variations that may exist between test locations, embedment depths, and different pile types. If variations from the testing procedure or subsurface conditions described in this study are noted during design and/or construction, the conclusions and recommendations contained in this report should not be considered valid and engineering re-evaluation should be performed in regard to pile capacity. Westwood is not responsible for any claims, damages, or liability associated with the interpretation of this data by others.

Appendix 1

Test Pile Location Figure




Data Source(s): Westwood (2020); .





Westwood

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Legend

 2 Pile Load Testing Locations

 3 Pile Load Testing Locations

 Proposed Project Boundary

Lockhart Solar II Project

San Bernardino County, California

Pile Load Testing Locations

December 23, 2020

Appendix 2

Summary of Results

Table 1: Summary of Install Drive Times and Depth

Pile ID	Latitude	Longitude	Post Length (ft)	Stick-Up Height (ft)	Embedment Depth (ft)	Drive Time (s)
PLT-01-6	35.04873	-117.35649	11	5	6	24.78
PLT-01-6C	35.04873	-117.35649	11	5	6	31.13
PLT-01-8	35.04873	-117.35649	13	5	8	42.22
PLT-02-6	35.04909	-117.34883	11	5	6	41.82
PLT-02-8	35.04909	-117.34883	13	5	8	92.73
PLT-03-6	35.04914	-117.34281	11	5	6	40.12
PLT-03-6C	35.04914	-117.34281	11	5	6	59.46
PLT-03-8	35.04914	-117.34281	13	5	8	74.52
PLT-07-6	35.04581	-117.34925	11	5	6	67.39
PLT-07-8	35.04581	-117.34925	13	5	8	87.65
PLT-09-6	35.04354	-117.34103	11	5	6	108.6
PLT-09-8	35.04354	-117.34103	13	5	8	128.93
PLT-11-6	35.04365	-117.35328	11	5	6	57.99
PLT-11-8	35.04365	-117.35328	13	5	8	125.36
PLT-12-6	35.04176	-117.34938	11	5	6	35.21
PLT-12-6C	35.04176	-117.34938	11	5	6	30.16
PLT-12-8	35.04176	-117.34938	13	5	8	78.84
PLT-13-6	35.04065	-117.34463	11	5	6	114.89
PLT-13-8	35.04065	-117.34463	13	5	8	98.49
PLT-14-6	35.03919	-117.35615	11	5	6	47.55
PLT-14-8	35.03919	-117.35615	13	5	8	77.68
PLT-16-6	35.03811	-117.35163	11	5	6	35.56
PLT-16-8	35.03811	-117.35163	13	5	8	63.16
PLT-18-6	35.03886	-117.3409	11	5	6	56.04
PLT-18-8	35.03886	-117.3409	13	5	8	83.2
PLT-20-6	35.03794	-117.33266	11	5	6	37.35
PLT-20-6C	35.03794	-117.33266	11	5	6	62.41
PLT-20-8	35.03794	-117.33266	13	5	8	61.24

Table 2: Summary of Axial Tensile Load Test Results				
Pile ID	Post Type	Embedment Depth (ft)	Total Drive Time (sec)	Maximum Axial Test Load* (lbs)
PLT-01-6T	W6x9	6	24.78	10000
PLT-01-8T	W6x9	8	42.22	15000
PLT-02-6T	W6x9	6	41.82	15000
PLT-02-8T	W6x9	8	92.73	15000
PLT-03-6T	W6x9	6	40.12	15000
PLT-03-8T	W6x9	8	74.52	15000
PLT-07-6T	W6x9	6	67.39	15000
PLT-07-8T	W6x9	8	87.65	15000
PLT-09-6T	W6x9	6	108.6	15000
PLT-09-8	W6x9	8	128.93	15000
PLT-11-6T	W6x9	6	57.99	15000
PLT-11-8T	W6x9	8	125.36	15000
PLT-12-6T	W6x9	6	35.21	15000
PLT-12-8	W6x9	8	78.84	15000
PLT-13-6T	W6x9	6	114.89	15000
PLT-13-8	W6x9	8	98.49	15000
PLT-14-6T	W6x9	6	47.55	15000
PLT-14-8T	W6x9	8	77.68	15000
PLT-16-6T	W6x9	6	35.56	15000
PLT-16-8T	W6x9	8	63.16	15000
PLT-18-6T	W6x9	6	56.04	15000
PLT-18-8T	W6x9	8	83.2	15000
PLT-20-6T	W6x9	6	37.35	15000
PLT-20-8T	W6x9	8	61.24	15000

*Maximum load applied before continuous displacement of up to 1-inch of displacement was recorded.

Table 3: Summary of Lateral Load Testing Results

Pile ID	Post Type	Embedment Depth (ft)	Total Drive Time (sec)	Maximum Sustained Lateral Test Load* (lbs)	Displacement at Maximum Test Load (inches)	
					Grade (6")	Load Height (4.5')
PLT-01-6L	W6x9	6	24.78	6000	0.9635	3.593
PLT-01-8L	W6x9	8	42.22	6000	0.6845	2.815
PLT-02-6L	W6x9	6	41.82	6000	0.4735	2.175
PLT-02-8L	W6x9	8	92.73	6000	0.4065	2.03
PLT-03-6L	W6x9	6	40.12	6000	0.59	2.535
PLT-03-8L	W6x9	8	74.52	6000	0.426	2.381
PLT-07-6L	W6x9	6	67.39	6000	0.4745	2.2835
PLT-07-8L	W6x9	8	87.65	6000	0.361	1.716
PLT-09-6L	W6x9	6	108.6	6000	0.2265	1.882
PLT-09-8	W6x9	8	128.93	6000	0.2065	1.6915
PLT-11-6L	W6x9	6	57.99	6000	0.3755	1.9925
PLT-11-8L	W6x9	8	125.36	6000	0.508	3.068
PLT-12-6L	W6x9	6	35.21	6000	0.706	3.3165
PLT-12-8	W6x9	8	78.84	6000	0.4605	2.426
PLT-13-6L	W6x9	6	114.89	6000	0.219	1.5375
PLT-13-8	W6x9	8	98.49	6000	0.294	2.0595
PLT-14-6L	W6x9	6	47.55	6000	0.234	1.78
PLT-14-8L	W6x9	8	77.68	6000	0.208	1.665
PLT-16-6L	W6x9	6	35.56	6000	0.248	1.623
PLT-16-8L	W6x9	8	63.16	6000	0.416	2.25
PLT-18-6L	W6x9	6	56.04	6000	0.387	2.282
PLT-18-8L	W6x9	8	83.2	6000	0.329	2.037
PLT-20-6L	W6x9	6	37.35	6000	0.394	2.335
PLT-20-8L	W6x9	8	61.24	6000	0.3975	2.277

*Maximum load applied before continuous displacement of up to 4-inch of displacement was recorded, or maximum load (6,000lbs)

Table 4: Summary of Axial Compression Load Test Results				
Pile ID	Post Type	Embedment Depth (ft)	Total Drive Time (sec)	Maximum Axial Test Load* (lbs)
PLT-01-6C	W6x9	6	31.13	15000
PLT-03-6C	W6x9	6	59.46	15000
PLT-12-6C	W6x9	6	30.16	15000
PLT-20-6C	W6x9	6	62.41	15000

*Maximum load applied before continuous displacement of up to 1-inch of displacement was recorded, or maximum load (15,000lbs)

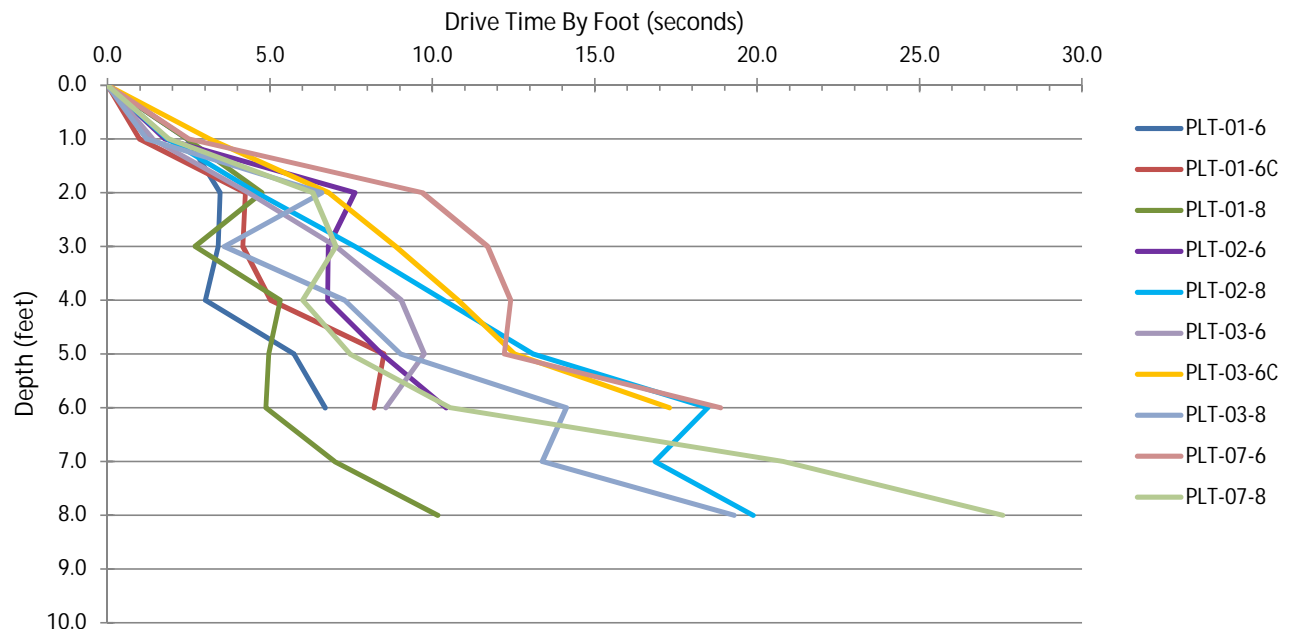
Appendix 3

Pile Installation Drive Time Data

Project:	Lockhart II Solar Project	Test Weather:	70-80 Degrees; Sunny
Install Date:	12/12/2020	Installer:	Frattalone Companies

Pile Install Data - Drive Time By Foot (seconds)

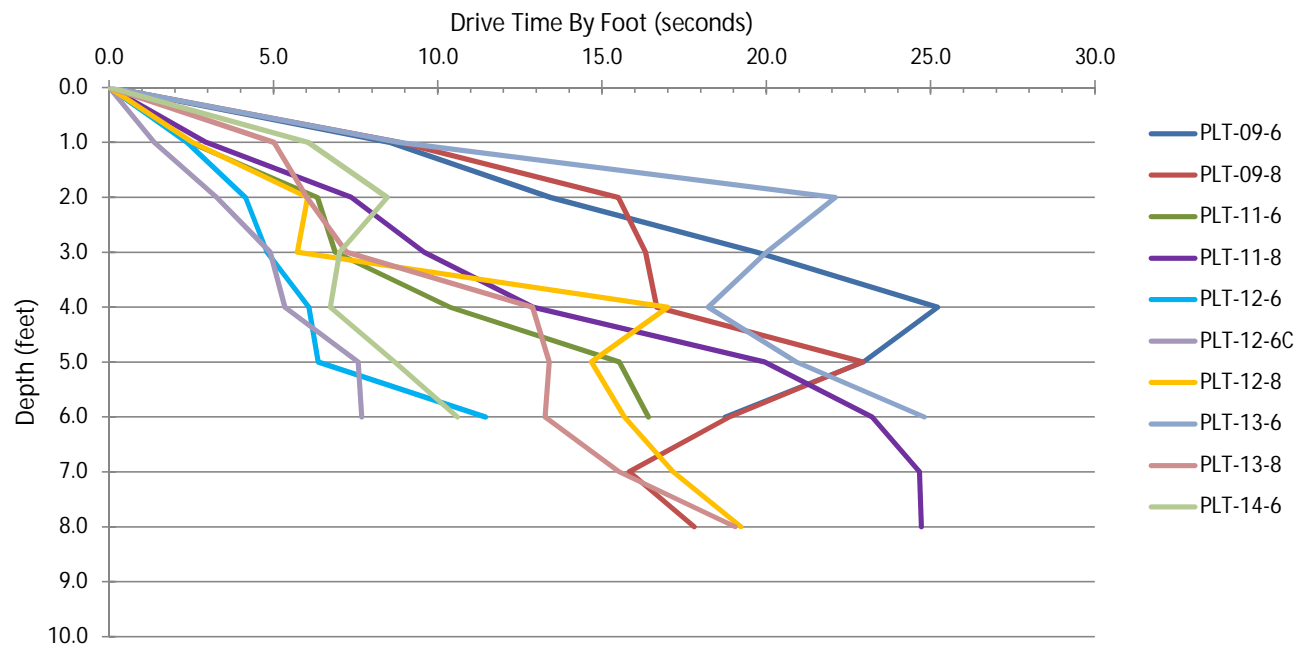
Depth (ft)	PLT-01-6	PLT-01-6C	PLT-01-8	PLT-02-6	PLT-02-8	PLT-03-6	PLT-03-6C	PLT-03-8	PLT-07-6	PLT-07-8
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1.0	2.5	1.0	2.5	1.8	1.9	1.4	3.2	1.2	2.5	1.9
2.0	3.5	4.2	4.8	7.6	4.6	4.3	6.8	6.6	9.7	6.3
3.0	3.4	4.2	2.7	6.8	7.6	7.0	8.9	3.6	11.7	7.0
4.0	3.0	5.0	5.3	6.8	10.4	9.0	10.8	7.3	12.4	6.0
5.0	5.7	8.5	5.0	8.4	13.1	9.8	12.5	9.0	12.2	7.5
6.0	6.7	8.2	4.9	10.4	18.5	8.6	17.3	14.1	18.9	10.6
7.0			7.0		16.9			13.4		20.8
8.0			10.2		19.9			19.3		27.6
9.0										
10.0										



Project:	Lockhart II Solar Project	Test Weather:	70-80 Degrees; Sunny
Install Date:	12/12/2020	Installer:	Frattalone Companies

Pile Install Data - Drive Time By Foot (seconds)

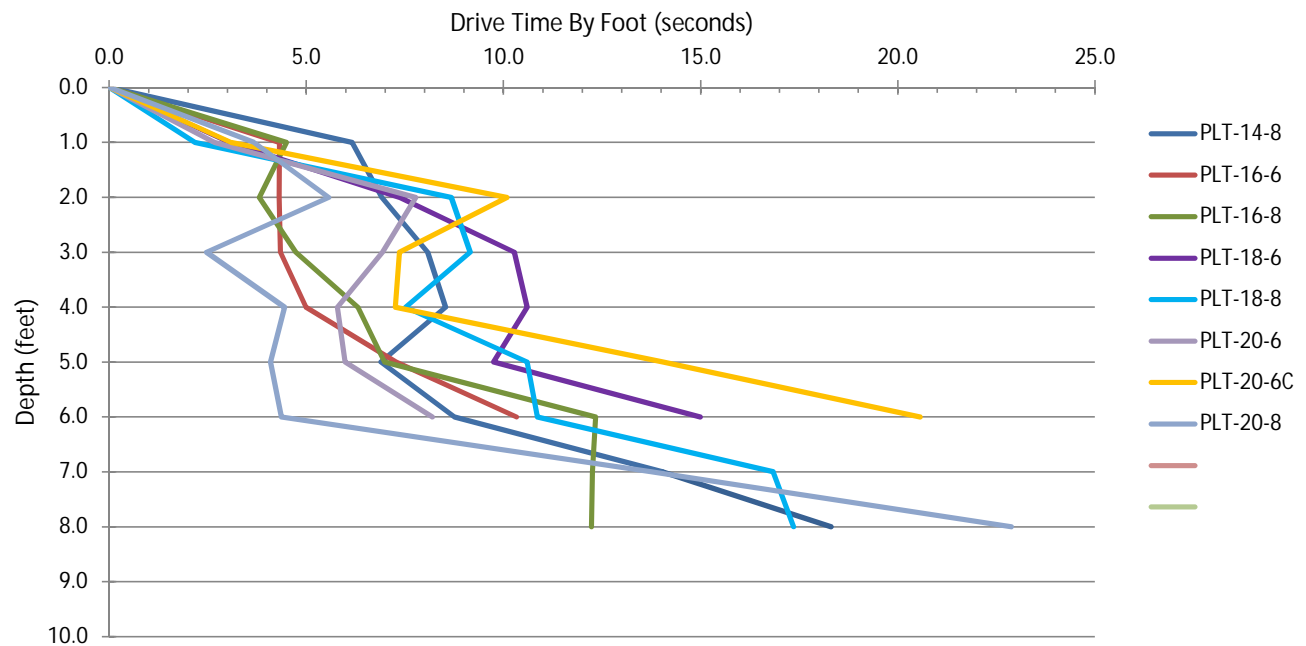
Depth (ft)	PLT-09-6	PLT-09-8	PLT-11-6	PLT-11-8	PLT-12-6	PLT-12-6C	PLT-12-8	PLT-13-6	PLT-13-8	PLT-14-6
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1.0	8.5	8.9	2.5	3.0	2.4	1.4	2.5	8.8	5.0	6.1
2.0	13.4	15.5	6.3	7.4	4.2	3.3	6.0	22.1	6.0	8.5
3.0	19.7	16.3	6.9	9.6	4.8	4.9	5.7	20.0	7.2	7.0
4.0	25.2	16.7	10.4	12.9	6.1	5.4	17.0	18.2	12.9	6.7
5.0	23.0	22.9	15.5	20.0	6.4	7.6	14.7	20.9	13.4	8.7
6.0	18.8	18.9	16.4	23.2	11.5	7.7	15.7	24.8	13.3	10.6
7.0		15.8		24.7			17.2		15.5	
8.0		17.8		24.7			19.2		19.1	
9.0										
10.0										



Project:	Lockhart II Solar Project	Test Weather:	70-80 Degrees; Sunny
Install Date:	12/12/2020	Installer:	Frattalone Companies

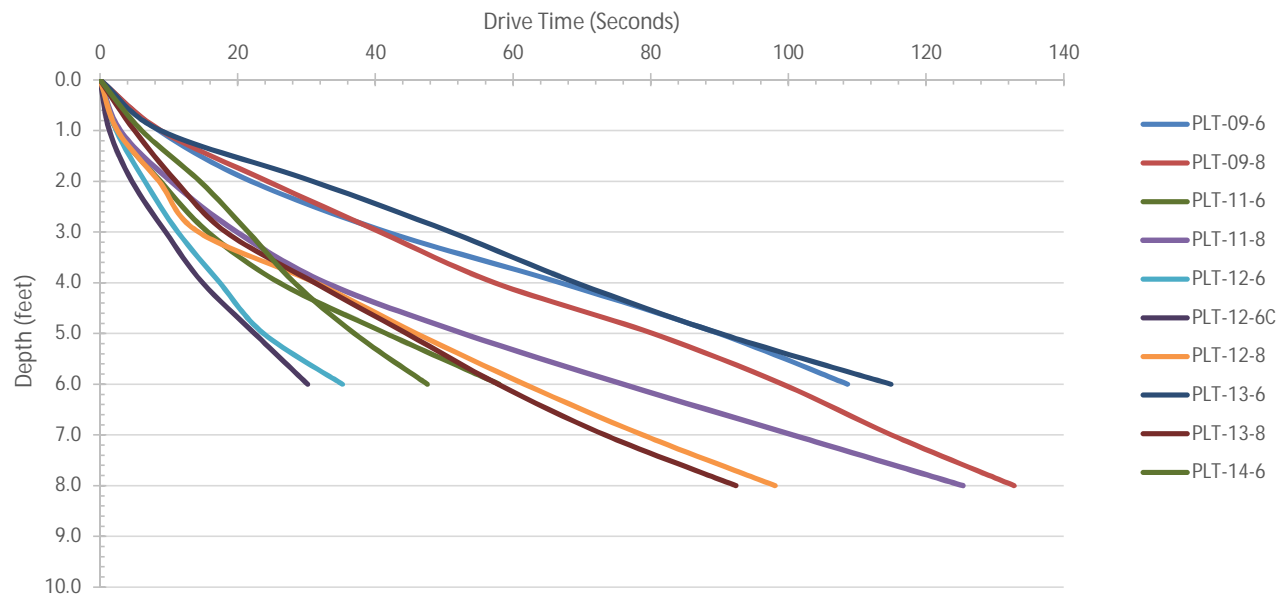
Pile Install Data - Drive Time By Foot (seconds)

Depth (ft)	PLT-14-8	PLT-16-6	PLT-16-8	PLT-18-6	PLT-18-8	PLT-20-6	PLT-20-6C	PLT-20-8		
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
1.0	6.2	4.3	4.5	3.1	2.2	2.7	3.1	3.7		
2.0	6.9	4.3	3.8	7.4	8.7	7.8	10.1	5.6		
3.0	8.1	4.3	4.7	10.3	9.2	6.9	7.4	2.5		
4.0	8.5	5.0	6.3	10.6	7.5	5.8	7.3	4.5		
5.0	6.9	7.3	7.0	9.8	10.6	6.0	14.0	4.1		
6.0	8.8	10.3	12.3	15.0	10.9	8.2	20.6	4.4		
7.0	14.0		12.3		16.8			13.7		
8.0	18.3		12.2		17.4			22.9		
9.0										
10.0										



Project:	Lockhart II Solar Project	Test Weather:	70-80 Degrees; Sunny
Install Date:	12/12/2020	Installer:	Frattalone Companies

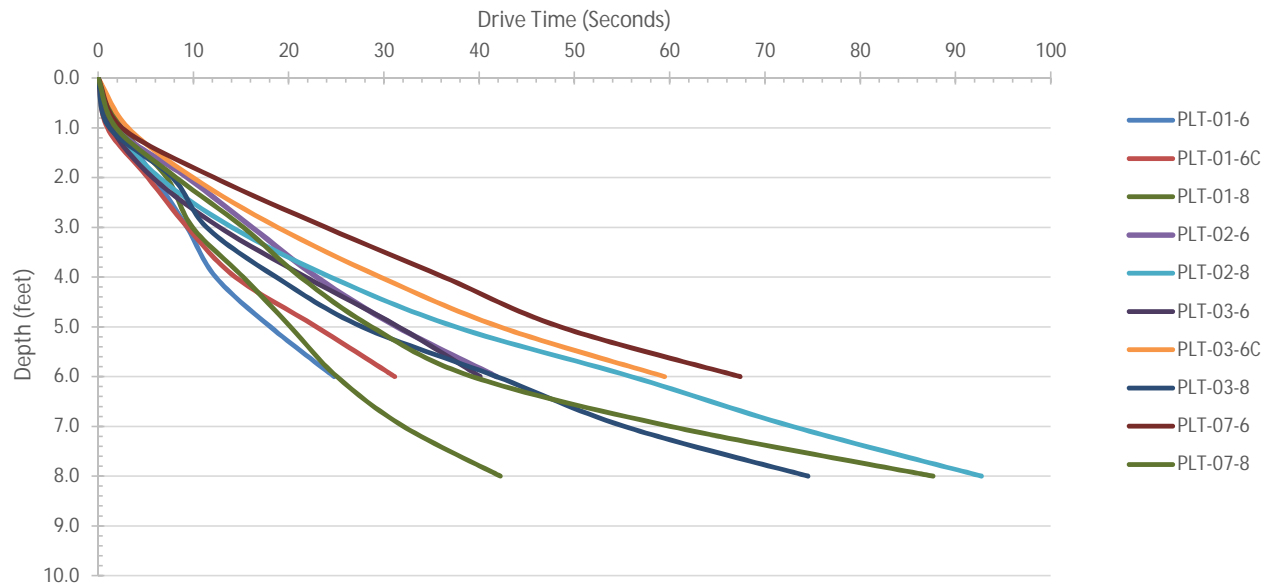
Pile Install Data - Cumulative Drive Time (seconds)

[illegible]

Project:	Lockhart II Solar Project	Test Weather:	70-80 Degrees; Sunny
Install Date:	12/12/2020	Installer:	Frattalone Companies

Pile Install Data - Cumulative Drive Time (seconds)

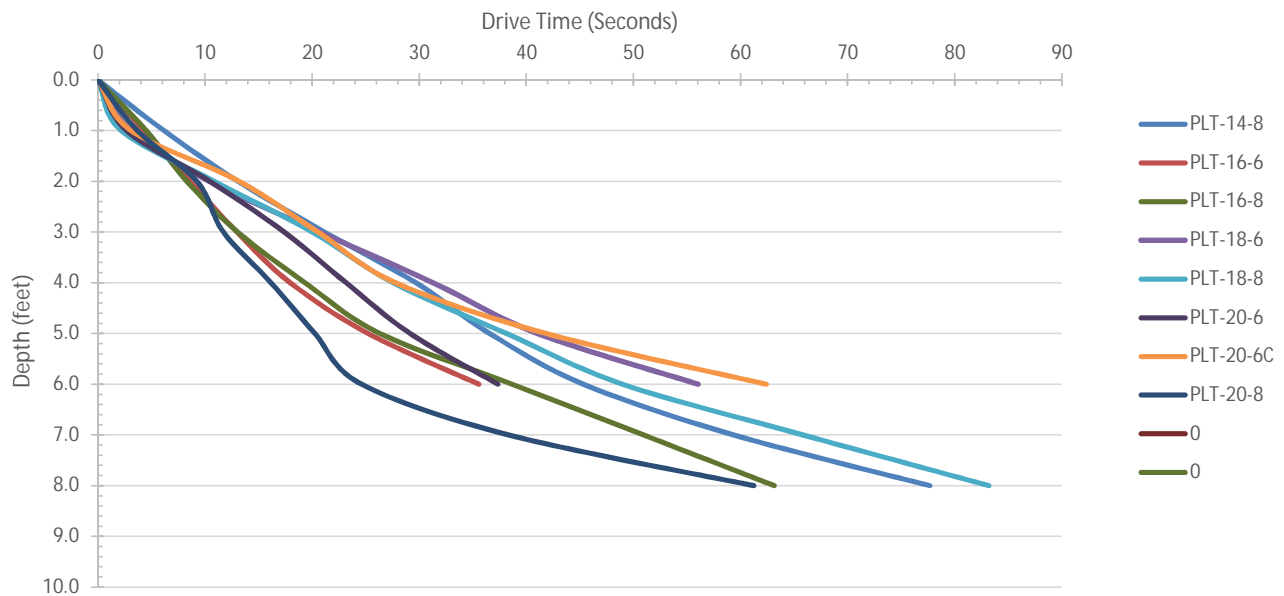
Depth (ft)	PLT-01-6	PLT-01-6C	PLT-01-8	PLT-02-6	PLT-02-8	PLT-03-6	PLT-03-6C	PLT-03-8	PLT-07-6	PLT-07-8
0.0	0	0	0	0	0	0	0	0	0	0
1.0	2.45	0.98	2.45	1.76	1.85	1.39	3.15	1.2	2.5	1.89
2.0	5.92	5.22	7.21	9.37	6.44	5.73	9.96	7.8	12.19	8.21
3.0	9.33	9.39	9.91	16.17	14.06	12.76	18.83	11.39	23.89	15.24
4.0	12.34	14.41	15.23	22.95	24.41	21.8	29.63	18.69	36.3	21.25
5.0	18.08	22.92	20.19	31.39	37.51	31.55	42.16	27.71	48.52	28.72
6.0	24.78	31.13	25.06	41.82	55.99	40.12	59.46	41.84	67.39	39.28
7.0			32.05		72.85			55.23		60.09
8.0			42.22		92.73			74.52		87.65
9.0										
10.0										



Project:	Lockhart II Solar Project	Test Weather:	70-80 Degrees; Sunny
Install Date:	12/12/2020	Installer:	Frattalone Companies

Pile Install Data - Cumulative Drive Time (seconds)

Depth (ft)	PLT-14-8	PLT-16-6	PLT-16-8	PLT-18-6	PLT-18-8	PLT-20-6	PLT-20-6C	PLT-20-8		
0.0	0	0	0	0	0	0	0	0		
1.0	6.16	4.32	4.5	3.05	2.18	2.67	3.09	3.67		
2.0	13.08	8.63	8.31	10.42	10.86	10.45	13.18	9.24		
3.0	21.16	12.97	13.04	20.7	20.02	17.38	20.54	11.71		
4.0	29.69	17.96	19.35	31.3	27.54	23.17	27.8	16.16		
5.0	36.58	25.23	26.33	41.05	38.14	29.15	41.84	20.25		
6.0	45.34	35.56	38.67	56.04	49	37.35	62.41	24.62		
7.0	59.37		50.93		65.84			38.36		
8.0	77.68		63.16		83.2			61.24		
9.0										
10.0										



Appendix 4

Axial Tensile Pile Load Testing Data

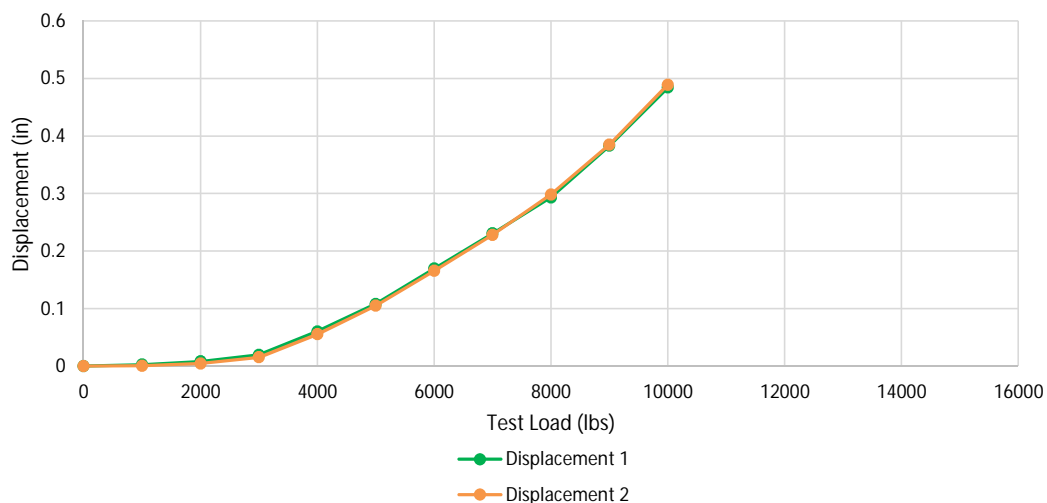
Project:	Lockhart Solar II	Pile ID:	PLT-01-6T
Test Date:	12/16/2020	Pile GPS Location:	35.04873 , -117.35649
Testing Phase:	Design	Pile Install Date:	12/12/2020
Test Weather:	Clear	Pile Drive Time:	24.8 seconds
Technician:	Mikey Spaulding	Pile Type:	W6x9
Load Cell ID:	12095	Pile Length:	11.0 feet
Disp #1 ID:	17B0946	Pile Stick-up:	5.0 feet
Disp #2 ID:	17B0320	Pile Embedment:	6.0 feet
CD* Load:	10,080	Load Height:	5.0 feet
Notes:		Load Test Type:	Tensile

*Continuous displacement defined as continuous movement under a certain load until pile exceeds 1 inch or greater of displacement.

Applied Load (lbs) vs. Measured Displacement (in)

Test Load (lbs)	Disp @ 0 min (in)		Disp @ 1 min (in)	
	Disp #1	Disp #2	Disp #1	Disp #2
0	0	0	0	0
1000	0.002	0.0005	0.0025	0.0005
2000	0.008	0.0045	0.008	0.0045
3000	0.019	0.0155	0.0195	0.0155
4000	0.06	0.0555	0.06	0.0555
5000	0.1055	0.102	0.108	0.105
6000	0.159	0.163	0.1695	0.1655
7000	0.2265	0.226	0.2305	0.228
8000	0.2845	0.2905	0.293	0.298
9000	0.3635	0.364	0.383	0.385
10000	0.454	0.458	0.484	0.4885
11000				
12000				
13000				
14000				
15000				

Applied Load (lbs) vs. Measured Displacement (in)



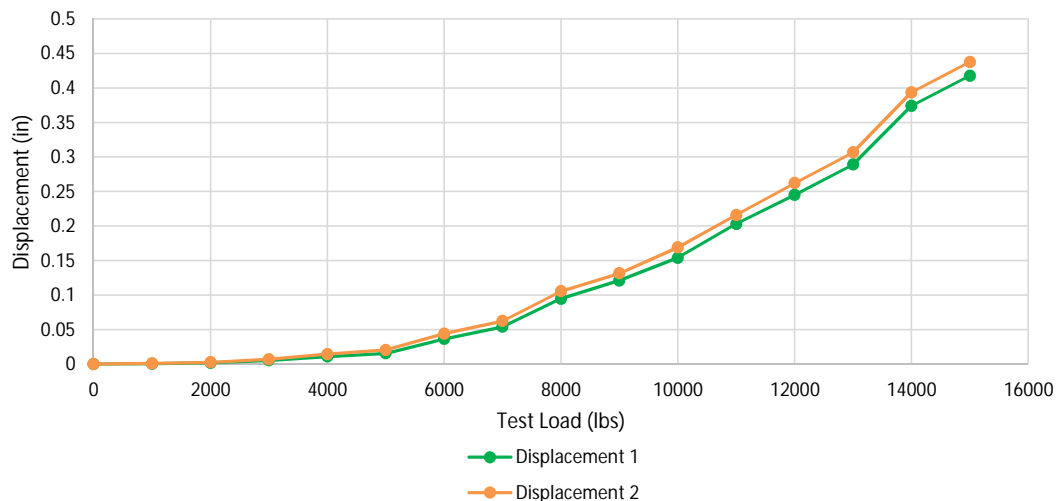
Project:	Lockhart Solar II	Pile ID:	PLT-01-8T
Test Date:	12/16/2020	Pile GPS Location:	35.04873 , -117.35649
Testing Phase:	Design	Pile Install Date:	12/12/2020
Test Weather:	Clear	Pile Drive Time:	42.2 seconds
Technician:	Mikey Spaulding	Pile Type:	W6x9
Load Cell ID:	12095	Pile Length:	13.0 feet
Disp #1 ID:	17B0946	Pile Stick-up:	5.0 feet
Disp #2 ID:	17B0320	Pile Embedment:	8.0 feet
CD* Load:	10,080	Load Height:	5.0 feet
Notes:		Load Test Type:	Tensile

*Continuous displacement defined as continuous movement under a certain load until pile exceeds 1 inch or greater of displacement.

Applied Load (lbs) vs. Measured Displacement (in)

Test Load (lbs)	Disp @ 0 min (in)		Disp @ 1 min (in)	
	Disp #1	Disp #2	Disp #1	Disp #2
0	0	0	0	0
1000	0.0005	0.001	0.0005	0.001
2000	0.002	0.0025	0.002	0.0025
3000	0.0055	0.0065	0.0055	0.007
4000	0.011	0.014	0.011	0.0145
5000	0.013	0.0185	0.0155	0.0205
6000	0.0275	0.036	0.0365	0.044
7000	0.0525	0.062	0.054	0.0625
8000	0.0925	0.105	0.0945	0.1055
9000	0.1195	0.1315	0.121	0.1315
10000	0.1535	0.1655	0.154	0.169
11000	0.202	0.215	0.203	0.216
12000	0.237	0.2535	0.245	0.262
13000	0.2515	0.2665	0.289	0.3065
14000	0.3705	0.392	0.374	0.3934
15000	0.4055	0.427	0.4175	0.4375

Applied Load (lbs) vs. Measured Displacement (in)



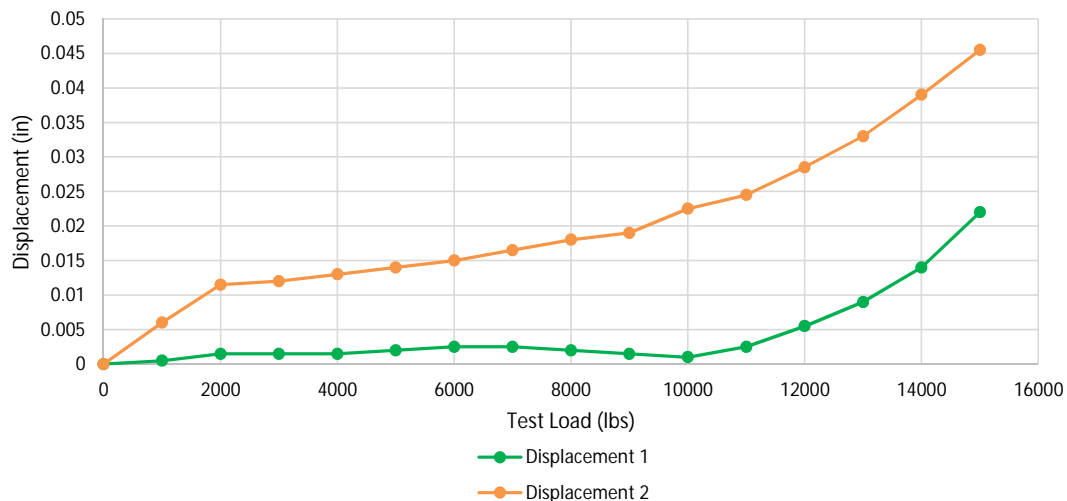
Project:	Lockhart Solar II	Pile ID:	PLT-02-6T
Test Date:	12/16/2020	Pile GPS Location:	35.04909 , -117.34883
Testing Phase:	Design	Pile Install Date:	12/12/2020
Test Weather:	Clear	Pile Drive Time:	41.8 seconds
Technician:	Mikey Spaulding	Pile Type:	W6x9
Load Cell ID:	12095	Pile Length:	11.0 feet
Disp #1 ID:	17B0946	Pile Stick-up:	5.0 feet
Disp #2 ID:	17B0320	Pile Embedment:	6.0 feet
CD* Load:	N/A	Load Height:	5.0 feet
Notes:		Load Test Type:	Tensile

*Continuous displacement defined as continuous movement under a certain load until pile exceeds 1 inch or greater of displacement.

Applied Load (lbs) vs. Measured Displacement (in)

Test Load (lbs)	Disp @ 0 min (in)		Disp @ 1 min (in)	
	Disp #1	Disp #2	Disp #1	Disp #2
0	0	0	0	0
1000	0.0005	0.006	0.0005	0.006
2000	0.0015	0.0115	0.0015	0.0115
3000	0.0015	0.012	0.0015	0.012
4000	0.0015	0.013	0.0015	0.013
5000	0.002	0.014	0.002	0.014
6000	0.0025	0.015	0.0025	0.015
7000	0.0025	0.016	0.0025	0.0165
8000	0.002	0.0175	0.002	0.018
9000	0.0015	0.019	0.0015	0.019
10000	0.0005	0.0215	0.001	0.0225
11000	0.002	0.024	0.0025	0.0245
12000	0.004	0.00275	0.0055	0.0285
13000	0.008	0.033	0.009	0.033
14000	0.0125	0.0375	0.014	0.039
15000	0.0205	0.045	0.022	0.0455

Applied Load (lbs) vs. Measured Displacement (in)



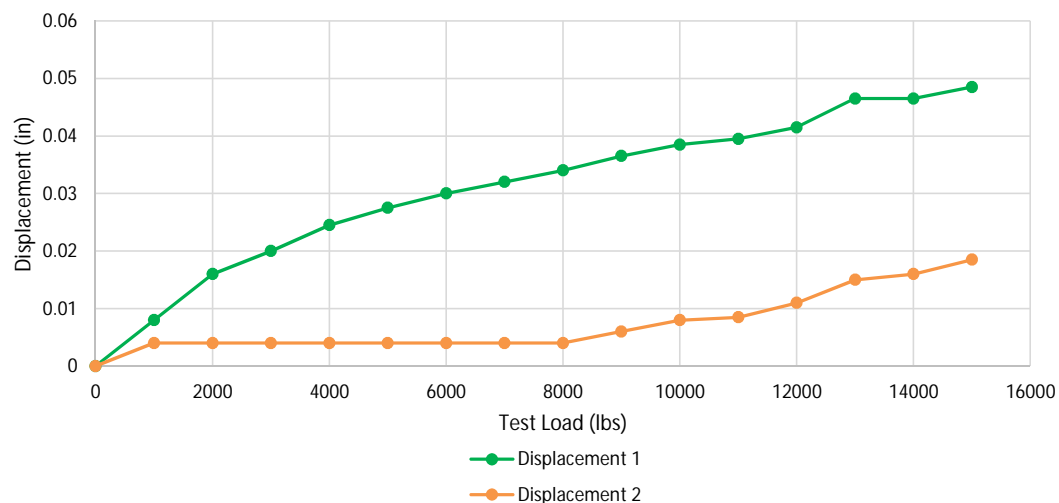
Project:	Lockhart Solar II	Pile ID:	PLT-02-8T
Test Date:	12/16/2020	Pile GPS Location:	35.04909 , -117.34883
Testing Phase:	Design	Pile Install Date:	12/12/2020
Test Weather:	Clear	Pile Drive Time:	92.7 seconds
Technician:	Mikey Spaulding	Pile Type:	W6x9
Load Cell ID:	12095	Pile Length:	13.0 feet
Disp #1 ID:	17B0946	Pile Stick-up:	5.0 feet
Disp #2 ID:	17B0320	Pile Embedment:	8.0 feet
CD* Load:	N/A	Load Height:	5.0 feet
Notes:		Load Test Type:	Tensile

*Continuous displacement defined as continuous movement under a certain load until pile exceeds 1 inch or greater of displacement.

Applied Load (lbs) vs. Measured Displacement (in)

Test Load (lbs)	Disp @ 0 min (in)		Disp @ 1 min (in)	
	Disp #1	Disp #2	Disp #1	Disp #2
0	0	0	0	0
1000	0.008	0.004	0.008	0.004
2000	0.016	0.004	0.016	0.004
3000	0.02	0.004	0.02	0.004
4000	0.024	0.004	0.0245	0.004
5000	0.027	0.004	0.0275	0.004
6000	0.0295	0.004	0.03	0.004
7000	0.032	0.004	0.032	0.004
8000	0.034	0.004	0.034	0.004
9000	0.0365	0.006	0.0365	0.006
10000	0.0385	0.0075	0.0385	0.008
11000	0.0395	0.0085	0.0395	0.0085
12000	0.0415	0.011	0.0415	0.011
13000	0.0465	0.015	0.0465	0.015
14000	0.0465	0.016	0.0465	0.016
15000	0.0485	0.0185	0.0485	0.0185

Applied Load (lbs) vs. Measured Displacement (in)



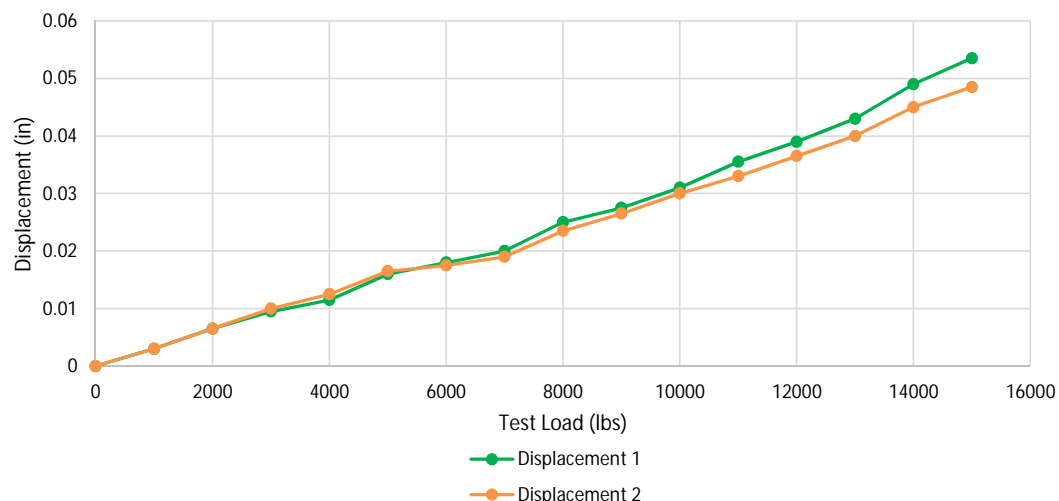
Project:	Lockhart Solar II	Pile ID:	PLT-03-6T
Test Date:	12/17/2020	Pile GPS Location:	35.04914 , -117.34281
Testing Phase:	Design	Pile Install Date:	12/12/2020
Test Weather:	Clear	Pile Drive Time:	40.1 seconds
Technician:	Mikey Spaulding	Pile Type:	W6x9
Load Cell ID:	12095	Pile Length:	11.0 feet
Disp #1 ID:	17B0946	Pile Stick-up:	5.0 feet
Disp #2 ID:	17B0320	Pile Embedment:	6.0 feet
CD* Load:	N/A	Load Height:	5.0 feet
Notes:		Load Test Type:	Tensile

*Continuous displacement defined as continuous movement under a certain load until pile exceeds 1 inch or greater of displacement.

Applied Load (lbs) vs. Measured Displacement (in)

Test Load (lbs)	Disp @ 0 min (in)		Disp @ 1 min (in)	
	Disp #1	Disp #2	Disp #1	Disp #2
0	0	0	0	0
1000	0.0025	0.0025	0.003	0.003
2000	0.0065	0.006	0.0065	0.0065
3000	0.0095	0.01	0.0095	0.01
4000	0.0115	0.0125	0.0115	0.0125
5000	0.0155	0.0165	0.016	0.0165
6000	0.018	0.0175	0.018	0.0175
7000	0.02	0.0185	0.02	0.019
8000	0.0245	0.0235	0.025	0.0235
9000	0.027	0.0265	0.0275	0.0265
10000	0.0305	0.029	0.031	0.03
11000	0.0345	0.0325	0.0355	0.033
12000	0.038	0.036	0.039	0.0365
13000	0.042	0.0395	0.043	0.04
14000	0.0475	0.044	0.049	0.045
15000	0.053	0.0485	0.0535	0.0485

Applied Load (lbs) vs. Measured Displacement (in)



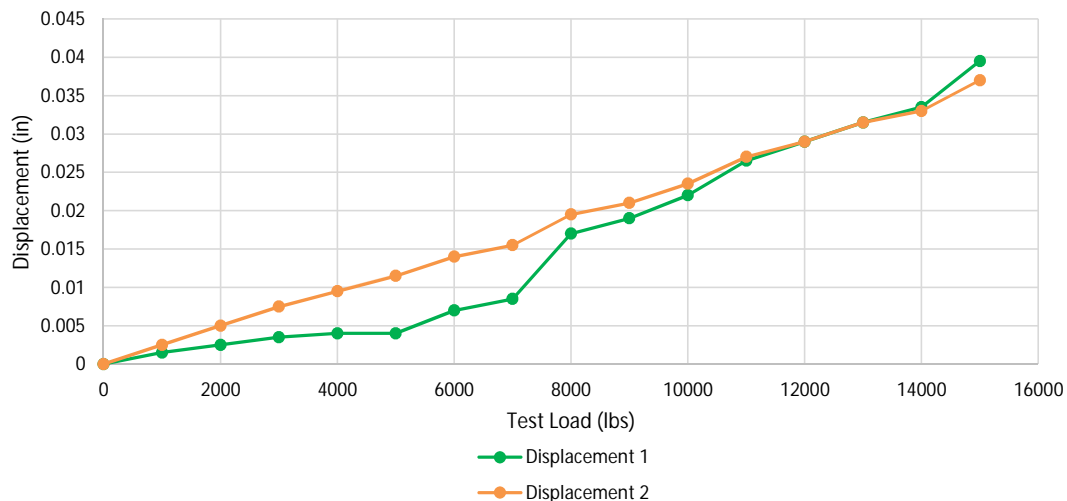
Project:	Lockhart Solar II	Pile ID:	PLT-03-8T
Test Date:	12/17/2020	Pile GPS Location:	35.04914 , -117.34281
Testing Phase:	Design	Pile Install Date:	12/12/2020
Test Weather:	Partly Cloudy	Pile Drive Time:	74.5 seconds
Technician:	Mikey Spaulding	Pile Type:	W6x9
Load Cell ID:	12095	Pile Length:	13.0 feet
Disp #1 ID:	17B0946	Pile Stick-up:	5.0 feet
Disp #2 ID:	17B0320	Pile Embedment:	8.0 feet
CD* Load:	N/A	Load Height:	5.0 feet
Notes:		Load Test Type:	Tensile

*Continuous displacement defined as continuous movement under a certain load until pile exceeds 1 inch or greater of displacement.

Applied Load (lbs) vs. Measured Displacement (in)

Test Load (lbs)	Disp @ 0 min (in)		Disp @ 1 min (in)	
	Disp #1	Disp #2	Disp #1	Disp #2
0	0	0	0	0
1000	0.0015	0.0025	0.0015	0.0025
2000	0.002	0.005	0.0025	0.005
3000	0.0035	0.0075	0.0035	0.0075
4000	0.004	0.0095	0.004	0.0095
5000	0.004	0.0115	0.004	0.0115
6000	0.007	0.014	0.007	0.014
7000	0.0085	0.0155	0.0085	0.0155
8000	0.017	0.0195	0.017	0.0195
9000	0.019	0.021	0.019	0.021
10000	0.022	0.0235	0.022	0.0235
11000	0.0265	0.027	0.0265	0.027
12000	0.029	0.029	0.029	0.029
13000	0.0315	0.0315	0.0315	0.0315
14000	0.0335	0.033	0.0335	0.033
15000	0.0395	0.0365	0.0395	0.037

Applied Load (lbs) vs. Measured Displacement (in)



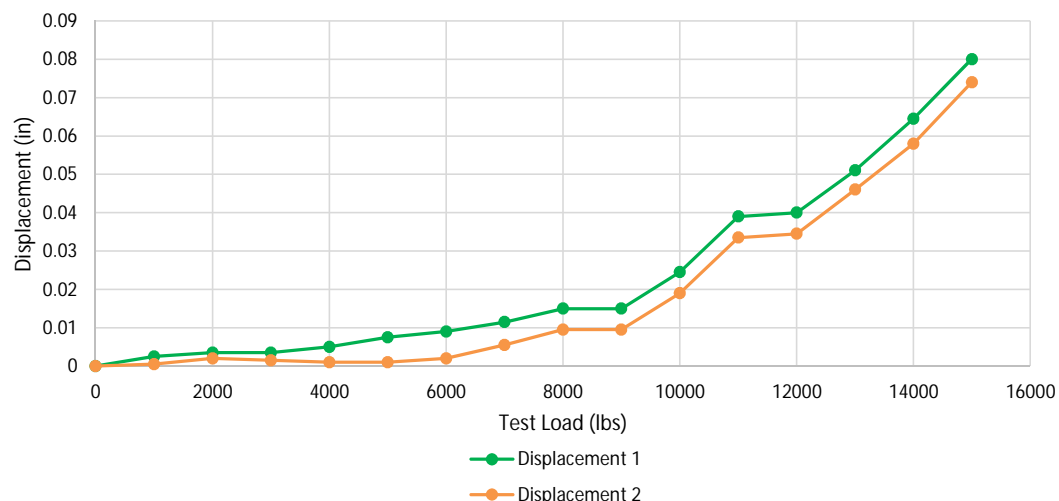
Project:	Lockhart Solar II	Pile ID:	PLT-07-6T
Test Date:	12/16/2020	Pile GPS Location:	35.04581 , -117.34925
Testing Phase:	Design	Pile Install Date:	12/12/2020
Test Weather:	Clear	Pile Drive Time:	67.4 seconds
Technician:	Mikey Spaulding	Pile Type:	W6x9
Load Cell ID:	12095	Pile Length:	11.0 feet
Disp #1 ID:	17B0946	Pile Stick-up:	5.0 feet
Disp #2 ID:	17B0320	Pile Embedment:	6.0 feet
CD* Load:	N/A	Load Height:	5.0 feet
Notes:		Load Test Type:	Tensile

*Continuous displacement defined as continuous movement under a certain load until pile exceeds 1 inch or greater of displacement.

Applied Load (lbs) vs. Measured Displacement (in)

Test Load (lbs)	Disp @ 0 min (in)		Disp @ 1 min (in)	
	Disp #1	Disp #2	Disp #1	Disp #2
0	0	0	0	0
1000	0.002	0.0005	0.0025	0.0005
2000	0.003	0.002	0.0035	0.002
3000	0.0035	0.0015	0.0035	0.0015
4000	0.005	0.001	0.005	0.001
5000	0.0065	0.0005	0.0075	0.001
6000	0.009	0.002	0.009	0.002
7000	0.0115	0.0055	0.0115	0.0055
8000	0.015	0.0095	0.015	0.0095
9000	0.015	0.0095	0.015	0.0095
10000	0.023	0.019	0.0245	0.019
11000	0.037	0.031	0.039	0.0335
12000	0.04	0.0345	0.04	0.0345
13000	0.0475	0.0445	0.051	0.046
14000	0.063	0.057	0.0645	0.058
15000	0.0795	0.074	0.08	0.074

Applied Load (lbs) vs. Measured Displacement (in)



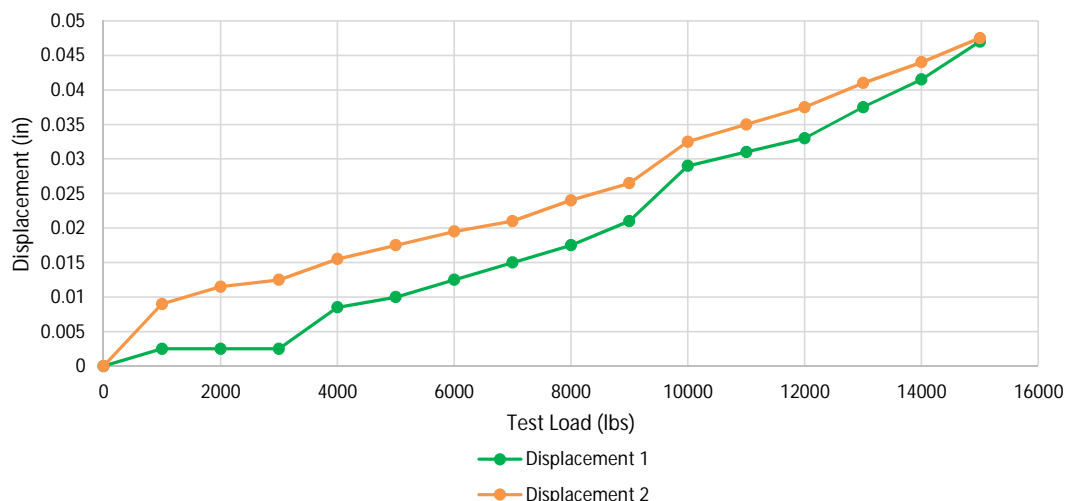
Project:	Lockhart Solar II	Pile ID:	PLT-07-8T
Test Date:	12/16/2020	Pile GPS Location:	35.04581 , -117.34925
Testing Phase:	Design	Pile Install Date:	12/12/2020
Test Weather:	Clear	Pile Drive Time:	87.7 seconds
Technician:	Mikey Spaulding	Pile Type:	W6x9
Load Cell ID:	12095	Pile Length:	13.0 feet
Disp #1 ID:	17B0946	Pile Stick-up:	5.0 feet
Disp #2 ID:	17B0320	Pile Embedment:	8.0 feet
CD* Load:	N/A	Load Height:	5.0 feet
Notes:		Load Test Type:	Tensile

*Continuous displacement defined as continuous movement under a certain load until pile exceeds 1 inch or greater of displacement.

Applied Load (lbs) vs. Measured Displacement (in)

Test Load (lbs)	Disp @ 0 min (in)		Disp @ 1 min (in)	
	Disp #1	Disp #2	Disp #1	Disp #2
0	0	0	0	0
1000	0.0025	0.009	0.0025	0.009
2000	0.0025	0.0115	0.0025	0.0115
3000	0.0025	0.0125	0.0025	0.0125
4000	0.0085	0.0135	0.0085	0.0155
5000	0.01	0.0175	0.01	0.0175
6000	0.0125	0.0195	0.0125	0.0195
7000	0.015	0.021	0.015	0.021
8000	0.0175	0.023	0.0175	0.024
9000	0.0205	0.026	0.021	0.0265
10000	0.029	0.032	0.029	0.0325
11000	0.0305	0.035	0.031	0.035
12000	0.033	0.0375	0.033	0.0375
13000	0.0375	0.041	0.0375	0.041
14000	0.0415	0.0435	0.0415	0.044
15000	0.0465	0.0475	0.047	0.0475

Applied Load (lbs) vs. Measured Displacement (in)



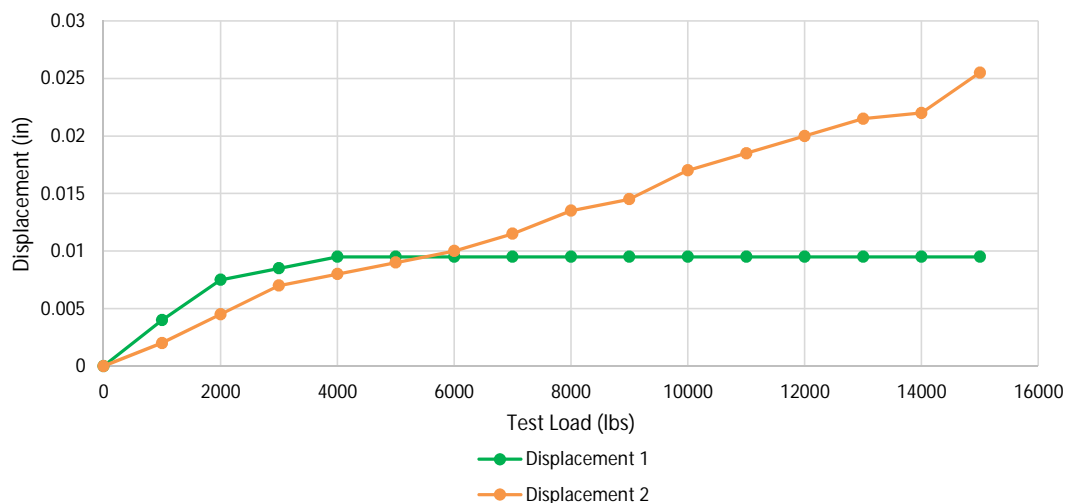
Project:	Lockhart Solar II	Pile ID:	PLT-09-6T
Test Date:	12/17/2020	Pile GPS Location:	35.04354 , -117.34103
Testing Phase:	Design	Pile Install Date:	12/12/2020
Test Weather:	Partly Cloudy	Pile Drive Time:	108.6 seconds
Technician:	Mikey Spaulding	Pile Type:	W6x9
Load Cell ID:	12095	Pile Length:	11.0 feet
Disp #1 ID:	17B0946	Pile Stick-up:	5.0 feet
Disp #2 ID:	17B0320	Pile Embedment:	6.0 feet
CD* Load:	N/A	Load Height:	5.0 feet
Notes:		Load Test Type:	Tensile

*Continuous displacement defined as continuous movement under a certain load until pile exceeds 1 inch or greater of displacement.

Applied Load (lbs) vs. Measured Displacement (in)

Test Load (lbs)	Disp @ 0 min (in)		Disp @ 1 min (in)	
	Disp #1	Disp #2	Disp #1	Disp #2
0	0	0	0	0
1000	0.003	0.002	0.004	0.002
2000	0.007	0.0045	0.0075	0.0045
3000	0.0085	0.007	0.0085	0.007
4000	0.0095	0.008	0.0095	0.008
5000	0.0095	0.009	0.0095	0.009
6000	0.0095	0.01	0.0095	0.01
7000	0.0095	0.0115	0.0095	0.0115
8000	0.0095	0.0135	0.0095	0.0135
9000	0.0095	0.0145	0.0095	0.0145
10000	0.0095	0.017	0.0095	0.017
11000	0.0095	0.0185	0.0095	0.0185
12000	0.0095	0.02	0.0095	0.02
13000	0.0095	0.021	0.0095	0.0215
14000	0.0095	0.022	0.0095	0.022
15000	0.0095	0.0255	0.0095	0.0255

Applied Load (lbs) vs. Measured Displacement (in)



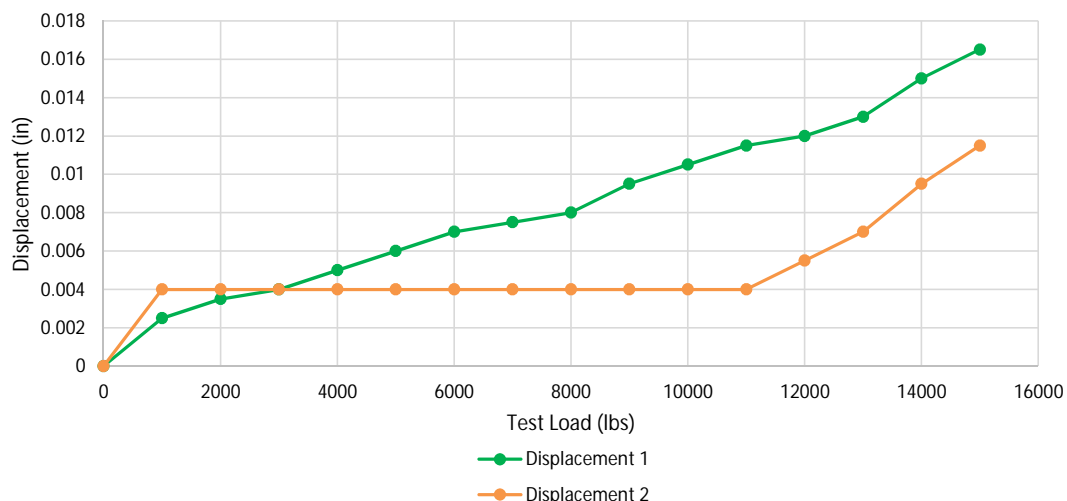
Project:	Lockhart Solar II	Pile ID:	PLT-09-8
Test Date:	12/17/2020	Pile GPS Location:	35.04354 , -117.34103
Testing Phase:	Design	Pile Install Date:	12/12/2020
Test Weather:	Partly Cloudy	Pile Drive Time:	128.9 seconds
Technician:	Mikey Spaulding	Pile Type:	W6x9
Load Cell ID:	12095	Pile Length:	13.0 feet
Disp #1 ID:	17B0946	Pile Stick-up:	5.0 feet
Disp #2 ID:	17B0320	Pile Embedment:	8.0 feet
CD* Load:	N/A	Load Height:	5.0 feet
Notes:		Load Test Type:	Tensile

*Continuous displacement defined as continuous movement under a certain load until pile exceeds 1 inch or greater of displacement.

Applied Load (lbs) vs. Measured Displacement (in)

Test Load (lbs)	Disp @ 0 min (in)		Disp @ 1 min (in)	
	Disp #1	Disp #2	Disp #1	Disp #2
0	0	0	0	0
1000	0.002	0.004	0.0025	0.004
2000	0.003	0.004	0.0035	0.004
3000	0.004	0.004	0.004	0.004
4000	0.005	0.004	0.005	0.004
5000	0.006	0.004	0.006	0.004
6000	0.0065	0.004	0.007	0.004
7000	0.0075	0.004	0.0075	0.004
8000	0.008	0.004	0.008	0.004
9000	0.009	0.004	0.0095	0.004
10000	0.01	0.004	0.0105	0.004
11000	0.011	0.004	0.0115	0.004
12000	0.012	0.0055	0.012	0.0055
13000	0.013	0.007	0.013	0.007
14000	0.015	0.0095	0.015	0.0095
15000	0.016	0.0115	0.0165	0.0115

Applied Load (lbs) vs. Measured Displacement (in)



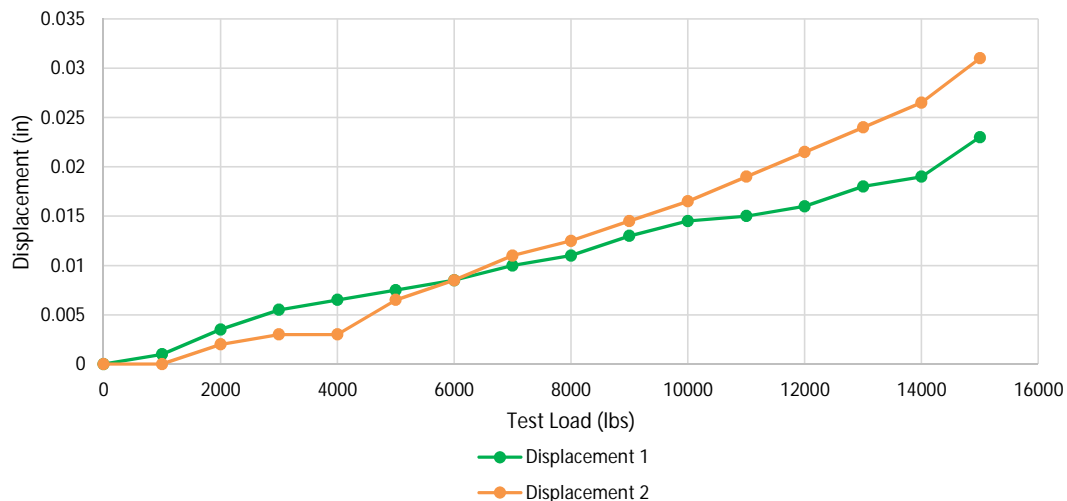
Project:	Lockhart Solar II	Pile ID:	PLT-11-6T
Test Date:	12/16/2020	Pile GPS Location:	35.04365 , -117.35328
Testing Phase:	Design	Pile Install Date:	12/12/2020
Test Weather:	Clear	Pile Drive Time:	58.0 seconds
Technician:	Mikey Spaulding	Pile Type:	W6x9
Load Cell ID:	12095	Pile Length:	11.0 feet
Disp #1 ID:	17B0946	Pile Stick-up:	5.0 feet
Disp #2 ID:	17B0320	Pile Embedment:	6.0 feet
CD* Load:	N/A	Load Height:	5.0 feet
Notes:		Load Test Type:	Tensile

*Continuous displacement defined as continuous movement under a certain load until pile exceeds 1 inch or greater of displacement.

Applied Load (lbs) vs. Measured Displacement (in)

Test Load (lbs)	Disp @ 0 min (in)		Disp @ 1 min (in)	
	Disp #1	Disp #2	Disp #1	Disp #2
0	0	0	0	0
1000	0.0005	0	0.001	0
2000	0.0035	0.002	0.0035	0.002
3000	0.005	0.0025	0.0055	0.003
4000	0.0065	0.003	0.0065	0.003
5000	0.0075	0.0065	0.0075	0.0065
6000	0.0085	0.0085	0.0085	0.0085
7000	0.0095	0.011	0.01	0.011
8000	0.011	0.012	0.011	0.0125
9000	0.013	0.0145	0.013	0.0145
10000	0.014	0.016	0.0145	0.0165
11000	0.015	0.0185	0.015	0.019
12000	0.016	0.0205	0.016	0.0215
13000	0.018	0.0235	0.018	0.024
14000	0.019	0.0255	0.019	0.0265
15000	0.0225	0.0305	0.023	0.031

Applied Load (lbs) vs. Measured Displacement (in)



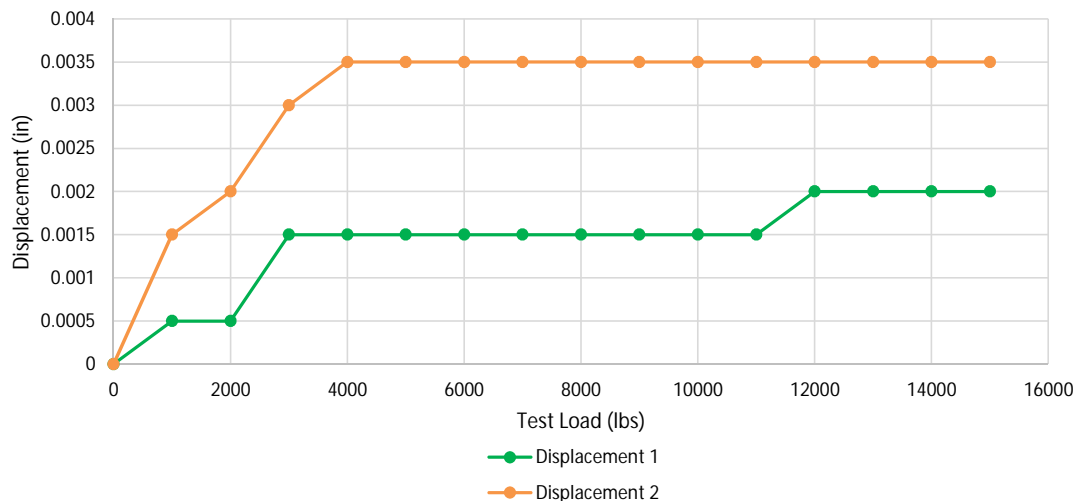
Project:	Lockhart Solar II	Pile ID:	PLT-11-8T
Test Date:	12/16/2020	Pile GPS Location:	35.04365 , -117.35328
Testing Phase:	Design	Pile Install Date:	12/12/2020
Test Weather:	Clear	Pile Drive Time:	125.4 seconds
Technician:	Mikey Spaulding	Pile Type:	W6x9
Load Cell ID:	12095	Pile Length:	13.0 feet
Disp #1 ID:	17B0946	Pile Stick-up:	5.0 feet
Disp #2 ID:	17B0320	Pile Embedment:	8.0 feet
CD* Load:	N/A	Load Height:	5.0 feet
Notes:		Load Test Type:	Tensile

*Continuous displacement defined as continuous movement under a certain load until pile exceeds 1 inch or greater of displacement.

Applied Load (lbs) vs. Measured Displacement (in)

Test Load (lbs)	Disp @ 0 min (in)		Disp @ 1 min (in)	
	Disp #1	Disp #2	Disp #1	Disp #2
0	0	0	0	0
1000	0.0005	0.0015	0.0005	0.0015
2000	0.0005	0.002	0.0005	0.002
3000	0.0015	0.003	0.0015	0.003
4000	0.0015	0.0035	0.0015	0.0035
5000	0.0015	0.0035	0.0015	0.0035
6000	0.0015	0.0035	0.0015	0.0035
7000	0.0015	0.0035	0.0015	0.0035
8000	0.0015	0.0035	0.0015	0.0035
9000	0.0015	0.0035	0.0015	0.0035
10000	0.0015	0.0035	0.0015	0.0035
11000	0.0015	0.0035	0.0015	0.0035
12000	0.002	0.0035	0.002	0.0035
13000	0.002	0.0035	0.002	0.0035
14000	0.002	0.0035	0.002	0.0035
15000	0.002	0.0035	0.002	0.0035

Applied Load (lbs) vs. Measured Displacement (in)



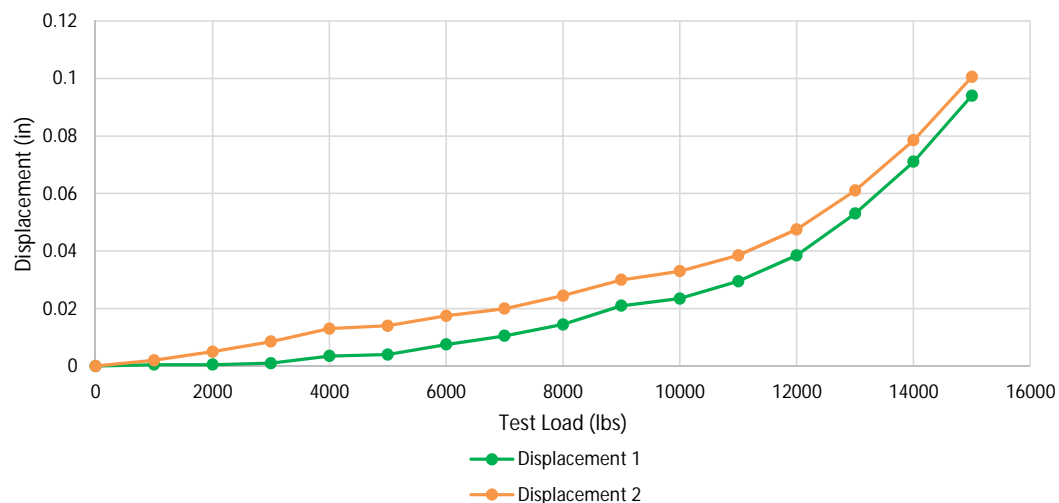
Project:	Lockhart Solar II	Pile ID:	PLT-12-6T
Test Date:	12/16/2020	Pile GPS Location:	35.04176 , -117.34938
Testing Phase:	Design	Pile Install Date:	12/12/2020
Test Weather:	Clear	Pile Drive Time:	35.2 seconds
Technician:	Mikey Spaulding	Pile Type:	W6x9
Load Cell ID:	12095	Pile Length:	11.0 feet
Disp #1 ID:	17B0946	Pile Stick-up:	5.0 feet
Disp #2 ID:	17B0320	Pile Embedment:	6.0 feet
CD* Load:	N/A	Load Height:	5.0 feet
Notes:		Load Test Type:	Tensile

*Continuous displacement defined as continuous movement under a certain load until pile exceeds 1 inch or greater of displacement.

Applied Load (lbs) vs. Measured Displacement (in)

Test Load (lbs)	Disp @ 0 min (in)		Disp @ 1 min (in)	
	Disp #1	Disp #2	Disp #1	Disp #2
0	0	0	0	0
1000	0.0005	0.002	0.0005	0.002
2000	0.0005	0.005	0.0005	0.005
3000	0.0005	0.0085	0.001	0.0085
4000	0.0035	0.013	0.0035	0.013
5000	0.004	0.014	0.004	0.014
6000	0.007	0.0175	0.0075	0.0175
7000	0.0105	0.02	0.0105	0.02
8000	0.0145	0.0245	0.0145	0.0245
9000	0.021	0.03	0.021	0.03
10000	0.0235	0.033	0.0235	0.033
11000	0.029	0.0385	0.0295	0.0385
12000	0.035	0.047	0.0385	0.0475
13000	0.05	0.06	0.053	0.061
14000	0.07	0.078	0.071	0.0785
15000	0.0895	0.0995	0.094	0.1005

Applied Load (lbs) vs. Measured Displacement (in)



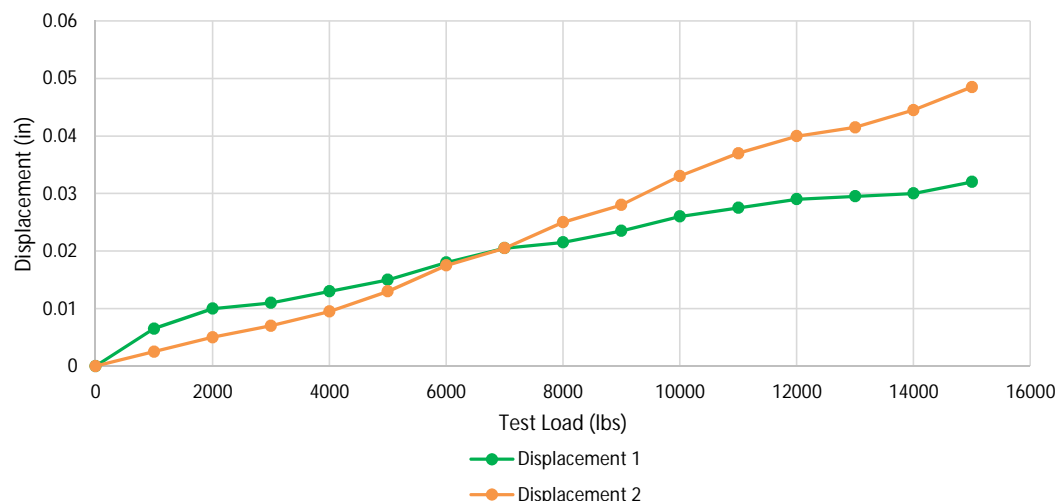
Project:	Lockhart Solar II	Pile ID:	PLT-12-8
Test Date:	12/16/2020	Pile GPS Location:	35.04176 , -117.34938
Testing Phase:	Design	Pile Install Date:	12/12/2020
Test Weather:	Clear	Pile Drive Time:	78.8 seconds
Technician:	Mikey Spaulding	Pile Type:	W6x9
Load Cell ID:	12095	Pile Length:	13.0 feet
Disp #1 ID:	17B0946	Pile Stick-up:	5.0 feet
Disp #2 ID:	17B0320	Pile Embedment:	8.0 feet
CD* Load:	N/A	Load Height:	5.0 feet
Notes:		Load Test Type:	Tensile

*Continuous displacement defined as continuous movement under a certain load until pile exceeds 1 inch or greater of displacement.

Applied Load (lbs) vs. Measured Displacement (in)

Test Load (lbs)	Disp @ 0 min (in)		Disp @ 1 min (in)	
	Disp #1	Disp #2	Disp #1	Disp #2
0	0	0	0	0
1000	0.004	0.0025	0.0065	0.0025
2000	0.01	0.0045	0.01	0.005
3000	0.011	0.007	0.011	0.007
4000	0.013	0.0095	0.013	0.0095
5000	0.0145	0.0125	0.015	0.013
6000	0.016	0.0175	0.018	0.0175
7000	0.019	0.0205	0.0205	0.0205
8000	0.0215	0.0245	0.0215	0.025
9000	0.023	0.028	0.0235	0.028
10000	0.025	0.033	0.026	0.033
11000	0.0275	0.037	0.0275	0.037
12000	0.029	0.0395	0.029	0.0395
13000	0.0295	0.0415	0.0295	0.0415
14000	0.03	0.0445	0.03	0.0445
15000	0.032	0.0485	0.032	0.0485

Applied Load (lbs) vs. Measured Displacement (in)



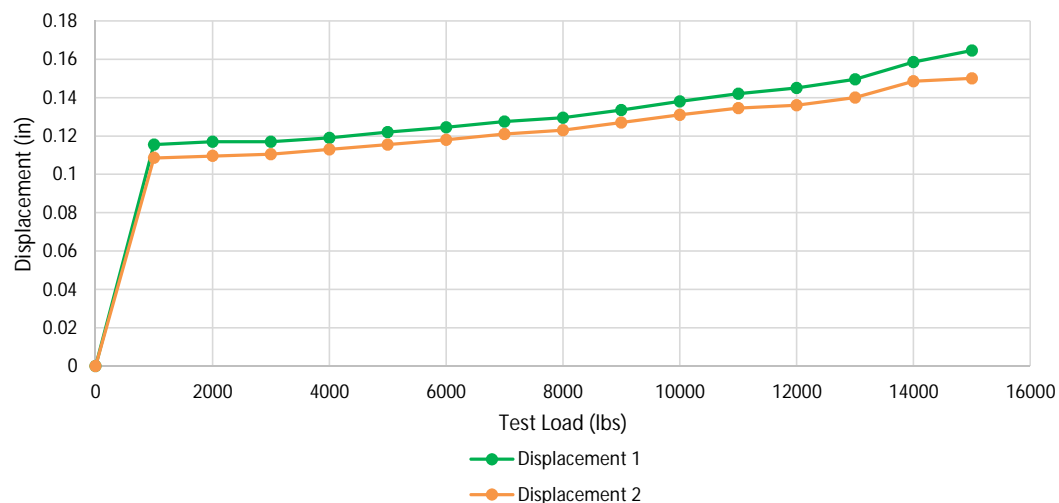
Project:	Lockhart Solar II	Pile ID:	PLT-13-6T
Test Date:	12/17/2020	Pile GPS Location:	35.04065 , -117.34463
Testing Phase:	Design	Pile Install Date:	12/12/2020
Test Weather:	Clear	Pile Drive Time:	114.9 seconds
Technician:	Mikey Spaulding	Pile Type:	W6x9
Load Cell ID:	12095	Pile Length:	11.0 feet
Disp #1 ID:	17B0946	Pile Stick-up:	5.0 feet
Disp #2 ID:	17B0320	Pile Embedment:	6.0 feet
CD* Load:	N/A	Load Height:	5.0 feet
Notes:		Load Test Type:	Tensile

*Continuous displacement defined as continuous movement under a certain load until pile exceeds 1 inch or greater of displacement.

Applied Load (lbs) vs. Measured Displacement (in)

Test Load (lbs)	Disp @ 0 min (in)		Disp @ 1 min (in)	
	Disp #1	Disp #2	Disp #1	Disp #2
0	0	0	0	0
1000	0.0145	0.005	0.1155	0.1085
2000	0.116	0.109	0.117	0.1095
3000	0.117	0.1095	0.117	0.1105
4000	0.1185	0.112	0.119	0.113
5000	0.122	0.115	0.122	0.1155
6000	0.1235	0.1175	0.1245	0.118
7000	0.1265	0.1205	0.1275	0.121
8000	0.129	0.1225	0.1295	0.123
9000	0.1325	0.127	0.1335	0.127
10000	0.138	0.1305	0.138	0.131
11000	0.1405	0.133	0.142	0.1345
12000	0.143	0.136	0.145	0.136
13000	0.1475	0.1389	0.1495	0.14
14000	0.158	0.146	0.1585	0.1485
15000	0.163	0.1495	0.1645	0.15

Applied Load (lbs) vs. Measured Displacement (in)



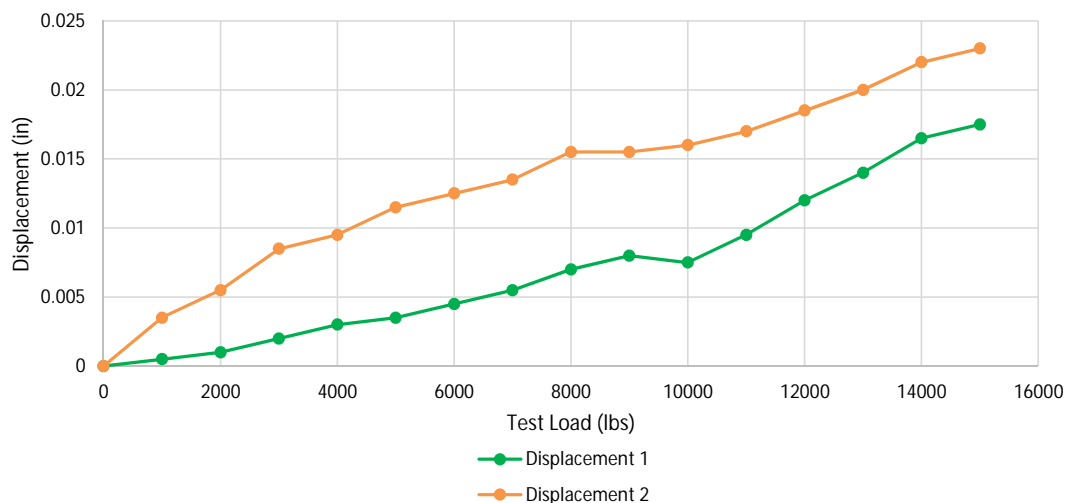
Project:	Lockhart Solar II	Pile ID:	PLT-13-8
Test Date:	12/17/2020	Pile GPS Location:	35.04065 , -117.34463
Testing Phase:	Design	Pile Install Date:	12/12/2020
Test Weather:	Clear	Pile Drive Time:	98.5 seconds
Technician:	Mikey Spaulding	Pile Type:	W6x9
Load Cell ID:	12095	Pile Length:	13.0 feet
Disp #1 ID:	17B0946	Pile Stick-up:	5.0 feet
Disp #2 ID:	17B0320	Pile Embedment:	8.0 feet
CD* Load:	N/A	Load Height:	5.0 feet
Notes:		Load Test Type:	Tensile

*Continuous displacement defined as continuous movement under a certain load until pile exceeds 1 inch or greater of displacement.

Applied Load (lbs) vs. Measured Displacement (in)

Test Load (lbs)	Disp @ 0 min (in)		Disp @ 1 min (in)	
	Disp #1	Disp #2	Disp #1	Disp #2
0	0	0	0	0
1000	0.0005	0.003	0.0005	0.0035
2000	0.001	0.0055	0.001	0.0055
3000	0.002	0.0085	0.002	0.0085
4000	0.003	0.0095	0.003	0.0095
5000	0.0035	0.0115	0.0035	0.0115
6000	0.0045	0.0125	0.0045	0.0125
7000	0.005	0.0135	0.0055	0.0135
8000	0.007	0.015	0.007	0.0155
9000	0.0075	0.0155	0.008	0.0155
10000	0.0075	0.016	0.0075	0.016
11000	0.009	0.017	0.0095	0.017
12000	0.0115	0.0185	0.012	0.0185
13000	0.0135	0.02	0.014	0.02
14000	0.015	0.022	0.0165	0.022
15000	0.0175	0.023	0.0175	0.023

Applied Load (lbs) vs. Measured Displacement (in)



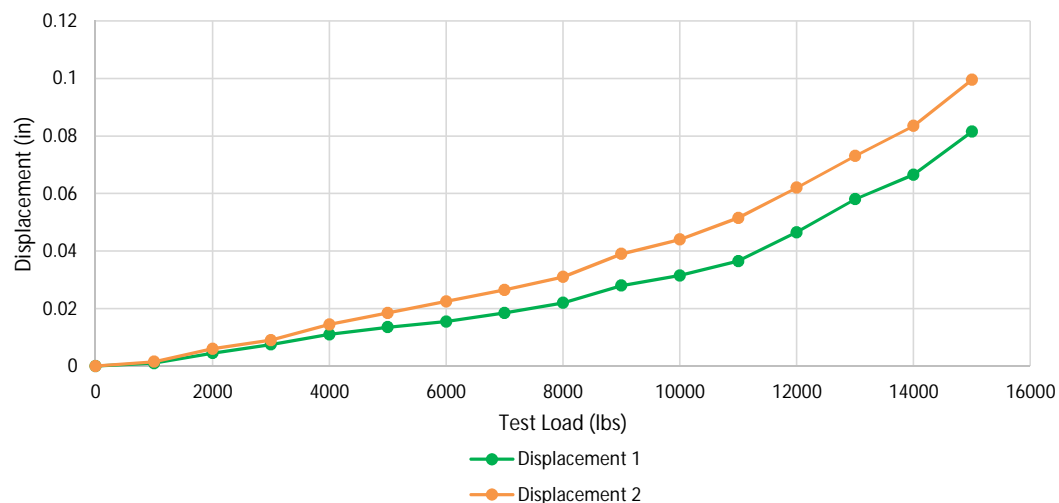
Project:	Lockhart Solar II	Pile ID:	PLT-14-6T
Test Date:	12/16/2020	Pile GPS Location:	35.03919 , -117.35615
Testing Phase:	Design	Pile Install Date:	12/12/2020
Test Weather:	Clear	Pile Drive Time:	47.6 seconds
Technician:	Mikey Spaulding	Pile Type:	W6x9
Load Cell ID:	12095	Pile Length:	11.0 feet
Disp #1 ID:	17B0946	Pile Stick-up:	5.0 feet
Disp #2 ID:	17B0320	Pile Embedment:	6.0 feet
CD* Load:	N/A	Load Height:	5.0 feet
Notes:		Load Test Type:	Tensile

*Continuous displacement defined as continuous movement under a certain load until pile exceeds 1 inch or greater of displacement.

Applied Load (lbs) vs. Measured Displacement (in)

Test Load (lbs)	Disp @ 0 min (in)		Disp @ 1 min (in)	
	Disp #1	Disp #2	Disp #1	Disp #2
0	0	0	0	0
1000	0.001	0.0015	0.001	0.0015
2000	0.004	0.0055	0.0045	0.006
3000	0.0075	0.009	0.0075	0.009
4000	0.011	0.014	0.011	0.0145
5000	0.0135	0.0175	0.0135	0.0185
6000	0.015	0.021	0.0155	0.0225
7000	0.0185	0.0225	0.0185	0.0265
8000	0.0215	0.03	0.022	0.031
9000	0.0275	0.0375	0.028	0.039
10000	0.03	0.0425	0.0315	0.044
11000	0.0355	0.0505	0.0365	0.0515
12000	0.0445	0.06	0.0465	0.062
13000	0.054	0.071	0.058	0.073
14000	0.064	0.082	0.0665	0.0835
15000	0.0795	0.099	0.0815	0.0995

Applied Load (lbs) vs. Measured Displacement (in)



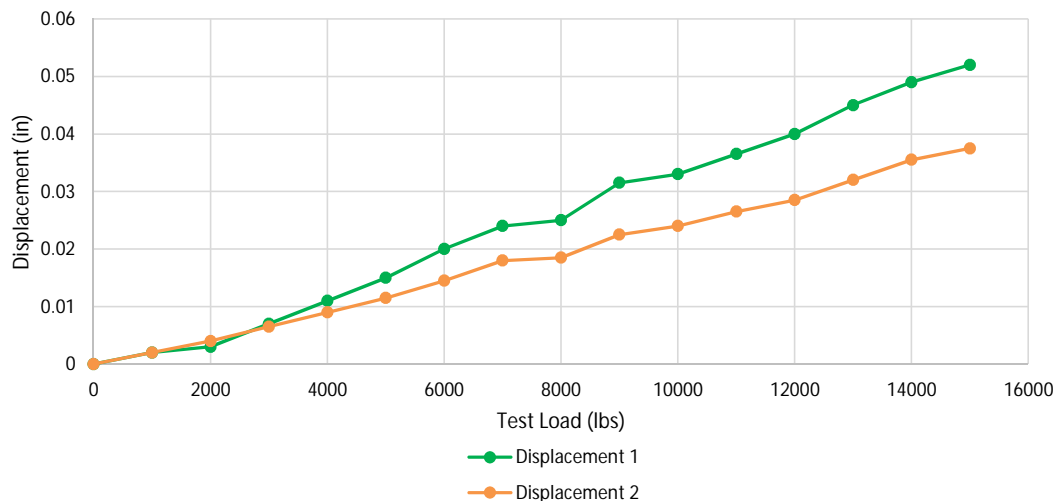
Project:	Lockhart Solar II	Pile ID:	PLT-14-8T
Test Date:	12/16/2020	Pile GPS Location:	35.03919 , -117.35615
Testing Phase:	Design	Pile Install Date:	12/12/2020
Test Weather:	Clear	Pile Drive Time:	77.7 seconds
Technician:	Mikey Spaulding	Pile Type:	W6x9
Load Cell ID:	12095	Pile Length:	13.0 feet
Disp #1 ID:	17B0946	Pile Stick-up:	5.0 feet
Disp #2 ID:	17B0320	Pile Embedment:	8.0 feet
CD* Load:	N/A	Load Height:	5.0 feet
Notes:		Load Test Type:	Tensile

*Continuous displacement defined as continuous movement under a certain load until pile exceeds 1 inch or greater of displacement.

Applied Load (lbs) vs. Measured Displacement (in)

Test Load (lbs)	Disp @ 0 min (in)		Disp @ 1 min (in)	
	Disp #1	Disp #2	Disp #1	Disp #2
0	0	0	0	0
1000	0.002	0.002	0.002	0.002
2000	0.003	0.004	0.003	0.004
3000	0.0065	0.0065	0.007	0.0065
4000	0.011	0.009	0.011	0.009
5000	0.015	0.0115	0.015	0.0115
6000	0.02	0.0145	0.02	0.0145
7000	0.024	0.018	0.024	0.018
8000	0.0245	0.0185	0.025	0.0185
9000	0.0315	0.0225	0.0315	0.0225
10000	0.033	0.0235	0.033	0.024
11000	0.0365	0.026	0.0365	0.0265
12000	0.0395	0.028	0.04	0.0285
13000	0.045	0.032	0.045	0.032
14000	0.049	0.035	0.049	0.0355
15000	0.052	0.0375	0.052	0.0375

Applied Load (lbs) vs. Measured Displacement (in)



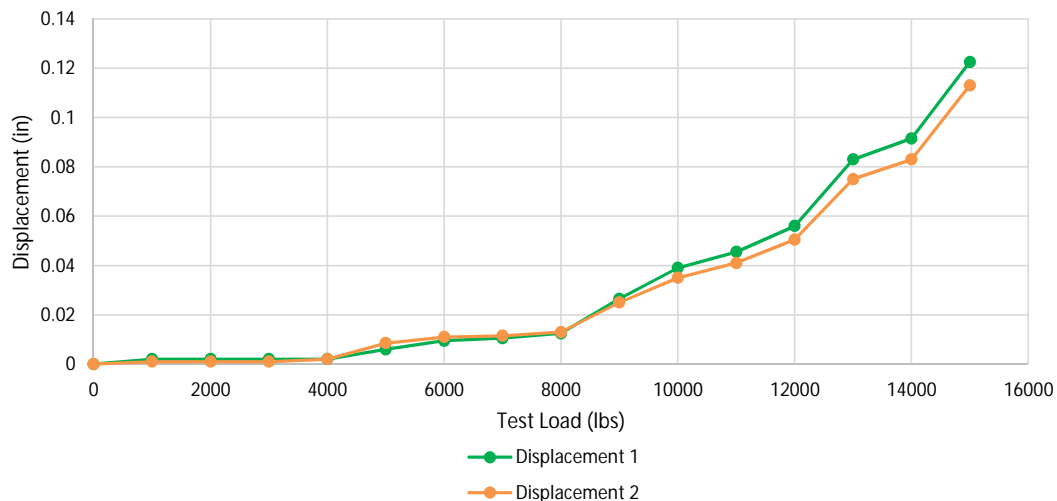
Project:	Lockhart Solar II	Pile ID:	PLT-16-6T
Test Date:	12/17/2020	Pile GPS Location:	35.03811 , -117.35163
Testing Phase:	Design	Pile Install Date:	12/12/2020
Test Weather:	Clear	Pile Drive Time:	35.6 seconds
Technician:	Mikey Spaulding	Pile Type:	W6x9
Load Cell ID:	12095	Pile Length:	11.0 feet
Disp #1 ID:	17B0946	Pile Stick-up:	5.0 feet
Disp #2 ID:	17B0320	Pile Embedment:	6.0 feet
CD* Load:	N/A	Load Height:	5.0 feet
Notes:		Load Test Type:	Tensile

*Continuous displacement defined as continuous movement under a certain load until pile exceeds 1 inch or greater of displacement.

Applied Load (lbs) vs. Measured Displacement (in)

Test Load (lbs)	Disp @ 0 min (in)		Disp @ 1 min (in)	
	Disp #1	Disp #2	Disp #1	Disp #2
0	0	0	0	0
1000	0.0015	0.001	0.002	0.001
2000	0.002	0.001	0.002	0.001
3000	0.002	0.0005	0.002	0.001
4000	0.002	0.002	0.002	0.002
5000	0.006	0.008	0.006	0.0085
6000	0.009	0.0105	0.0095	0.011
7000	0.0105	0.011	0.0105	0.0115
8000	0.0115	0.012	0.0125	0.013
9000	0.0255	0.0245	0.0265	0.025
10000	0.038	0.0345	0.039	0.035
11000	0.0425	0.039	0.0455	0.041
12000	0.05	0.05	0.056	0.0505
13000	0.0815	0.074	0.083	0.075
14000	0.089	0.083	0.0915	0.083
15000	0.12	0.1115	0.1225	0.113

Applied Load (lbs) vs. Measured Displacement (in)



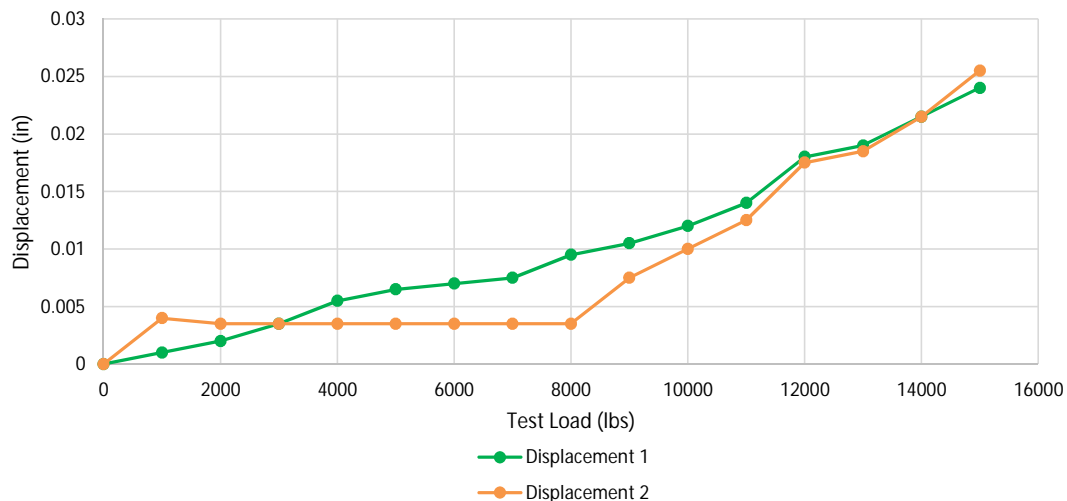
Project:	Lockhart Solar II	Pile ID:	PLT-16-8T
Test Date:	12/17/2020	Pile GPS Location:	35.03811 , -117.35163
Testing Phase:	Design	Pile Install Date:	12/12/2020
Test Weather:	Clear	Pile Drive Time:	63.2 seconds
Technician:	Mikey Spaulding	Pile Type:	W6x9
Load Cell ID:	12095	Pile Length:	13.0 feet
Disp #1 ID:	17B0946	Pile Stick-up:	5.0 feet
Disp #2 ID:	17B0320	Pile Embedment:	8.0 feet
CD* Load:	N/A	Load Height:	5.0 feet
Notes:		Load Test Type:	Tensile

*Continuous displacement defined as continuous movement under a certain load until pile exceeds 1 inch or greater of displacement.

Applied Load (lbs) vs. Measured Displacement (in)

Test Load (lbs)	Disp @ 0 min (in)		Disp @ 1 min (in)	
	Disp #1	Disp #2	Disp #1	Disp #2
0	0	0	0	0
1000	0.001	0.004	0.001	0.004
2000	0.002	0.0035	0.002	0.0035
3000	0.0035	0.0035	0.0035	0.0035
4000	0.005	0.0035	0.0055	0.0035
5000	0.0065	0.0035	0.0065	0.0035
6000	0.007	0.0035	0.007	0.0035
7000	0.0075	0.0035	0.0075	0.0035
8000	0.0095	0.0035	0.0095	0.0035
9000	0.0105	0.0075	0.0105	0.0075
10000	0.011	0.01	0.012	0.01
11000	0.013	0.0125	0.014	0.0125
12000	0.0145	0.017	0.018	0.0175
13000	0.0185	0.0185	0.019	0.0185
14000	0.0205	0.0215	0.0215	0.0215
15000	0.022	0.025	0.024	0.0255

Applied Load (lbs) vs. Measured Displacement (in)



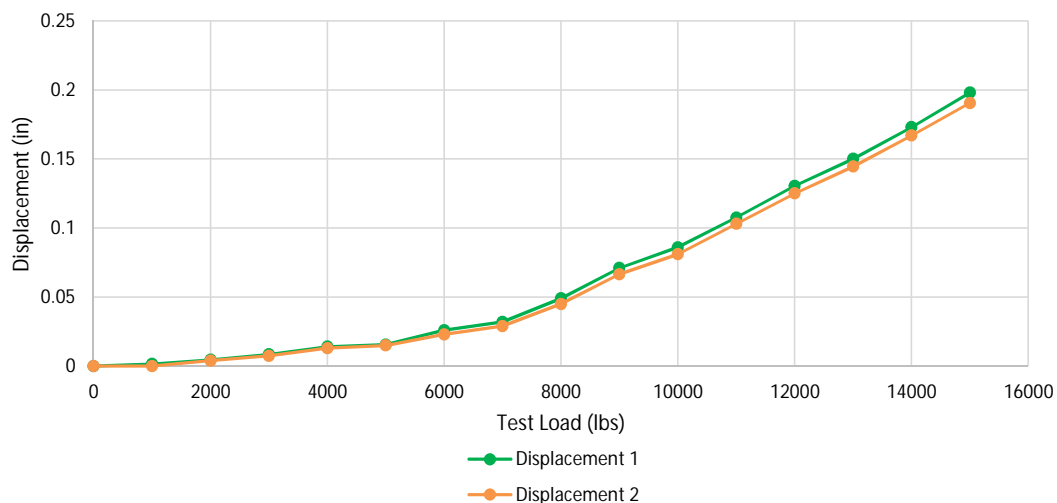
Project:	Lockhart Solar II	Pile ID:	PLT-18-6T
Test Date:	12/17/2020	Pile GPS Location:	35.03886 , -117.34090
Testing Phase:	Design	Pile Install Date:	12/12/2020
Test Weather:	Partly Cloudy	Pile Drive Time:	56.0 seconds
Technician:	Mikey Spaulding	Pile Type:	W6x9
Load Cell ID:	12095	Pile Length:	11.0 feet
Disp #1 ID:	17B0946	Pile Stick-up:	5.0 feet
Disp #2 ID:	17B0320	Pile Embedment:	6.0 feet
CD* Load:	N/A	Load Height:	5.0 feet
Notes:		Load Test Type:	Tensile

*Continuous displacement defined as continuous movement under a certain load until pile exceeds 1 inch or greater of displacement.

Applied Load (lbs) vs. Measured Displacement (in)

Test Load (lbs)	Disp @ 0 min (in)		Disp @ 1 min (in)	
	Disp #1	Disp #2	Disp #1	Disp #2
0	0	0	0	0
1000	0.0015	0	0.0015	0
2000	0.0045	0.004	0.0045	0.004
3000	0.006	0.007	0.0085	0.0075
4000	0.014	0.0125	0.014	0.013
5000	0.015	0.0145	0.0155	0.015
6000	0.0245	0.0225	0.026	0.023
7000	0.0315	0.029	0.032	0.029
8000	0.0475	0.045	0.049	0.045
9000	0.0695	0.066	0.071	0.0665
10000	0.0845	0.08	0.086	0.081
11000	0.106	0.1025	0.1075	0.103
12000	0.1285	0.1245	0.1305	0.125
13000	0.145	0.1415	0.15	0.1445
14000	0.1695	0.1645	0.173	0.167
15000	0.1955	0.1895	0.198	0.1905

Applied Load (lbs) vs. Measured Displacement (in)



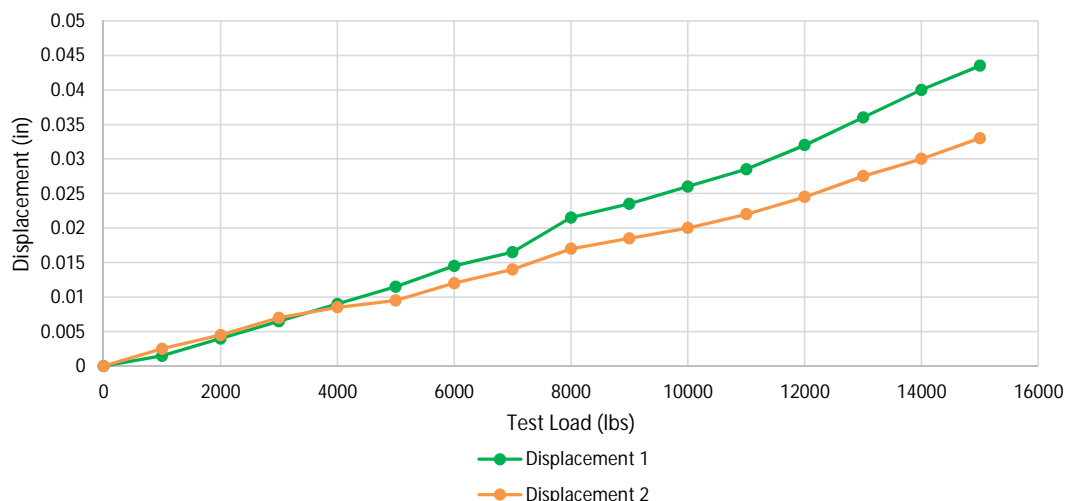
Project:	Lockhart Solar II	Pile ID:	PLT-18-8T
Test Date:	12/17/2020	Pile GPS Location:	35.03886 , -117.34090
Testing Phase:	Design	Pile Install Date:	12/12/2020
Test Weather:	Partly Cloudy	Pile Drive Time:	83.2 seconds
Technician:	Mikey Spaulding	Pile Type:	W6x9
Load Cell ID:	12095	Pile Length:	13.0 feet
Disp #1 ID:	17B0946	Pile Stick-up:	5.0 feet
Disp #2 ID:	17B0320	Pile Embedment:	8.0 feet
CD* Load:	N/A	Load Height:	5.0 feet
Notes:		Load Test Type:	Tensile

*Continuous displacement defined as continuous movement under a certain load until pile exceeds 1 inch or greater of displacement.

Applied Load (lbs) vs. Measured Displacement (in)

Test Load (lbs)	Disp @ 0 min (in)		Disp @ 1 min (in)	
	Disp #1	Disp #2	Disp #1	Disp #2
0	0	0	0	0
1000	0.0015	0.0025	0.0015	0.0025
2000	0.004	0.0045	0.004	0.0045
3000	0.0065	0.0065	0.0065	0.007
4000	0.009	0.008	0.009	0.0085
5000	0.0115	0.0095	0.0115	0.0095
6000	0.014	0.012	0.0145	0.012
7000	0.0165	0.0135	0.0165	0.014
8000	0.0215	0.017	0.0215	0.017
9000	0.0235	0.0185	0.0235	0.0185
10000	0.0255	0.02	0.026	0.02
11000	0.028	0.022	0.0285	0.022
12000	0.0315	0.0245	0.032	0.0245
13000	0.0355	0.027	0.036	0.0275
14000	0.0395	0.03	0.04	0.03
15000	0.043	0.0325	0.0435	0.033

Applied Load (lbs) vs. Measured Displacement (in)



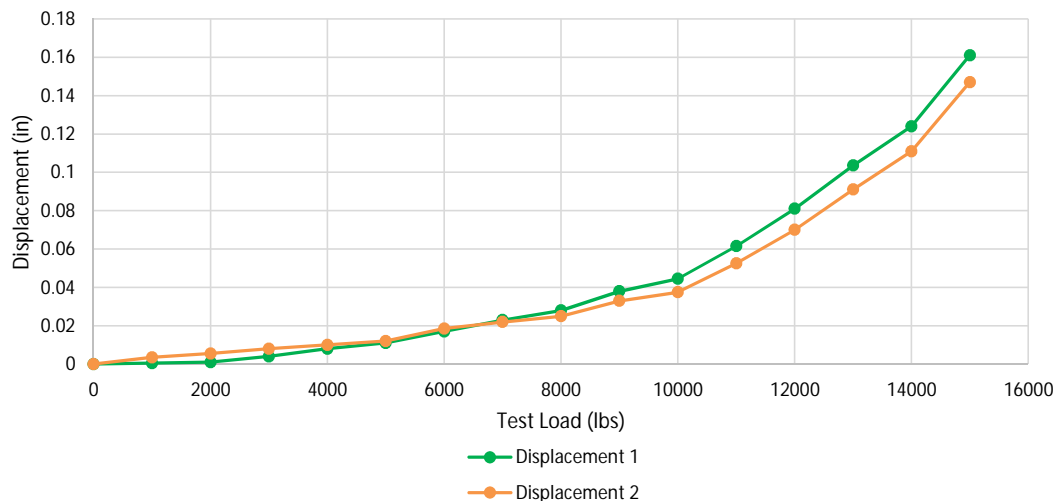
Project:	Lockhart Solar II	Pile ID:	PLT-20-6T
Test Date:	12/17/2020	Pile GPS Location:	35.03794 , -117.33266
Testing Phase:	Design	Pile Install Date:	12/12/2020
Test Weather:	Cloudy	Pile Drive Time:	37.4 seconds
Technician:	Mikey Spaulding	Pile Type:	W6x9
Load Cell ID:	12095	Pile Length:	11.0 feet
Disp #1 ID:	17B0946	Pile Stick-up:	5.0 feet
Disp #2 ID:	17B0320	Pile Embedment:	6.0 feet
CD* Load:	N/A	Load Height:	5.0 feet
Notes:		Load Test Type:	Tensile

*Continuous displacement defined as continuous movement under a certain load until pile exceeds 1 inch or greater of displacement.

Applied Load (lbs) vs. Measured Displacement (in)

Test Load (lbs)	Disp @ 0 min (in)		Disp @ 1 min (in)	
	Disp #1	Disp #2	Disp #1	Disp #2
0	0	0	0	0
1000	0.0005	0.0035	0.0005	0.0035
2000	0.001	0.0055	0.001	0.0055
3000	0.003	0.008	0.004	0.008
4000	0.0075	0.0095	0.008	0.01
5000	0.01	0.0115	0.011	0.012
6000	0.017	0.018	0.017	0.0185
7000	0.023	0.022	0.023	0.022
8000	0.028	0.025	0.028	0.025
9000	0.038	0.0325	0.038	0.033
10000	0.044	0.0375	0.0445	0.0375
11000	0.0605	0.052	0.0615	0.0525
12000	0.0795	0.07	0.081	0.07
13000	0.102	0.0905	0.1035	0.091
14000	0.1185	0.1105	0.124	0.111
15000	0.1575	0.145	0.161	0.147

Applied Load (lbs) vs. Measured Displacement (in)



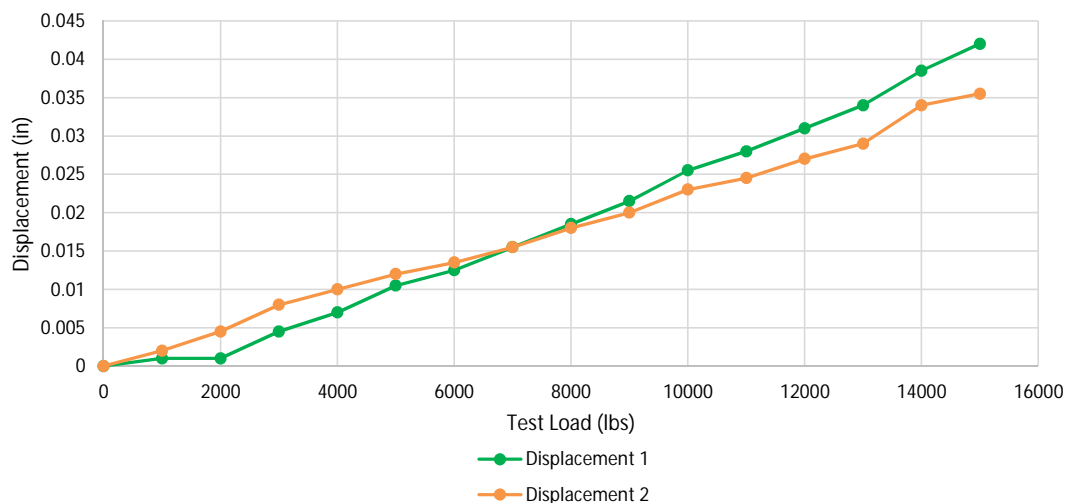
Project:	Lockhart Solar II	Pile ID:	PLT-20-8T
Test Date:	12/17/2020	Pile GPS Location:	35.03794 , -117.33266
Testing Phase:	Design	Pile Install Date:	12/12/2020
Test Weather:	Partly Cloudy	Pile Drive Time:	61.2 seconds
Technician:	Mikey Spaulding	Pile Type:	W6x9
Load Cell ID:	12095	Pile Length:	13.0 feet
Disp #1 ID:	17B0946	Pile Stick-up:	5.0 feet
Disp #2 ID:	17B0320	Pile Embedment:	8.0 feet
CD* Load:	N/A	Load Height:	5.0 feet
Notes:		Load Test Type:	Tensile

*Continuous displacement defined as continuous movement under a certain load until pile exceeds 1 inch or greater of displacement.

Applied Load (lbs) vs. Measured Displacement (in)

Test Load (lbs)	Disp @ 0 min (in)		Disp @ 1 min (in)	
	Disp #1	Disp #2	Disp #1	Disp #2
0	0	0	0	0
1000	0.0005	0.002	0.001	0.002
2000	0.001	0.0045	0.001	0.0045
3000	0.0045	0.008	0.0045	0.008
4000	0.0065	0.0095	0.007	0.01
5000	0.0105	0.012	0.0105	0.012
6000	0.012	0.0135	0.0125	0.0135
7000	0.0145	0.015	0.0155	0.0155
8000	0.0175	0.0175	0.0185	0.018
9000	0.0205	0.0195	0.0215	0.02
10000	0.025	0.023	0.0255	0.023
11000	0.028	0.0245	0.028	0.0245
12000	0.031	0.027	0.031	0.027
13000	0.0335	0.029	0.034	0.029
14000	0.0385	0.033	0.0385	0.034
15000	0.042	0.035	0.042	0.0355

Applied Load (lbs) vs. Measured Displacement (in)



Appendix 5

Lateral Pile Load Testing Data

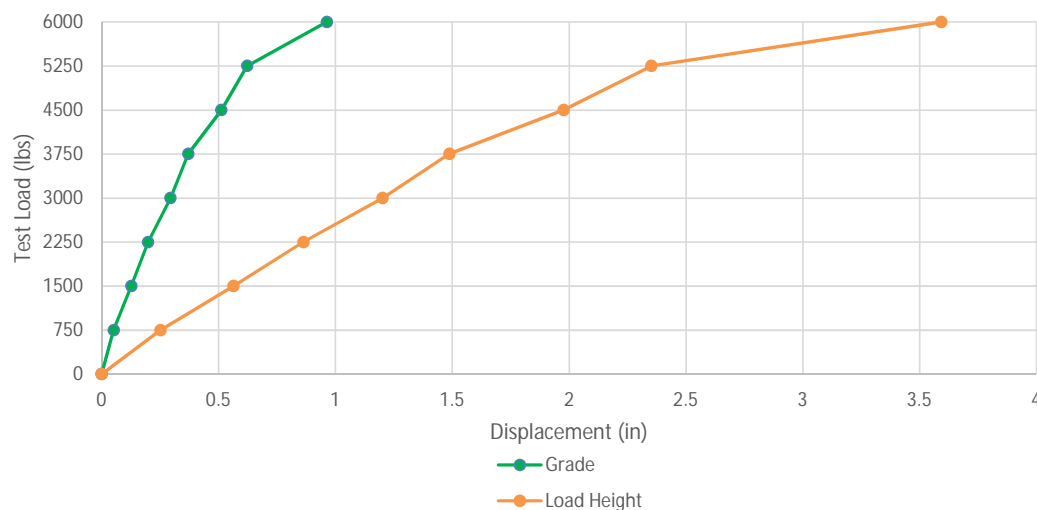
Project:	Lockhart Solar II	Pile ID:	PLT-01-6L
Test Date:	12/16/2020	Pile GPS Location:	35.04873 , -117.35649
Testing Phase:	Design	Pile Install Date:	12/12/2020
Test Weather:	Clear	Pile Drive Time:	24.8 seconds
Technician:	Mikey Spaulding	Pile Type:	W6x9
Load Cell ID:	12095	Pile Length:	11.0 feet
Disp #1 ID:	17B0946	Pile Stick-up:	5.0 feet
Disp #2 ID:	17B0320	Pile Embedment:	6.0 feet
Failure Load*:	5,800 lbs	Load Height:	4.5 feet
Notes:	Displaced 4in at 5800 lbs on attempt to load form C	Load Test Type:	Lateral

*Failure Load is load at which displacement exceeds capacity of gauge (4 in)

Applied Load (lbs) vs. Measured Displacement (in)

Test Load (lbs)	Disp @ 0 min (in)		Disp @ 1 min (in)	
	Grade	Load Height	Grade	Load Height
0	0	0	-	-
750	0.0505	0.2405	0.051	0.251
1500	0.127	0.564	0.127	0.5715
0	0.0245	0.067	-	-
1500	0.126	0.548	0.1265	0.563
2250	0.198	0.8555	0.198	0.863
3000	0.291	1.193	0.2925	1.2185
0	0.0875	0.2095	-	-
3000	0.293	1.18	0.294	1.2015
3750	0.3665	1.487	0.37	1.4875
4500	0.509	1.934	0.512	1.9765
5250	0.607	2.2835	0.622	2.3525
6000	0.9575	3.537	0.9635	3.593
0	0.561	1.705	-	-

Applied Load (lbs) vs. Measured Displacement (in)



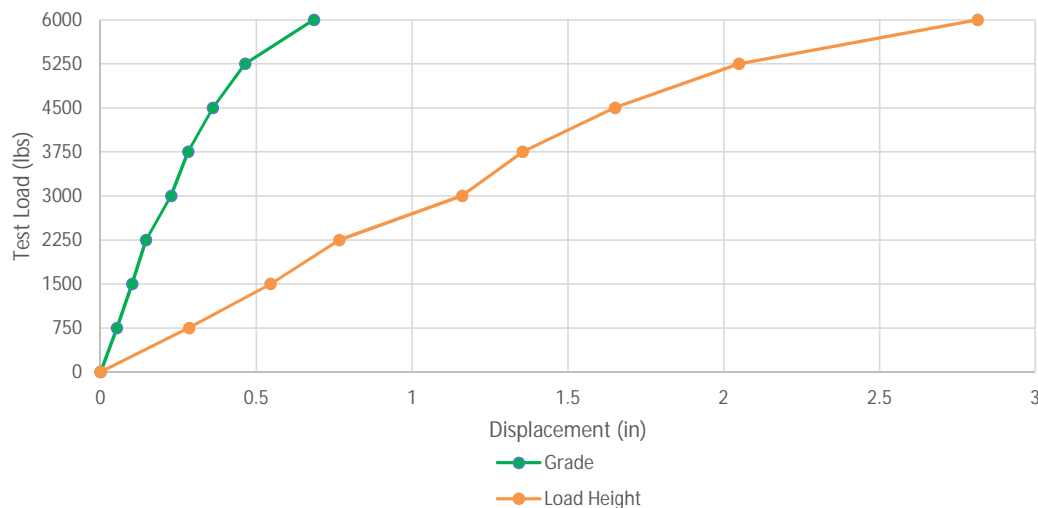
Project:	Lockhart Solar II	Pile ID:	PLT-01-8L
Test Date:	12/16/2020	Pile GPS Location:	35.04873 , -117.35649
Testing Phase:	Design	Pile Install Date:	12/12/2020
Test Weather:	Clear	Pile Drive Time:	42.2 seconds
Technician:	Mikey Spaulding	Pile Type:	W6x9
Load Cell ID:	12095	Pile Length:	13.0 feet
Disp #1 ID:	17B0946	Pile Stick-up:	5.0 feet
Disp #2 ID:	17B0320	Pile Embedment:	8.0 feet
Failure Load*:	6,300 lbs	Load Height:	4.5 feet
Notes:	Continuous displacement of 4in at 6300	Load Test Type:	Lateral

*Failure Load is load at which displacement exceeds capacity of gauge (4 in)

Applied Load (lbs) vs. Measured Displacement (in)

Test Load (lbs)	Disp @ 0 min (in)		Disp @ 1 min (in)	
	Grade	Load Height	Grade	Load Height
0	0	0	-	-
750	0.052	0.28	0.052	0.284
1500	0.0935	0.4865	0.094	0.487
0	0.0165	0.0635	-	-
1500	0.098	0.5055	0.101	0.545
2250	0.142	0.745	0.1455	0.766
3000	0.212	1.051	0.2125	1.061
0	0.0645	0.1915	-	-
3000	0.2255	1.09	0.2265	1.16
3750	0.28	1.335	0.2805	1.3545
4500	0.36	1.6475	0.3605	1.651
5250	0.462	2.036	0.4635	2.0485
6000	0.622	2.677	0.6845	2.815
0	0.355	1.129	-	-

Applied Load (lbs) vs. Measured Displacement (in)

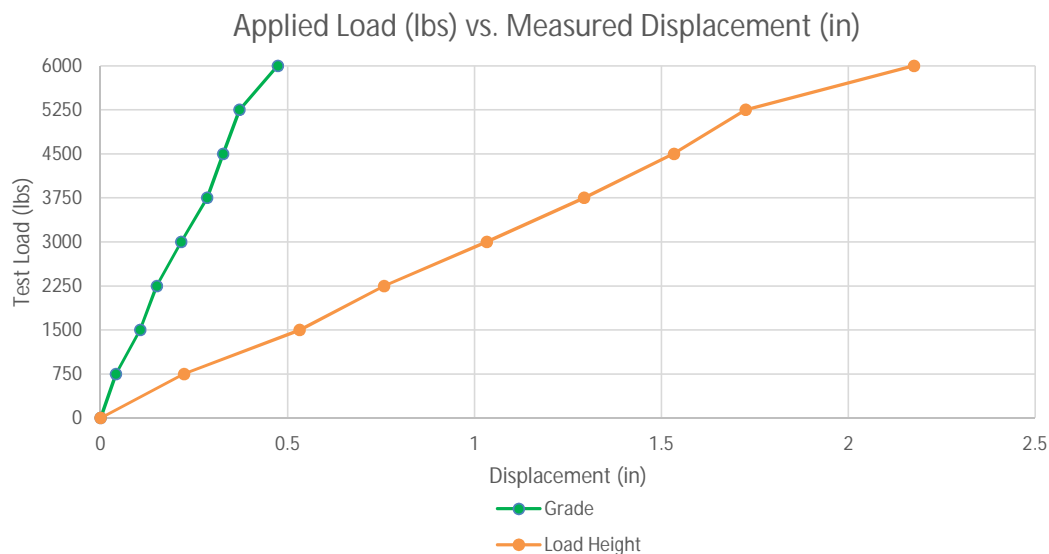


Project:	Lockhart Solar II	Pile ID:	PLT-02-6L
Test Date:	12/16/2020	Pile GPS Location:	35.04909 , -117.34883
Testing Phase:	Design	Pile Install Date:	12/12/2020
Test Weather:	Clear	Pile Drive Time:	41.8 seconds
Technician:	Mikey Spaulding	Pile Type:	W6x9
Load Cell ID:	12095	Pile Length:	11.0 feet
Disp #1 ID:	17B0946	Pile Stick-up:	5.0 feet
Disp #2 ID:	17B0320	Pile Embedment:	6.0 feet
Failure Load*:	6,400 lbs	Load Height:	4.5 feet
Notes:	Continuous 4in displacement at 6400	Load Test Type:	Lateral

*Failure Load is load at which displacement exceeds capacity of gauge (4 in)

Applied Load (lbs) vs. Measured Displacement (in)

Test Load (lbs)	Disp @ 0 min (in)		Disp @ 1 min (in)	
	Grade	Load Height	Grade	Load Height
0	0	0	-	-
750	0.04	0.2205	0.041	0.223
1500	0.089	0.455	0.0895	0.46
0	0.0055	0.034	-	-
1500	0.1025	0.51	0.1055	0.532
2250	0.147	0.708	0.15	0.758
3000	0.2005	0.951	0.205	0.981
0	0.0345	0.091	-	-
3000	0.21	0.983	0.2155	1.033
3750	0.284	1.281	0.285	1.293
4500	0.3255	1.506	0.3275	1.533
5250	0.369	1.703	0.3715	1.725
6000	0.4665	2.142	0.4735	2.175
0	0.157	0.469	-	-

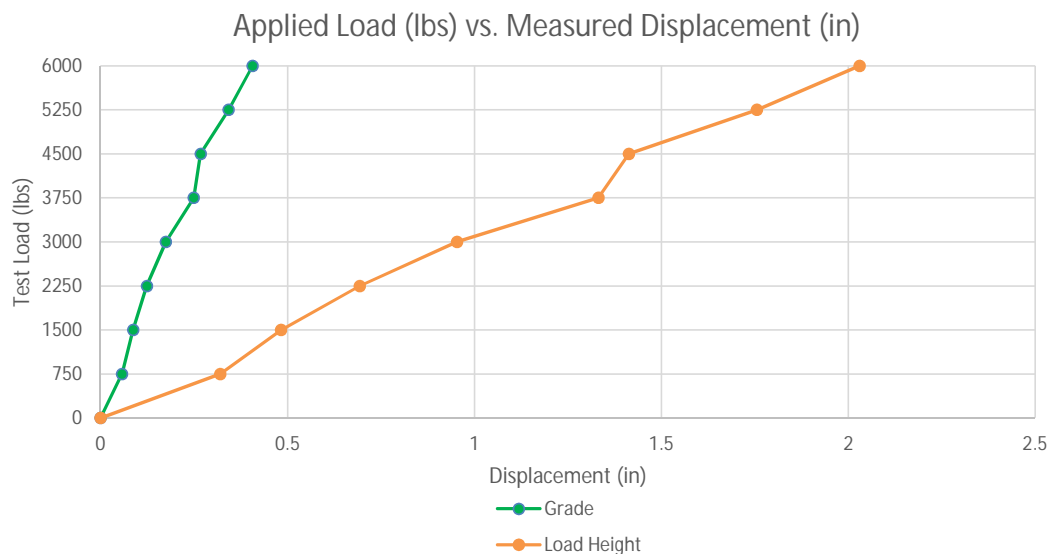


Project:	Lockhart Solar II	Pile ID:	PLT-02-8L
Test Date:	12/16/2020	Pile GPS Location:	35.04909 , -117.34883
Testing Phase:	Design	Pile Install Date:	12/12/2020
Test Weather:	Clear	Pile Drive Time:	92.7 seconds
Technician:	Mikey Spaulding	Pile Type:	W6x9
Load Cell ID:	12095	Pile Length:	13.0 feet
Disp #1 ID:	17B0946	Pile Stick-up:	5.0 feet
Disp #2 ID:	17B0320	Pile Embedment:	8.0 feet
Failure Load*:	5,400 lbs	Load Height:	4.5 feet
Notes:	Displaced 4in at 5400 lbs on attempt to load form C	Load Test Type:	Lateral

*Failure Load is load at which displacement exceeds capacity of gauge (4 in)

Applied Load (lbs) vs. Measured Displacement (in)

Test Load (lbs)	Disp @ 0 min (in)		Disp @ 1 min (in)	
	Grade	Load Height	Grade	Load Height
0	0	0	-	-
750	0.0405	0.2235	0.057	0.32
1500	0.08	0.435	0.0845	0.51
0	0.0055	0.23	-	-
1500	0.079	0.4265	0.0865	0.4825
2250	0.122	0.67	0.1235	0.693
3000	0.1635	0.9	0.166	0.9205
0	0.0185	0.043	-	-
3000	0.1715	0.9265	0.1745	0.9535
3750	0.244	1.275	0.249	1.331
4500	0.2635	1.38	0.2675	1.413
5250	0.335	1.67	0.342	1.7555
6000	0.4035	2	0.4065	2.03
0	0.11	0.3005	-	-



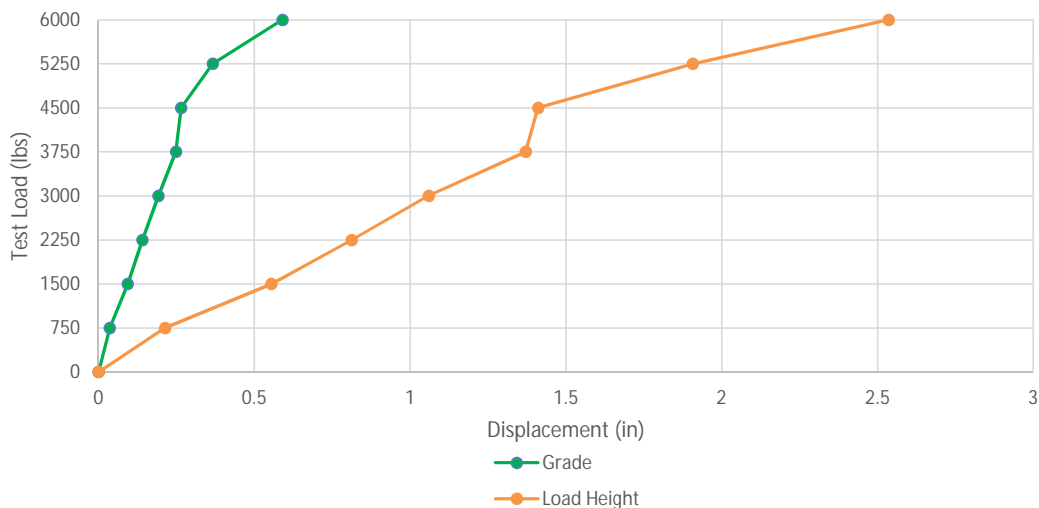
Project:	Lockhart Solar II	Pile ID:	PLT-03-6L
Test Date:	12/16/2020	Pile GPS Location:	35.04914 , -117.34281
Testing Phase:	Design	Pile Install Date:	12/12/2020
Test Weather:	Clear	Pile Drive Time:	40.1 seconds
Technician:	Mikey Spaulding	Pile Type:	W6x9
Load Cell ID:	12095	Pile Length:	11.0 feet
Disp #1 ID:	17B0946	Pile Stick-up:	5.0 feet
Disp #2 ID:	17B0320	Pile Embedment:	6.0 feet
Failure Load*:	6,000 lbs	Load Height:	4.5 feet
Notes:	Displaced 4in at 6000 lbs on attempt to load form C	Load Test Type:	Lateral

*Failure Load is load at which displacement exceeds capacity of gauge (4 in)

Applied Load (lbs) vs. Measured Displacement (in)

Test Load (lbs)	Disp @ 0 min (in)		Disp @ 1 min (in)	
	Grade	Load Height	Grade	Load Height
0	0	0	-	-
750	0.035	0.2045	0.036	0.213
1500	0.082	0.48	0.083	0.495
0	0.0115	0.026	-	-
1500	0.092	0.537	0.0935	0.5545
2250	0.1395	0.797	0.1405	0.812
3000	0.181	1.032	0.185	1.062
0	0.0485	0.122	-	-
3000	0.191	1.0405	0.192	1.059
3750	0.2455	1.34	0.248	1.3705
4500	0.262	1.3905	0.265	1.4105
5250	0.364	1.889	0.366	1.907
6000	0.584	2.287	0.59	2.535
0	0.304	1.105	-	-

Applied Load (lbs) vs. Measured Displacement (in)



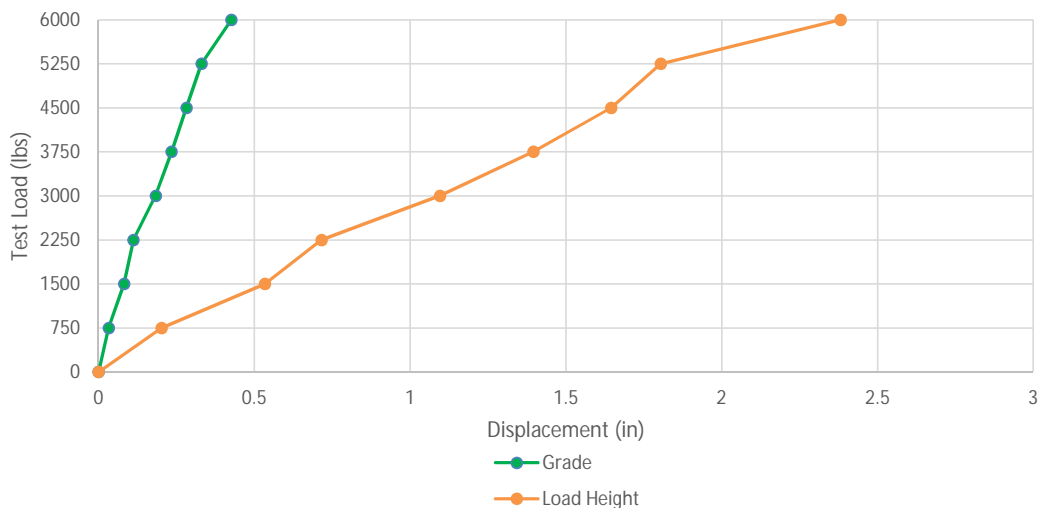
Project:	Lockhart Solar II	Pile ID:	PLT-03-8L
Test Date:	12/17/2020	Pile GPS Location:	35.04914 , -117.34281
Testing Phase:	Design	Pile Install Date:	12/12/2020
Test Weather:	Partly Cloudy	Pile Drive Time:	74.5 seconds
Technician:	Mikey Spaulding	Pile Type:	W6x9
Load Cell ID:	12095	Pile Length:	13.0 feet
Disp #1 ID:	17B0946	Pile Stick-up:	5.0 feet
Disp #2 ID:	17B0320	Pile Embedment:	8.0 feet
Failure Load*:	6,200 lbs	Load Height:	4.5 feet
Notes:	Continuous displacement at 6200lbs	Load Test Type:	Lateral

*Failure Load is load at which displacement exceeds capacity of gauge (4 in)

Applied Load (lbs) vs. Measured Displacement (in)

Test Load (lbs)	Disp @ 0 min (in)		Disp @ 1 min (in)	
	Grade	Load Height	Grade	Load Height
0	0	0	-	-
750	0.031	0.198	0.032	0.202
1500	0.065	0.414	0.065	0.436
0	0.011	0.0225	-	-
1500	0.08	0.5	0.0815	0.5332
2250	0.1105	0.692	0.112	0.715
3000	0.182	1.094	0.183	1.119
0	0.046	0.124	-	-
3000	0.1825	1.066	0.183	1.095
3750	0.233	1.36	0.234	1.395
4500	0.2795	1.604	0.2815	1.645
5250	0.3285	1.802	0.33	1.804
6000	0.422	2.34	0.426	2.381
0	0.17	0.57	-	-

Applied Load (lbs) vs. Measured Displacement (in)



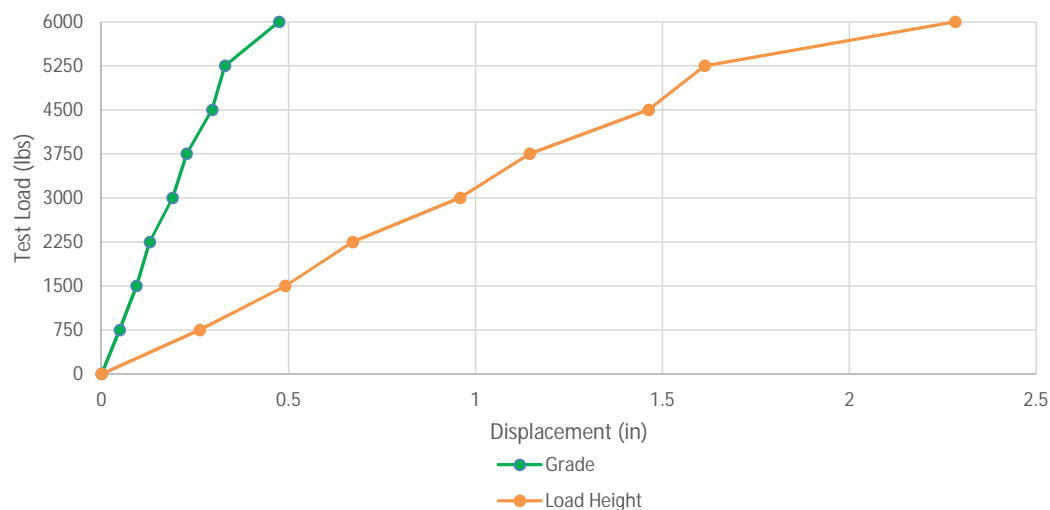
Project:	Lockhart Solar II	Pile ID:	PLT-07-6L
Test Date:	12/16/2020	Pile GPS Location:	35.04581 , -117.34925
Testing Phase:	Design	Pile Install Date:	12/12/2020
Test Weather:	Clear	Pile Drive Time:	67.4 seconds
Technician:	Mikey Spaulding	Pile Type:	W6x9
Load Cell ID:	12095	Pile Length:	11.0 feet
Disp #1 ID:	17B0946	Pile Stick-up:	5.0 feet
Disp #2 ID:	17B0320	Pile Embedment:	6.0 feet
Failure Load*:	6,450 lbs	Load Height:	4.5 feet
Notes:	Continuous displacement of 4in at 6450lbs.	Load Test Type:	Lateral

*Failure Load is load at which displacement exceeds capacity of gauge (4 in)

Applied Load (lbs) vs. Measured Displacement (in)

Test Load (lbs)	Disp @ 0 min (in)		Disp @ 1 min (in)	
	Grade	Load Height	Grade	Load Height
0	0	0	-	-
750	0.0465	0.2545	0.048	0.262
1500	0.091	0.4755	0.092	0.4855
0	0.0105	0.0405	-	-
1500	0.0915	0.488	0.093	0.491
2250	0.125	0.6555	0.1285	0.6715
3000	0.129	0.6565	0.13	0.6635
0	0.022	0.0715	-	-
3000	0.185	0.9225	0.19	0.9587
3750	0.225	1.126	0.2275	1.1445
4500	0.2915	1.4295	0.2955	1.463
5250	0.3275	1.603	0.33	1.613
6000	0.472	2.2685	0.4745	2.2835
0	0.173	0.561	-	-

Applied Load (lbs) vs. Measured Displacement (in)

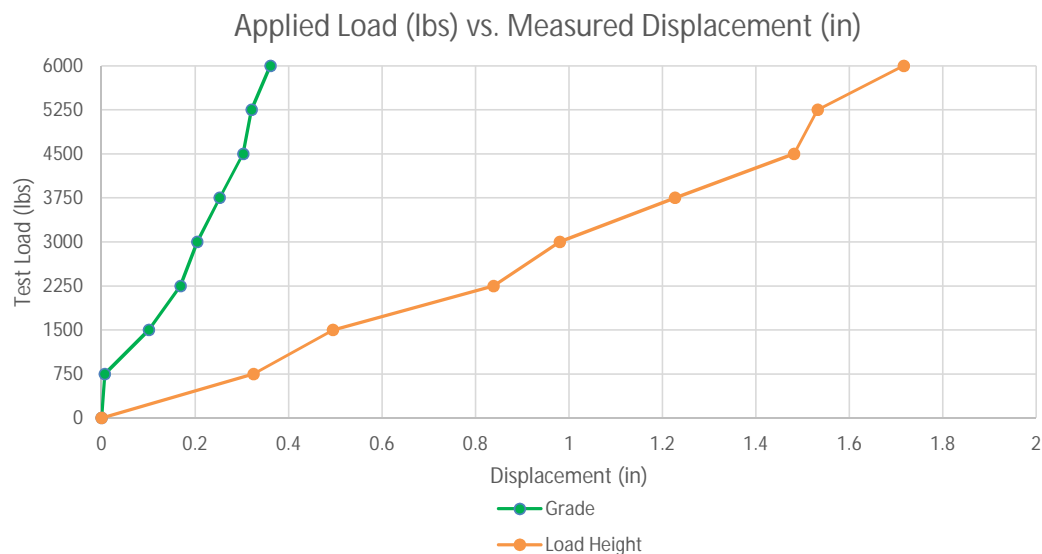


Project:	Lockhart Solar II	Pile ID:	PLT-07-8L
Test Date:	12/16/2020	Pile GPS Location:	35.04581 , -117.34925
Testing Phase:	Design	Pile Install Date:	12/12/2020
Test Weather:	Clear	Pile Drive Time:	87.7 seconds
Technician:	Mikey Spaulding	Pile Type:	W6x9
Load Cell ID:	12095	Pile Length:	13.0 feet
Disp #1 ID:	17B0946	Pile Stick-up:	5.0 feet
Disp #2 ID:	17B0320	Pile Embedment:	8.0 feet
Failure Load*:	6,400 lbs	Load Height:	4.5 feet
Notes:	Continuous displacement of 4in at 6400lbs	Load Test Type:	Lateral

*Failure Load is load at which displacement exceeds capacity of gauge (4 in)

Applied Load (lbs) vs. Measured Displacement (in)

Test Load (lbs)	Disp @ 0 min (in)		Disp @ 1 min (in)	
	Grade	Load Height	Grade	Load Height
0	0	0	-	-
750	0.0064	0.31	0.0066	0.325
1500	0.097	0.478	0.0975	0.4885
0	0.025	0.0635	-	-
1500	0.0995	0.4765	0.101	0.495
2250	0.163	0.7955	0.1685	0.8385
3000	0.197	0.972	0.2	0.9955
0	0.063	0.1485	-	-
3000	0.2025	0.9675	0.2045	0.9805
3750	0.2515	1.195	0.2525	1.227
4500	0.295	1.35	0.303	1.4815
5250	0.3145	1.4755	0.3205	1.532
6000	0.356	1.669	0.361	1.716
0	0.1065	0.23	-	-



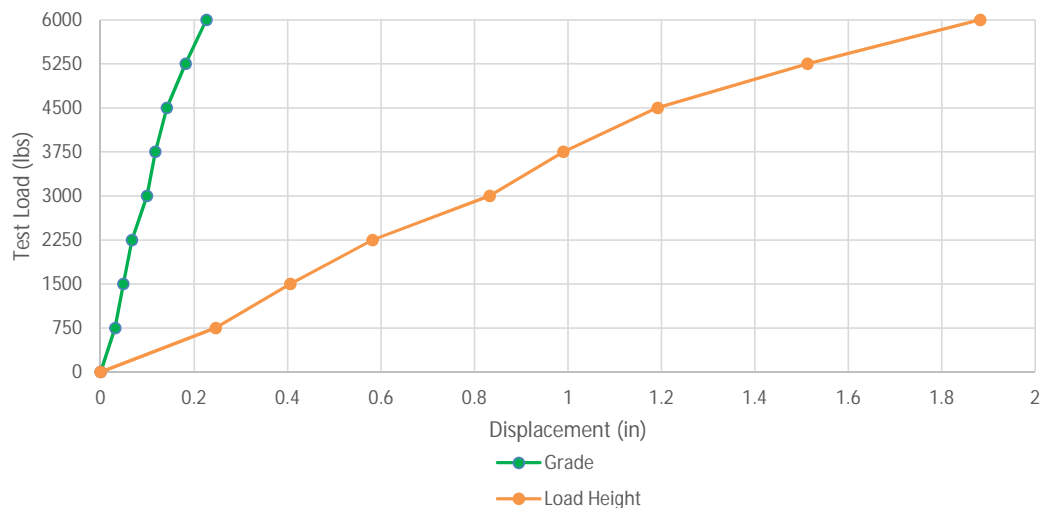
Project:	Lockhart Solar II	Pile ID:	PLT-09-6L
Test Date:	12/17/2020	Pile GPS Location:	35.04354 , -117.34103
Testing Phase:	Design	Pile Install Date:	12/12/2020
Test Weather:	Partly Cloudy	Pile Drive Time:	108.6 seconds
Technician:	Mikey Spaulding	Pile Type:	W6x9
Load Cell ID:	12095	Pile Length:	11.0 feet
Disp #1 ID:	17B0946	Pile Stick-up:	5.0 feet
Disp #2 ID:	17B0320	Pile Embedment:	6.0 feet
Failure Load*:	6,175 lbs	Load Height:	4.5 feet
Notes:	Continuous displacement at 6175lbs	Load Test Type:	Lateral

*Failure Load is load at which displacement exceeds capacity of gauge (4 in)

Applied Load (lbs) vs. Measured Displacement (in)

Test Load (lbs)	Disp @ 0 min (in)		Disp @ 1 min (in)	
	Grade	Load Height	Grade	Load Height
0	0	0	-	-
750	0.0305	0.2415	0.031	0.246
1500	0.0425	0.351	0.043	0.367
0	0.01	0.019	-	-
1500	0.0475	0.3995	0.0485	0.4055
2250	0.067	0.57	0.067	0.582
3000	0.089	0.7576	0.089	0.77
0	0.25	0.0555	-	-
3000	0.099	0.8205	0.099	0.8325
3750	0.1165	0.974	0.117	0.99
4500	0.141	1.175	0.1415	1.1915
5250	0.1815	1.501	0.1815	1.512
6000	0.226	1.882	0.2265	1.882
0	0.097	0.528	-	-

Applied Load (lbs) vs. Measured Displacement (in)



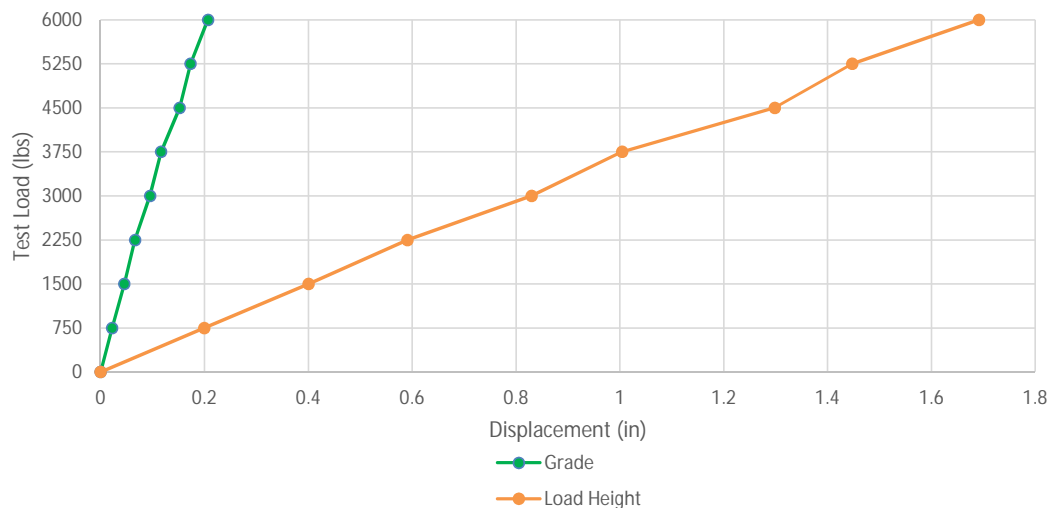
Project:	Lockhart Solar II	Pile ID:	PLT-09-8
Test Date:	12/17/2020	Pile GPS Location:	35.04354 , -117.34103
Testing Phase:	Design	Pile Install Date:	12/12/2020
Test Weather:	Partly Cloudy	Pile Drive Time:	128.9 seconds
Technician:	Mikey Spaulding	Pile Type:	W6x9
Load Cell ID:	12095	Pile Length:	13.0 feet
Disp #1 ID:	17B0946	Pile Stick-up:	5.0 feet
Disp #2 ID:	17B0320	Pile Embedment:	8.0 feet
Failure Load*:	6,300 lbs	Load Height:	4.5 feet
Notes:	Continuous displacement of 4in at 6300	Load Test Type:	Lateral

*Failure Load is load at which displacement exceeds capacity of gauge (4 in)

Applied Load (lbs) vs. Measured Displacement (in)

Test Load (lbs)	Disp @ 0 min (in)		Disp @ 1 min (in)	
	Grade	Load Height	Grade	Load Height
0	0	0	-	-
750	0.02	0.1755	0.022	0.1995
1500	0.0455	0.3995	0.047	0.413
0	0.0008	0.0299	-	-
1500	0.045	0.383	0.0455	0.4
2250	0.0655	0.57	0.066	0.591
3000	0.09	0.783	0.0905	0.8035
0	0.019	0.0605	-	-
3000	0.0945	0.8105	0.095	0.83
3750	0.1155	0.9985	0.1165	1.004
4500	0.1505	1.268	0.152	1.298
5250	0.1725	1.423	0.173	1.447
6000	0.2035	1.643	0.2065	1.6915
0	0.0625	0.299	-	-

Applied Load (lbs) vs. Measured Displacement (in)



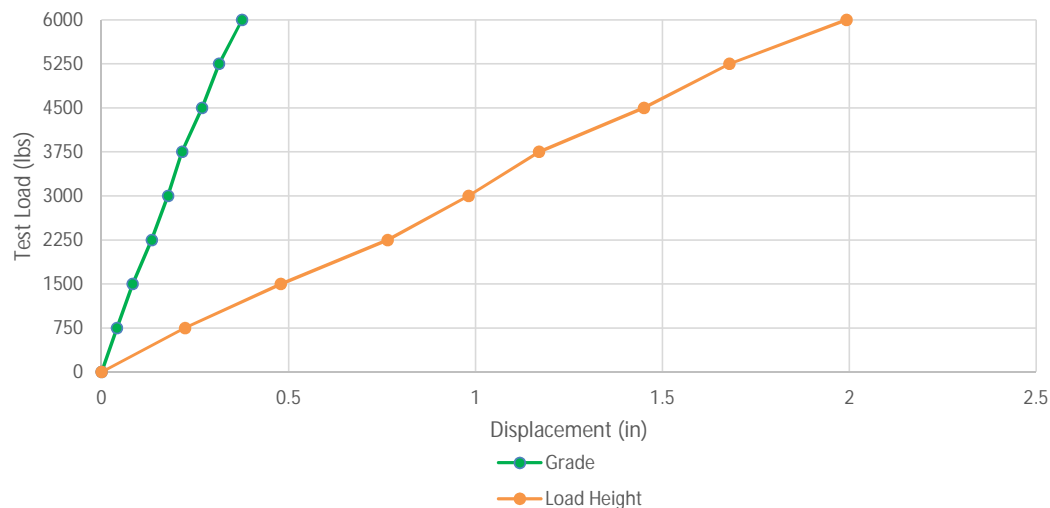
Project:	Lockhart Solar II	Pile ID:	PLT-11-6L
Test Date:	12/16/2020	Pile GPS Location:	35.04365 , -117.35328
Testing Phase:	Design	Pile Install Date:	12/12/2020
Test Weather:	Clear	Pile Drive Time:	58.0 seconds
Technician:	Mikey Spaulding	Pile Type:	W6x9
Load Cell ID:	12095	Pile Length:	11.0 feet
Disp #1 ID:	17B0946	Pile Stick-up:	5.0 feet
Disp #2 ID:	17B0320	Pile Embedment:	6.0 feet
Failure Load*:	6,100 lbs	Load Height:	4.5 feet
Notes:	Continuous displacement of 4in at 6100lbs	Load Test Type:	Lateral

*Failure Load is load at which displacement exceeds capacity of gauge (4 in)

Applied Load (lbs) vs. Measured Displacement (in)

Test Load (lbs)	Disp @ 0 min (in)		Disp @ 1 min (in)	
	Grade	Load Height	Grade	Load Height
0	0	0	-	-
750	0.04	0.2145	0.041	0.223
1500	0.076	0.43	0.0765	0.433
0	0.018	0.063	-	-
1500	0.0084	0.465	0.083	0.479
2250	0.1325	0.7335	0.134	0.765
3000	0.162	0.905	0.162	0.915
0	0.0405	0.094	-	-
3000	0.175	0.953	0.1775	0.9815
3750	0.211	1.165	0.215	1.17
4500	0.265	1.405	0.2685	1.4505
5250	0.307	1.575	0.314	1.679
6000	0.3755	1.985	0.3755	1.9925
0	0.1235	0.392	-	-

Applied Load (lbs) vs. Measured Displacement (in)

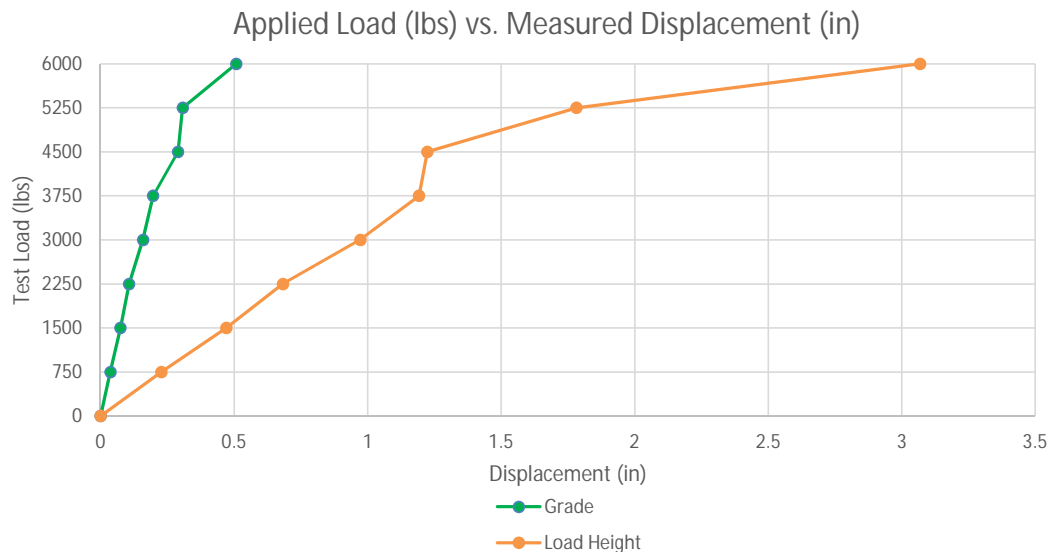


Project:	Lockhart Solar II	Pile ID:	PLT-11-8L
Test Date:	12/16/2020	Pile GPS Location:	35.04365 , -117.35328
Testing Phase:	Design	Pile Install Date:	12/12/2020
Test Weather:	Clear	Pile Drive Time:	125.4 seconds
Technician:	Mikey Spaulding	Pile Type:	W6x9
Load Cell ID:	12095	Pile Length:	13.0 feet
Disp #1 ID:	17B0946	Pile Stick-up:	5.0 feet
Disp #2 ID:	17B0320	Pile Embedment:	8.0 feet
Failure Load*:	6,000 lbs	Load Height:	4.5 feet
Notes:	Displaced 4in at 6000 lbs on attempt to load form C	Load Test Type:	Lateral

*Failure Load is load at which displacement exceeds capacity of gauge (4 in)

Applied Load (lbs) vs. Measured Displacement (in)

Test Load (lbs)	Disp @ 0 min (in)		Disp @ 1 min (in)	
	Grade	Load Height	Grade	Load Height
0	0	0	-	-
750	0.0365	0.224	0.0365	0.2275
1500	0.0715	0.4615	0.0715	0.4695
0	0.0175	0.042	-	-
1500	0.0735	0.454	0.074	0.47
2250	0.105	0.6765	0.1065	0.682
3000	0.1465	0.907	0.1465	0.9375
0	0.0445	0.096	-	-
3000	0.158	0.951	0.1585	0.972
3750	0.195	1.1605	0.196	1.192
4500	0.195	1.156	0.29	1.223
5250	0.303	1.745	0.307	1.7815
6000	0.508	2.689	0.508	3.068
0	0.272	1.345	-	-



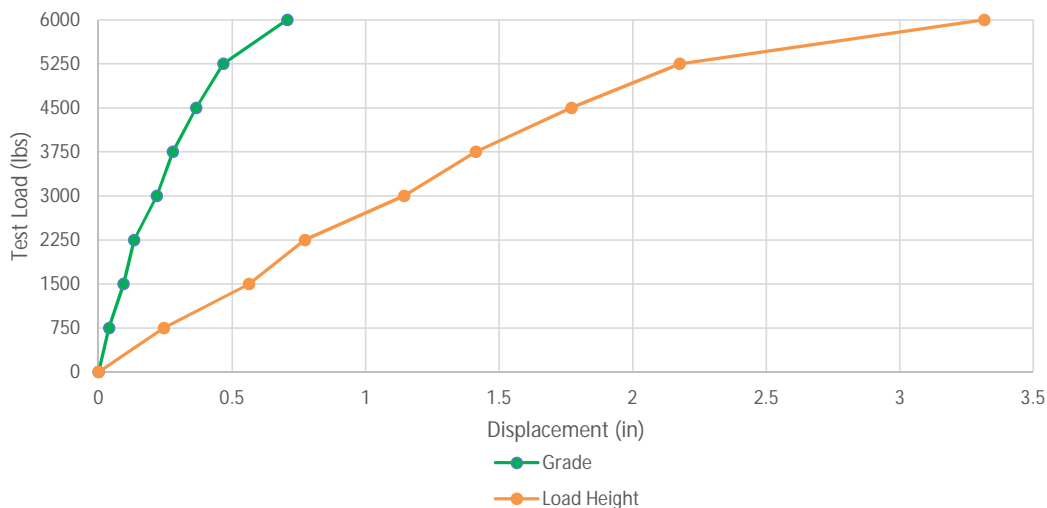
Project:	Lockhart Solar II	Pile ID:	PLT-12-6L
Test Date:	12/16/2020	Pile GPS Location:	35.04176 , -117.34938
Testing Phase:	Design	Pile Install Date:	12/12/2020
Test Weather:	Clear	Pile Drive Time:	35.2 seconds
Technician:	Mikey Spaulding	Pile Type:	W6x9
Load Cell ID:	12095	Pile Length:	11.0 feet
Disp #1 ID:	17B0946	Pile Stick-up:	5.0 feet
Disp #2 ID:	17B0320	Pile Embedment:	6.0 feet
Failure Load*:	5,900 lbs	Load Height:	4.5 feet
Notes:	Displaced 4in at 5900 lbs on attempt to load form C	Load Test Type:	Lateral

*Failure Load is load at which displacement exceeds capacity of gauge (4 in)

Applied Load (lbs) vs. Measured Displacement (in)

Test Load (lbs)	Disp @ 0 min (in)		Disp @ 1 min (in)	
	Grade	Load Height	Grade	Load Height
0	0	0	-	-
750	0.0385	0.2205	0.0385	0.2445
1500	0.0825	0.493	0.0825	0.5025
0	0.0155	0.046	-	-
1500	0.093	0.547	0.0935	0.563
2250	0.133	0.742	0.133	0.772
3000	0.193	1.0595	0.198	1.0785
0	0.068	0.166	-	-
3000	0.218	1.1335	0.218	1.144
3750	0.2765	1.408	0.278	1.412
4500	0.3615	1.7655	0.365	1.7705
5250	0.4535	2.1415	0.4665	2.176
6000	0.705	3.305	0.706	3.3165
0	0.369	1.351	-	-

Applied Load (lbs) vs. Measured Displacement (in)



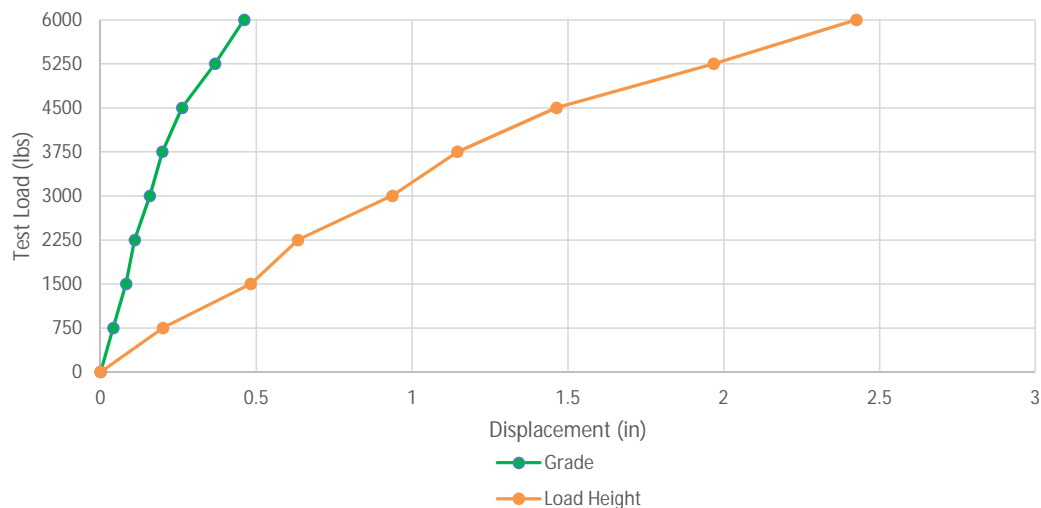
Project:	Lockhart Solar II	Pile ID:	PLT-12-8
Test Date:	12/16/2020	Pile GPS Location:	35.04176 , -117.34938
Testing Phase:	Design	Pile Install Date:	12/12/2020
Test Weather:	Clear	Pile Drive Time:	78.8 seconds
Technician:	Mikey Spaulding	Pile Type:	W6x9
Load Cell ID:	12095	Pile Length:	13.0 feet
Disp #1 ID:	17B0946	Pile Stick-up:	5.0 feet
Disp #2 ID:	17B0320	Pile Embedment:	8.0 feet
Failure Load*:	5,900 lbs	Load Height:	4.5 feet
Notes:	Displaced 4in at 6000 lbs on attempt to load form C	Load Test Type:	Lateral

*Failure Load is load at which displacement exceeds capacity of gauge (4 in)

Applied Load (lbs) vs. Measured Displacement (in)

Test Load (lbs)	Disp @ 0 min (in)		Disp @ 1 min (in)	
	Grade	Load Height	Grade	Load Height
0	0	0	-	-
750	0.038	0.154	0.0405	0.2
1500	0.0745	0.423	0.0765	0.4605
0	0.023	0.036	-	-
1500	0.0077	0.4331	0.0815	0.4815
2250	0.109	0.631	0.109	0.6335
3000	0.111	0.6552	0.112	0.6675
0	0.037	0.0665	-	-
3000	0.157	0.916	0.158	0.936
3750	0.1975	1.12	0.198	1.145
4500	0.259	1.41	0.261	1.463
5250	0.365	1.929	0.367	1.967
6000	0.457	2.385	0.4605	2.426
0	0.204	0.743	-	-

Applied Load (lbs) vs. Measured Displacement (in)



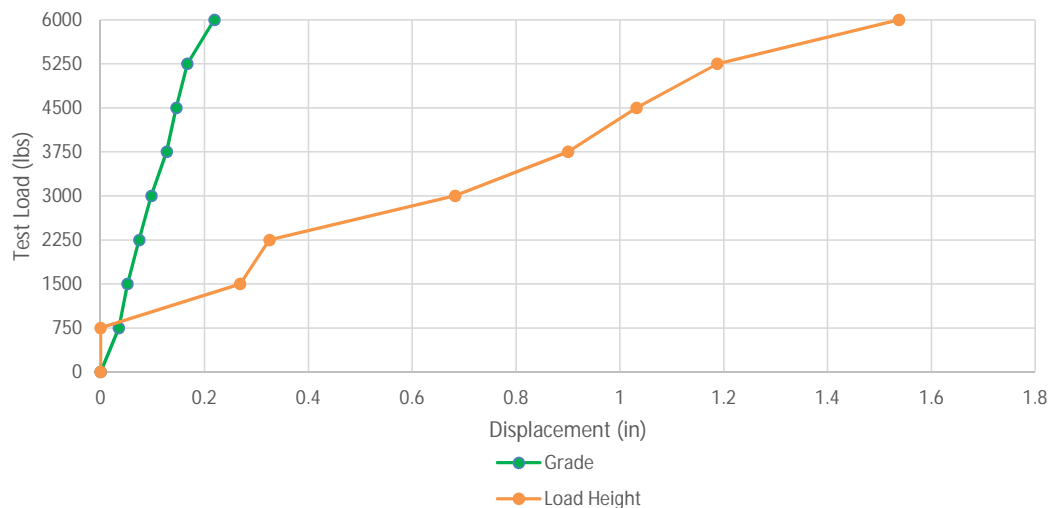
Project:	Lockhart Solar II	Pile ID:	PLT-13-6L
Test Date:	12/17/2020	Pile GPS Location:	35.04065 , -117.34463
Testing Phase:	Design	Pile Install Date:	12/12/2020
Test Weather:	Clear	Pile Drive Time:	114.9 seconds
Technician:	Mikey Spaulding	Pile Type:	W6x9
Load Cell ID:	12095	Pile Length:	11.0 feet
Disp #1 ID:	17B0946	Pile Stick-up:	5.0 feet
Disp #2 ID:	17B0320	Pile Embedment:	6.0 feet
Failure Load*:	6,200 lbs	Load Height:	4.5 feet
Notes:	Continuous displacement at 6200lbs	Load Test Type:	Lateral

*Failure Load is load at which displacement exceeds capacity of gauge (4 in)

Applied Load (lbs) vs. Measured Displacement (in)

Test Load (lbs)	Disp @ 0 min (in)		Disp @ 1 min (in)	
	Grade	Load Height	Grade	Load Height
0	0	0	-	-
750	0.035	0	0.035	0
1500	0.0465	0.0005	0.0465	0.0005
0	0.0035	0.0005	-	-
1500	0.0495	0.225	0.0515	0.2687
2250	0.072	0.304	0.074	0.325
3000	0.089	0.3815	0.091	0.4
0	0.016	0.001	-	-
3000	0.096	0.651	0.0975	0.6825
3750	0.126	0.873	0.127	0.9
4500	0.143	1	0.1455	1.032
5250	0.165	1.158	0.167	1.1875
6000	0.216	1.505	0.219	1.5375
0	0.0765	0.2225	-	-

Applied Load (lbs) vs. Measured Displacement (in)



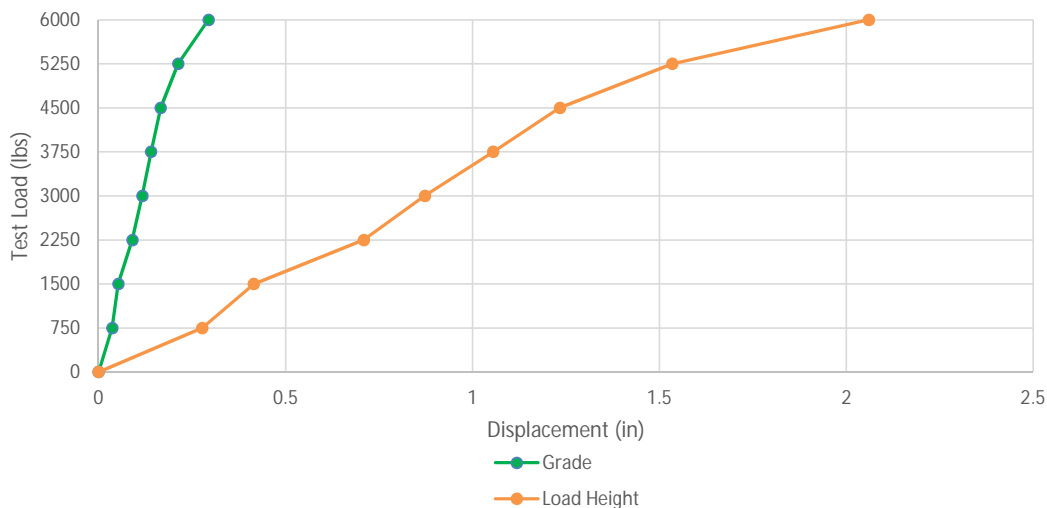
Project:	Lockhart Solar II	Pile ID:	PLT-13-8
Test Date:	12/17/2020	Pile GPS Location:	35.04065 , -117.34463
Testing Phase:	Design	Pile Install Date:	12/12/2020
Test Weather:	Clear	Pile Drive Time:	98.5 seconds
Technician:	Mikey Spaulding	Pile Type:	W6x9
Load Cell ID:	12095	Pile Length:	13.0 feet
Disp #1 ID:	17B0946	Pile Stick-up:	5.0 feet
Disp #2 ID:	17B0320	Pile Embedment:	8.0 feet
Failure Load*:	6,300 lbs	Load Height:	4.5 feet
Notes:	Continuous displacement at 6300lbs	Load Test Type:	Lateral

*Failure Load is load at which displacement exceeds capacity of gauge (4 in)

Applied Load (lbs) vs. Measured Displacement (in)

Test Load (lbs)	Disp @ 0 min (in)		Disp @ 1 min (in)	
	Grade	Load Height	Grade	Load Height
0	0	0	-	-
750	0.0345	0.265	0.036	0.277
1500	0.052	0.4005	0.054	0.4125
0	0.0055	0.01	-	-
1500	0.051	0.3995	0.0525	0.415
2250	0.088	0.6775	0.09	0.709
3000	0.104	0.791	0.107	0.8315
0	0.024	0.045	-	-
3000	0.1145	0.842	0.1165	0.8725
3750	0.139	1.025	0.14	1.055
4500	0.165	1.207	0.166	1.2335
5250	0.2115	1.5085	0.2125	1.534
6000	0.292	2.027	0.294	2.0595
0	0.109	0.5005	-	-

Applied Load (lbs) vs. Measured Displacement (in)



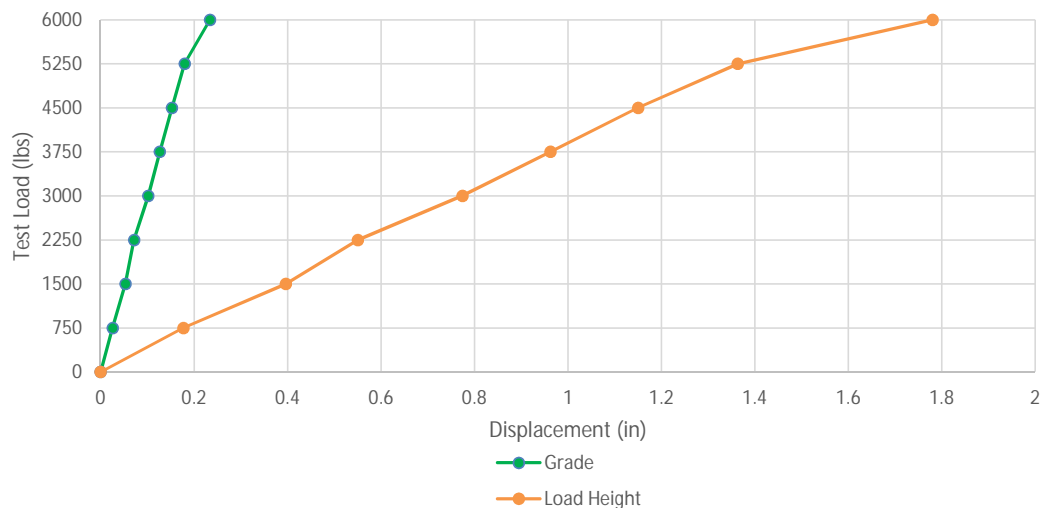
Project:	Lockhart Solar II	Pile ID:	PLT-14-6L
Test Date:	12/16/2020	Pile GPS Location:	35.03919 , -117.35615
Testing Phase:	Design	Pile Install Date:	12/12/2020
Test Weather:	Clear	Pile Drive Time:	47.6 seconds
Technician:	Mikey Spaulding	Pile Type:	W6x9
Load Cell ID:	12095	Pile Length:	11.0 feet
Disp #1 ID:	17B0946	Pile Stick-up:	5.0 feet
Disp #2 ID:	17B0320	Pile Embedment:	6.0 feet
Failure Load*:	6,500 lbs	Load Height:	4.5 feet
Notes:	Continuous displacement at 6500	Load Test Type:	Lateral

*Failure Load is load at which displacement exceeds capacity of gauge (4 in)

Applied Load (lbs) vs. Measured Displacement (in)

Test Load (lbs)	Disp @ 0 min (in)		Disp @ 1 min (in)	
	Grade	Load Height	Grade	Load Height
0	0	0	-	-
750	0.0245	0.167	0.0255	0.177
1500	0.0475	0.35	0.0475	0.3555
0	0.0095	0.0135	-	-
1500	0.0525	0.38	0.053	0.396
2250	0.071	0.532	0.0715	0.5505
3000	0.0975	0.731	0.098	0.757
0	0.0225	0.405	-	-
3000	0.102	0.7615	0.102	0.774
3750	0.126	0.954	0.1265	0.9625
4500	0.149	1.1335	0.1525	1.15
5250	0.177	1.344	0.1795	1.363
6000	0.228	1.7315	0.234	1.78
0	0.085	0.3505	-	-

Applied Load (lbs) vs. Measured Displacement (in)



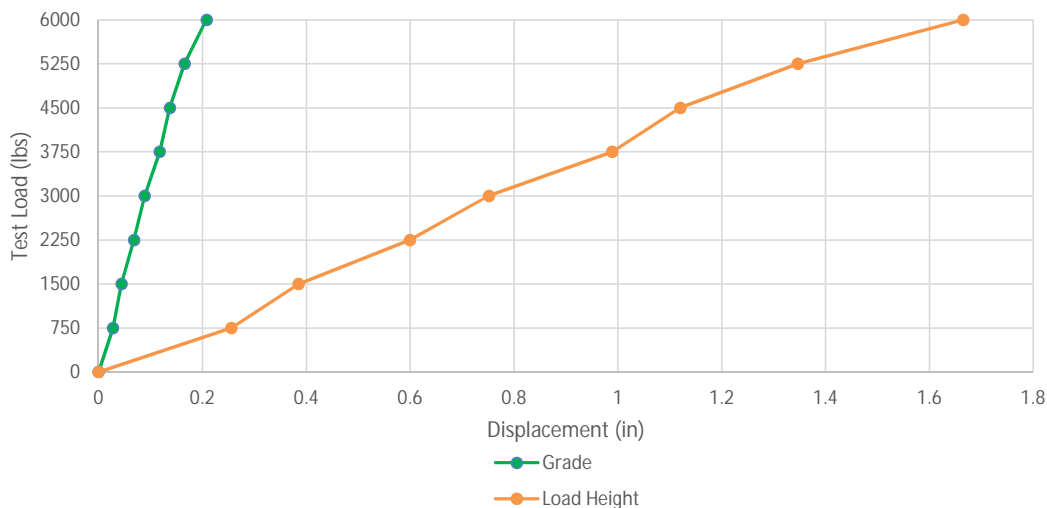
Project:	Lockhart Solar II	Pile ID:	PLT-14-8L
Test Date:	12/16/2020	Pile GPS Location:	35.03919 , -117.35615
Testing Phase:	Design	Pile Install Date:	12/12/2020
Test Weather:	Clear	Pile Drive Time:	77.7 seconds
Technician:	Mikey Spaulding	Pile Type:	W6x9
Load Cell ID:	12095	Pile Length:	13.0 feet
Disp #1 ID:	17B0946	Pile Stick-up:	5.0 feet
Disp #2 ID:	17B0320	Pile Embedment:	8.0 feet
Failure Load*:	6,800 lbs	Load Height:	4.5 feet
Notes:	Continuous failure of 4in at 6800	Load Test Type:	Lateral

*Failure Load is load at which displacement exceeds capacity of gauge (4 in)

Applied Load (lbs) vs. Measured Displacement (in)

Test Load (lbs)	Disp @ 0 min (in)		Disp @ 1 min (in)	
	Grade	Load Height	Grade	Load Height
0	0	0	-	-
750	0.0255	0.2105	0.0275	0.2555
1500	0.041	0.0356	0.0455	0.366
0	0.009	0.0325	-	-
1500	0.0435	0.3705	0.044	0.385
2250	0.068	0.574	0.068	0.5995
3000	0.067	0.556	0.067	0.5705
0	0.0185	0.0565	-	-
3000	0.0088	0.7395	0.0885	0.7515
3750	0.1175	0.972	0.1175	0.989
4500	0.1345	1.117	0.137	1.12
5250	0.165	1.318	0.1655	1.346
6000	0.205	1.654	0.208	1.665
0	0.013	0.056	-	-

Applied Load (lbs) vs. Measured Displacement (in)



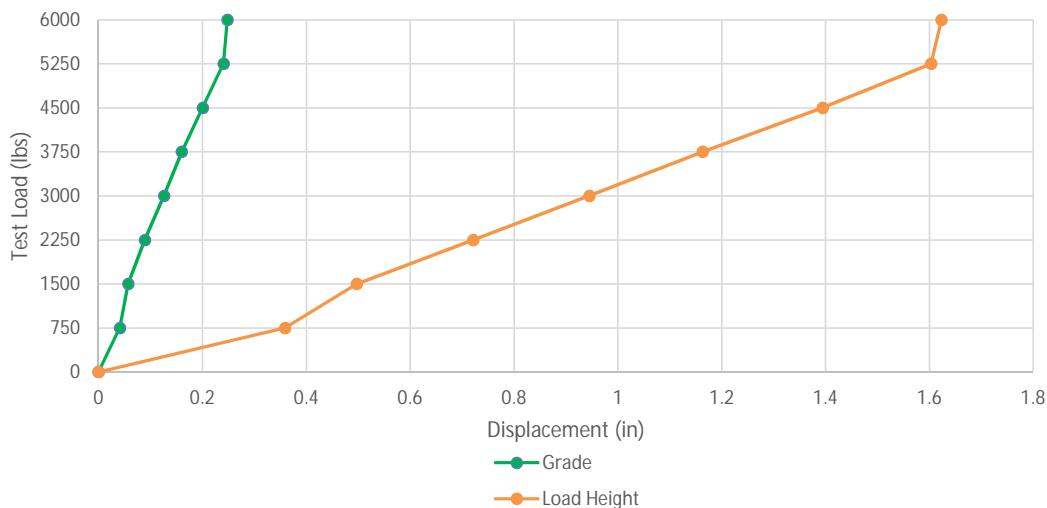
Project:	Lockhart Solar II	Pile ID:	PLT-16-6L
Test Date:	12/17/2020	Pile GPS Location:	35.03811 , -117.35163
Testing Phase:	Design	Pile Install Date:	12/12/2020
Test Weather:	Clear	Pile Drive Time:	35.6 seconds
Technician:	Mikey Spaulding	Pile Type:	W6x9
Load Cell ID:	12095	Pile Length:	11.0 feet
Disp #1 ID:	17B0946	Pile Stick-up:	5.0 feet
Disp #2 ID:	17B0320	Pile Embedment:	6.0 feet
Failure Load*:	6,350 lbs	Load Height:	4.5 feet
Notes:	Continuous 4in of displacement at 6350 lbs.	Load Test Type:	Lateral

*Failure Load is load at which displacement exceeds capacity of gauge (4 in)

Applied Load (lbs) vs. Measured Displacement (in)

Test Load (lbs)	Disp @ 0 min (in)		Disp @ 1 min (in)	
	Grade	Load Height	Grade	Load Height
0	0	0	-	-
750	0.038	0.333	0.041	0.359
1500	0.051	0.44	0.054	0.47
0	0.003	0.089	-	-
1500	0.0545	0.473	0.057	0.497
2250	0.0865	0.6945	0.089	0.7215
3000	0.12	0.9095	0.122	0.9335
0	0.0235	0.1605	-	-
3000	0.124	0.916	0.126	0.945
3750	0.1575	1.1215	0.16	1.163
4500	0.197	1.347	0.2005	1.394
5250	0.238	1.555	0.2405	1.603
6000	0.245	1.59	0.248	1.623
0	0.0695	0.2695	-	-

Applied Load (lbs) vs. Measured Displacement (in)



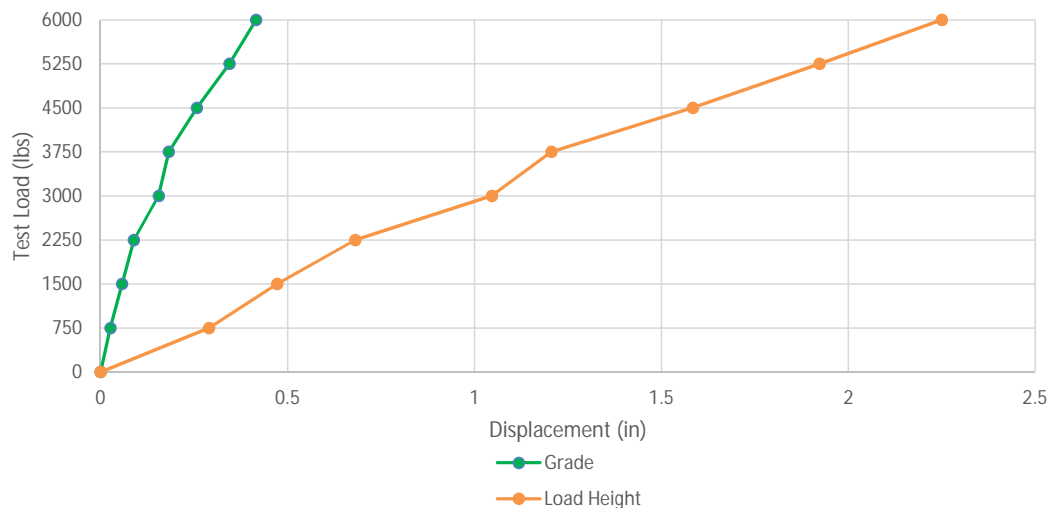
Project:	Lockhart Solar II	Pile ID:	PLT-16-8L
Test Date:	12/17/2020	Pile GPS Location:	35.03811 , -117.35163
Testing Phase:	Design	Pile Install Date:	12/12/2020
Test Weather:	Clear	Pile Drive Time:	63.2 seconds
Technician:	Mikey Spaulding	Pile Type:	W6x9
Load Cell ID:	12095	Pile Length:	13.0 feet
Disp #1 ID:	17B0946	Pile Stick-up:	5.0 feet
Disp #2 ID:	17B0320	Pile Embedment:	8.0 feet
Failure Load*:	6,100 lbs	Load Height:	4.5 feet
Notes:	Continuous displacement of 4in at 6100lbs	Load Test Type:	Lateral

*Failure Load is load at which displacement exceeds capacity of gauge (4 in)

Applied Load (lbs) vs. Measured Displacement (in)

Test Load (lbs)	Disp @ 0 min (in)		Disp @ 1 min (in)	
	Grade	Load Height	Grade	Load Height
0	0	0	-	-
750	0.026	0.2646	0.026	0.29
1500	0.051	0.4225	0.0515	0.438
0	0.01	0.8635	-	-
1500	0.056	0.4695	0.057	0.472
2250	0.089	0.667	0.089	0.681
3000	0.142	0.9875	0.142	0.994
0	0.045	0.146	-	-
3000	0.155	1.035	0.155	1.046
3750	0.182	1.188	0.182	1.2055
4500	0.257	1.562	0.2575	1.5835
5250	0.3445	1.91	0.3445	1.9225
6000	0.416	2.241	0.416	2.25
0	0.1445	0.5035	-	-

Applied Load (lbs) vs. Measured Displacement (in)



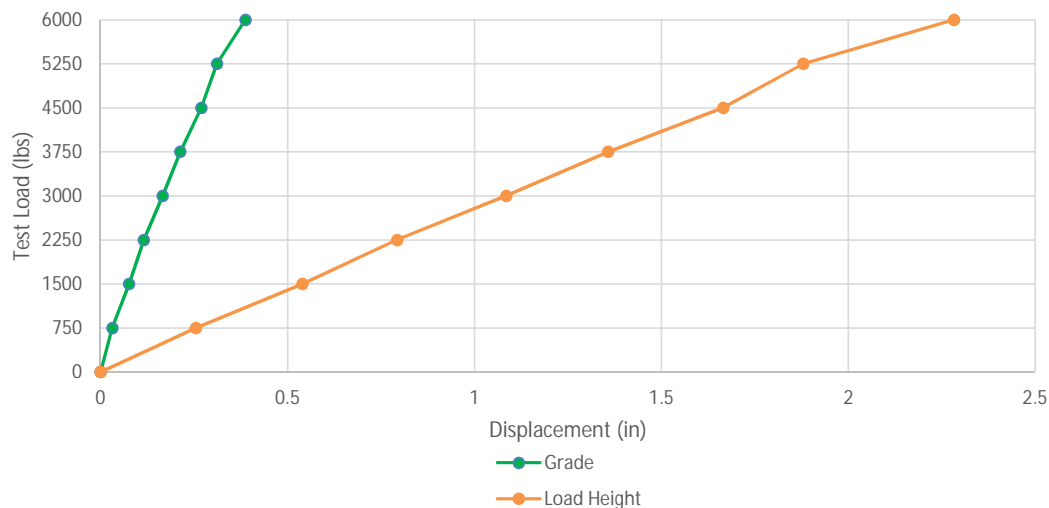
Project:	Lockhart Solar II	Pile ID:	PLT-18-6L
Test Date:	12/17/2020	Pile GPS Location:	35.03886 , -117.34090
Testing Phase:	Design	Pile Install Date:	12/12/2020
Test Weather:	Partly Cloudy	Pile Drive Time:	56.0 seconds
Technician:	Mikey Spaulding	Pile Type:	W6x9
Load Cell ID:	12095	Pile Length:	11.0 feet
Disp #1 ID:	17B0946	Pile Stick-up:	5.0 feet
Disp #2 ID:	17B0320	Pile Embedment:	6.0 feet
Failure Load*:	N/A lbs	Load Height:	4.5 feet
Notes:	4in displacement at 6700lbs	Load Test Type:	Lateral

*Failure Load is load at which displacement exceeds capacity of gauge (4 in)

Applied Load (lbs) vs. Measured Displacement (in)

Test Load (lbs)	Disp @ 0 min (in)		Disp @ 1 min (in)	
	Grade	Load Height	Grade	Load Height
0	0	0	-	-
750	0.03	0.248	0.031	0.2551
1500	0.0785	0.526	0.079	0.543
0	0.0155	0.1045	-	-
1500	0.0755	0.5255	0.076	0.5395
2250	0.1155	0.7895	0.1155	0.793
3000	0.1565	1.023	0.157	1.045
0	0.0048	0.2405	-	-
3000	0.166	1.0715	0.166	1.0845
3750	0.213	1.345	0.213	1.3575
4500	0.268	1.6435	0.2695	1.665
5250	0.3105	1.8655	0.311	1.879
6000	0.386	2.255	0.387	2.282
0	0.118	0.445	-	-

Applied Load (lbs) vs. Measured Displacement (in)



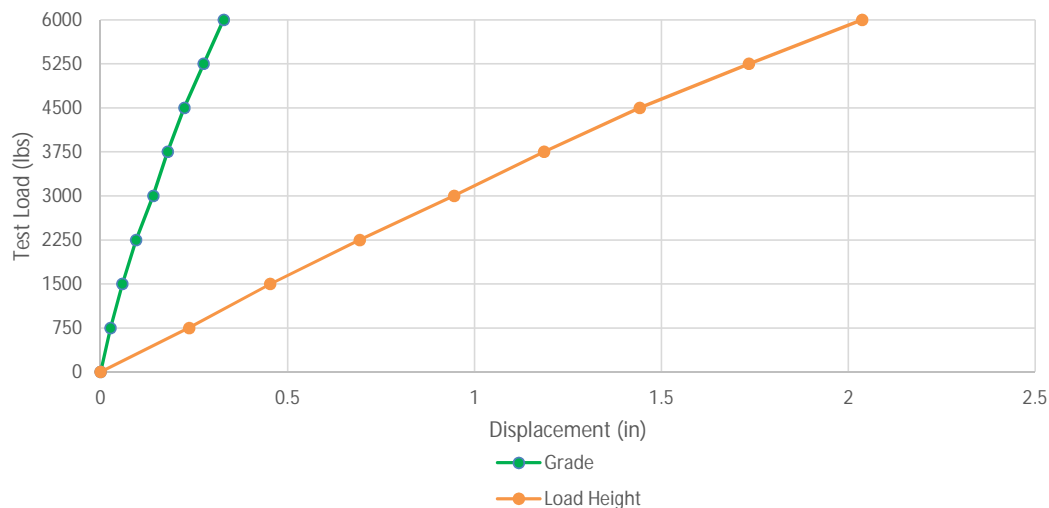
Project:	Lockhart Solar II	Pile ID:	PLT-18-8L
Test Date:	12/17/2020	Pile GPS Location:	35.03886 , -117.34090
Testing Phase:	Design	Pile Install Date:	12/12/2020
Test Weather:	Partly Cloudy	Pile Drive Time:	83.2 seconds
Technician:	Mikey Spaulding	Pile Type:	W6x9
Load Cell ID:	12095	Pile Length:	13.0 feet
Disp #1 ID:	17B0946	Pile Stick-up:	5.0 feet
Disp #2 ID:	17B0320	Pile Embedment:	8.0 feet
Failure Load*:	6,250 lbs	Load Height:	4.5 feet
Notes:	Continuous displacement of 4in at 6250lbs	Load Test Type:	Lateral

*Failure Load is load at which displacement exceeds capacity of gauge (4 in)

Applied Load (lbs) vs. Measured Displacement (in)

Test Load (lbs)	Disp @ 0 min (in)		Disp @ 1 min (in)	
	Grade	Load Height	Grade	Load Height
0	0	0	-	-
750	0.023	0.2065	0.0265	0.2365
1500	0.0585	0.465	0.061	0.475
0	0.0035	0.0295	-	-
1500	0.0555	0.417	0.058	0.4535
2250	0.0935	0.671	0.095	0.693
3000	0.1315	0.9005	0.1335	0.926
0	0.0285	0.0765	-	-
3000	0.139	0.926	0.1405	0.9455
3750	0.1775	1.159	0.179	1.186
4500	0.222	1.413	0.2235	1.442
5250	0.275	1.711	0.2755	1.734
6000	0.3275	2.015	0.329	2.037
0	0.1105	0.3995	-	-

Applied Load (lbs) vs. Measured Displacement (in)

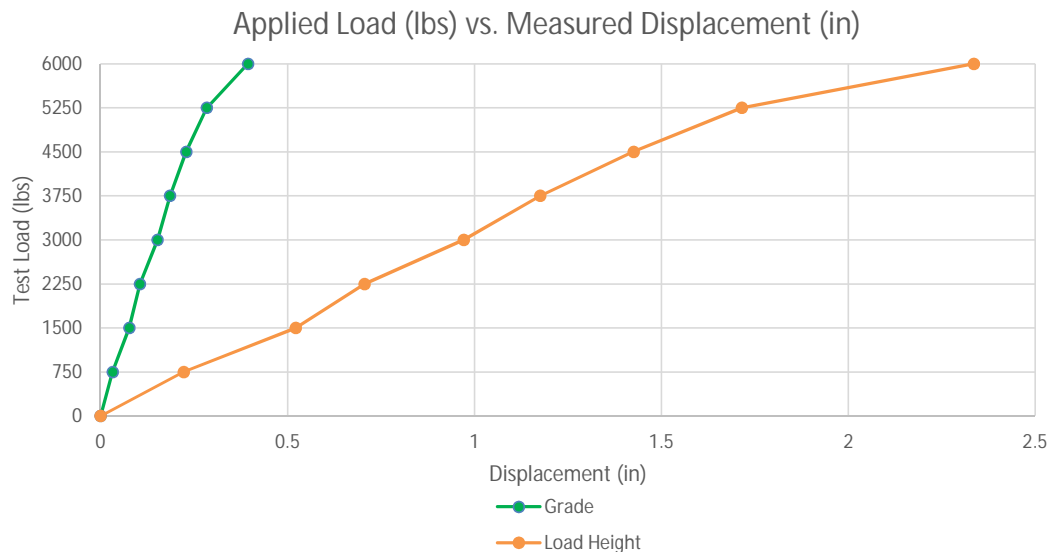


Project:	Lockhart Solar II	Pile ID:	PLT-20-6L
Test Date:	12/12/2020	Pile GPS Location:	35.03794 , -117.33266
Testing Phase:	Design	Pile Install Date:	12/12/2020
Test Weather:	Cloudy	Pile Drive Time:	37.4 seconds
Technician:	Mikey Spaulding	Pile Type:	W6x9
Load Cell ID:	12095	Pile Length:	11.0 feet
Disp #1 ID:	17B0946	Pile Stick-up:	5.0 feet
Disp #2 ID:	17B0320	Pile Embedment:	6.0 feet
Failure Load*:	6,200 lbs	Load Height:	4.5 feet
Notes:	Continuous displacement of 4in at 6200	Load Test Type:	Lateral

*Failure Load is load at which displacement exceeds capacity of gauge (4 in)

Applied Load (lbs) vs. Measured Displacement (in)

Test Load (lbs)	Disp @ 0 min (in)		Disp @ 1 min (in)	
	Grade	Load Height	Grade	Load Height
0	0	0	-	-
750	0.0305	0.203	0.032	0.222
1500	0.065	0.434	0.0685	0.445
0	0.012	0.0505	-	-
1500	0.076	0.5055	0.0765	0.5215
2250	0.105	0.6985	0.105	0.706
3000	0.149	0.9555	0.149	0.9715
0	0.043	0.137	-	-
3000	0.151	0.9695	0.152	0.9715
3750	0.1845	1.156	0.1855	1.176
4500	0.229	1.408	0.229	1.4255
5250	0.284	1.6935	0.284	1.7145
6000	0.393	2.334	0.394	2.335
0	0.135	0.5895	-	-



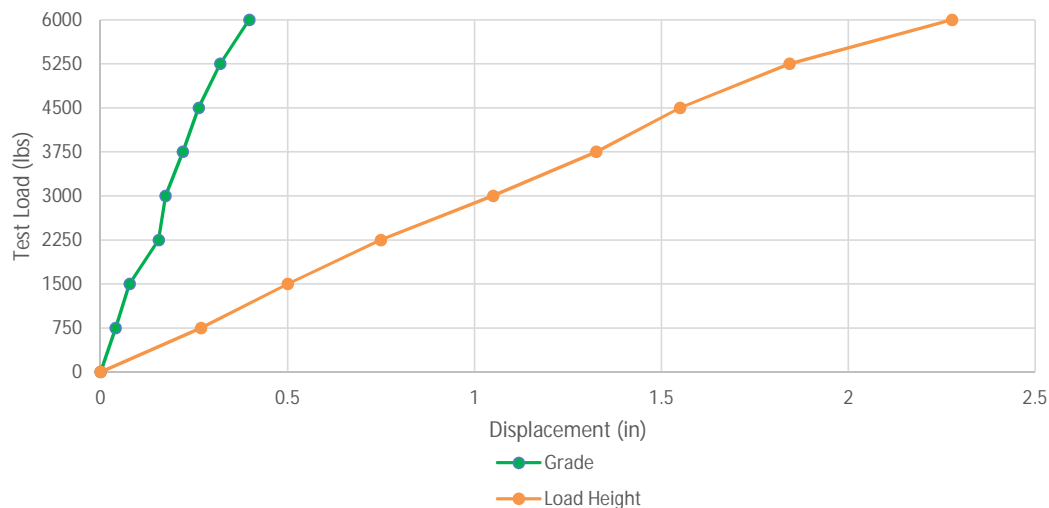
Project:	Lockhart Solar II	Pile ID:	PLT-20-8L
Test Date:	12/17/2020	Pile GPS Location:	35.03794 , -117.33266
Testing Phase:	Design	Pile Install Date:	12/12/2020
Test Weather:	Cloudy	Pile Drive Time:	61.2 seconds
Technician:	Mikey Spaulding	Pile Type:	W6x9
Load Cell ID:	12095	Pile Length:	13.0 feet
Disp #1 ID:	17B0946	Pile Stick-up:	5.0 feet
Disp #2 ID:	17B0320	Pile Embedment:	8.0 feet
Failure Load*:	6,100 lbs	Load Height:	4.5 feet
Notes:	Continuous 4in displacement at 6100lbs	Load Test Type:	Lateral

*Failure Load is load at which displacement exceeds capacity of gauge (4 in)

Applied Load (lbs) vs. Measured Displacement (in)

Test Load (lbs)	Disp @ 0 min (in)		Disp @ 1 min (in)	
	Grade	Load Height	Grade	Load Height
0	0	0	-	-
750	0.037	0.2296	0.04	0.2685
1500	0.0745	0.46	0.0755	0.4935
0	0.022	0.0575	-	-
1500	0.0765	0.485	0.0775	0.5
2250	0.1155	0.724	0.155	0.7495
3000	0.171	1.046	0.172	1.0755
0	0.0565	0.133	-	-
3000	0.172	0.99	0.1735	1.0495
3750	0.22	1.3	0.22	1.3255
4500	0.262	1.535	0.262	1.55
5250	0.32	1.827	0.32	1.842
6000	0.3965	2.251	0.3975	2.277
0	0.131	0.454	-	-

Applied Load (lbs) vs. Measured Displacement (in)



Appendix 6

Axial Compression Pile Load Testing Data

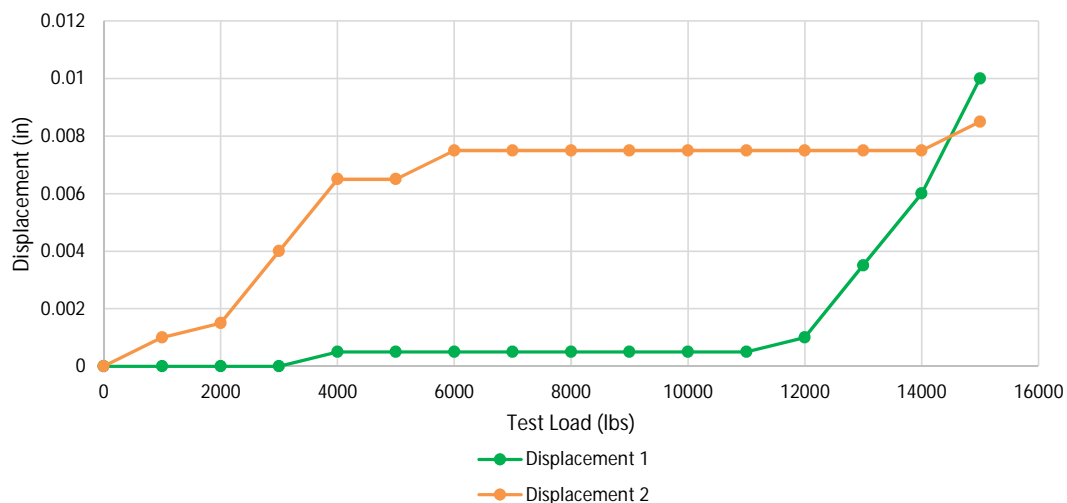
Project:	Lockhart Solar II	Pile ID:	PLT-01-6C
Test Date:	12/16/2020	Pile GPS Location:	35.04873 , -117.35649
Testing Phase:	Design	Pile Install Date:	12/12/2020
Test Weather:	Clear	Pile Drive Time:	31.1 seconds
Technician:	Mikey Spaulding	Pile Type:	W6x9
Load ID:	WW-PRESS10KPNEU	Pile Length:	11.0 feet
Disp #1 ID:	17B0946	Pile Stick-up:	5.0 feet
Disp #2 ID:	17B0320	Pile Embedment:	6.0 feet
CD* Load:	N/A	Load Height:	5.0 feet
Notes:		Load Test Type:	Compression

*Continuous displacement defined as continuous movement under a certain load until pile exceeds 1 inch of displacement.

Applied Load (lbs) vs. Measured Displacement (in)

Test Load (lbs)	Disp @ 0 min (in)		Disp @ 1 min (in)	
	Disp #1	Disp #2	Disp #1	Disp #2
0	0	0	0	0
1000	0	0.001	0	0.001
2000	0	0.0015	0	0.0015
3000	0	0.0035	0	0.004
4000	0	0.006	0.0005	0.0065
5000	0.0005	0.0065	0.0005	0.0065
6000	0.0005	0.0075	0.0005	0.0075
7000	0.0005	0.0075	0.0005	0.0075
8000	0.0005	0.0075	0.0005	0.0075
9000	0.0005	0.0075	0.0005	0.0075
10000	0.0005	0.0075	0.0005	0.0075
11000	0.0005	0.0075	0.0005	0.0075
12000	0.001	0.0075	0.001	0.0075
13000	0.003	0.0075	0.0035	0.0075
14000	0.006	0.0075	0.006	0.0075
15000	0.01	0.008	0.01	0.0085

Applied Load (lbs) vs. Measured Displacement (in)



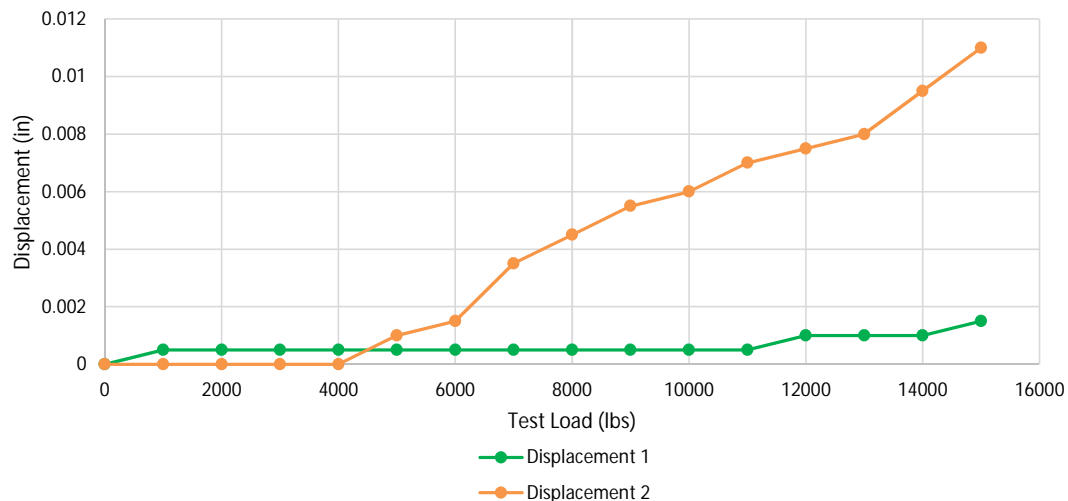
Project:	Lockhart Solar II	Pile ID:	PLT-03-6C
Test Date:	12/17/2020	Pile GPS Location:	35.04914 , -117.34281
Testing Phase:	Design	Pile Install Date:	12/12/2020
Test Weather:	Clear	Pile Drive Time:	59.5 seconds
Technician:	Mikey Spaulding	Pile Type:	W6x9
Load ID:	WW-PRESS10KPNEU	Pile Length:	11.0 feet
Disp #1 ID:	17B0946	Pile Stick-up:	5.0 feet
Disp #2 ID:	17B0320	Pile Embedment:	6.0 feet
CD* Load:	N/A	Load Height:	5.0 feet
Notes:		Load Test Type:	Compression

*Continuous displacement defined as continuous movement under a certain load until pile exceeds 1 inch of displacement.

Applied Load (lbs) vs. Measured Displacement (in)

Test Load (lbs)	Disp @ 0 min (in)		Disp @ 1 min (in)	
	Disp #1	Disp #2	Disp #1	Disp #2
0	0	0	0	0
1000	0.0005	0	0.0005	0
2000	0.0005	0	0.0005	0
3000	0.001	0	0.0005	0
4000	0.001	0	0.0005	0
5000	0.0005	0.001	0.0005	0.001
6000	0.0005	0.0015	0.0005	0.0015
7000	0.0005	0.0035	0.0005	0.0035
8000	0.0005	0.0035	0.0005	0.0045
9000	0.0005	0.005	0.0005	0.0055
10000	0.0005	0.006	0.0005	0.006
11000	0.0005	0.0065	0.0005	0.007
12000	0.0005	0.0075	0.001	0.0075
13000	0.001	0.008	0.001	0.008
14000	0.001	0.0095	0.001	0.0095
15000	0.0015	0.011	0.0015	0.011

Applied Load (lbs) vs. Measured Displacement (in)



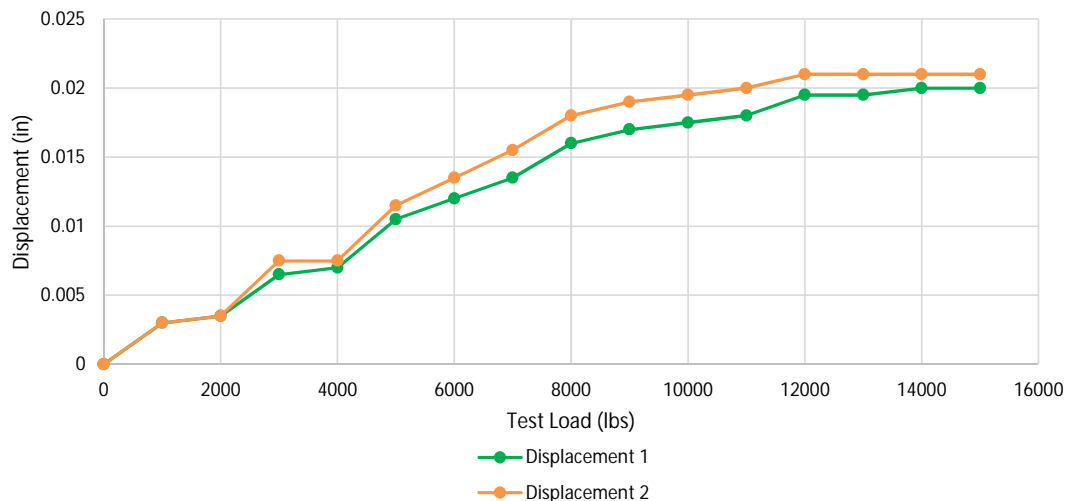
Project:	Lockhart Solar II	Pile ID:	PLT-12-6C
Test Date:	12/16/2020	Pile GPS Location:	35.04176 , -117.34938
Testing Phase:	Design	Pile Install Date:	12/12/2020
Test Weather:	Clear	Pile Drive Time:	30.2 seconds
Technician:	Mikey Spaulding	Pile Type:	W6x9
Load ID:	WW-PRESS10KPNEU	Pile Length:	11.0 feet
Disp #1 ID:	17B0946	Pile Stick-up:	5.0 feet
Disp #2 ID:	17B0320	Pile Embedment:	6.0 feet
CD* Load:	N/A	Load Height:	5.0 feet
Notes:		Load Test Type:	Compression

*Continuous displacement defined as continuous movement under a certain load until pile exceeds 1 inch of displacement.

Applied Load (lbs) vs. Measured Displacement (in)

Test Load (lbs)	Disp @ 0 min (in)		Disp @ 1 min (in)	
	Disp #1	Disp #2	Disp #1	Disp #2
0	0	0	0	0
1000	0.003	0.003	0.003	0.003
2000	0.0035	0.0025	0.0035	0.0035
3000	0.0065	0.0075	0.0065	0.0075
4000	0.007	0.0075	0.007	0.0075
5000	0.0105	0.0115	0.0105	0.0115
6000	0.012	0.0135	0.012	0.0135
7000	0.0135	0.0155	0.0135	0.0155
8000	0.016	0.018	0.016	0.018
9000	0.017	0.019	0.017	0.019
10000	0.0175	0.0195	0.0175	0.0195
11000	0.018	0.02	0.018	0.02
12000	0.0195	0.021	0.0195	0.021
13000	0.019	0.021	0.0195	0.021
14000	0.02	0.021	0.02	0.021
15000	0.02	0.021	0.02	0.021

Applied Load (lbs) vs. Measured Displacement (in)



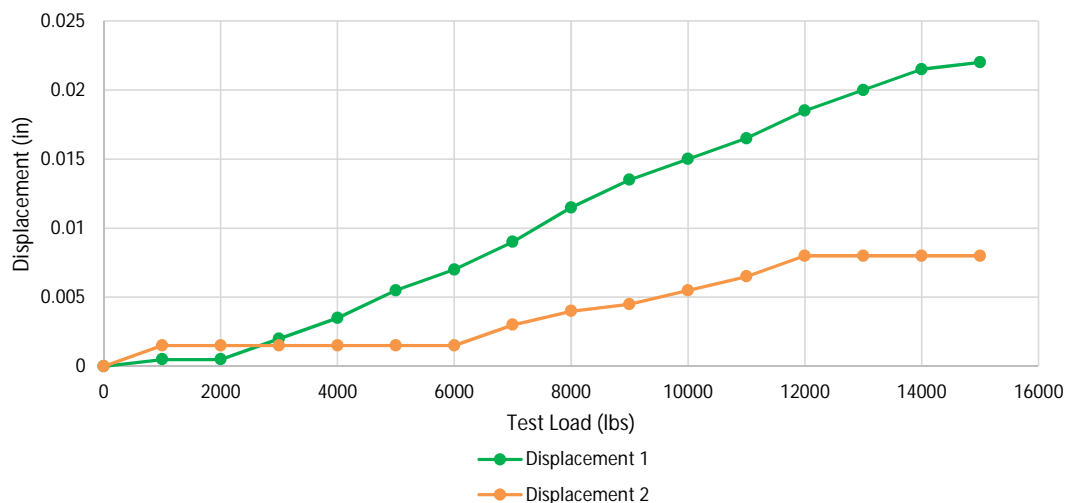
Project:	Lockhart Solar II	Pile ID:	PLT-20-6C
Test Date:	12/17/2020	Pile GPS Location:	35.03794 , -117.33266
Testing Phase:	Design	Pile Install Date:	12/12/2020
Test Weather:	Cloudy	Pile Drive Time:	62.4 seconds
Technician:	Mikey Spaulding	Pile Type:	W6x9
Load ID:	WW-PRESS10KPNEU	Pile Length:	11.0 feet
Disp #1 ID:	17B0946	Pile Stick-up:	5.0 feet
Disp #2 ID:	17B0320	Pile Embedment:	6.0 feet
CD* Load:	N/A	Load Height:	5.0 feet
Notes:		Load Test Type:	Compression

*Continuous displacement defined as continuous movement under a certain load until pile exceeds 1 inch of displacement.

Applied Load (lbs) vs. Measured Displacement (in)

Test Load (lbs)	Disp @ 0 min (in)		Disp @ 1 min (in)	
	Disp #1	Disp #2	Disp #1	Disp #2
0	0	0	0	0
1000	0.0005	0.0015	0.0005	0.0015
2000	0.0005	0.0015	0.0005	0.0015
3000	0.001	0.0015	0.002	0.0015
4000	0.003	0.0015	0.0035	0.0015
5000	0.0055	0.0015	0.0055	0.0015
6000	0.007	0.0015	0.007	0.0015
7000	0.009	0.0025	0.009	0.003
8000	0.0115	0.004	0.0115	0.004
9000	0.013	0.0045	0.0135	0.0045
10000	0.015	0.0055	0.015	0.0055
11000	0.0165	0.006	0.0165	0.0065
12000	0.018	0.0075	0.0185	0.008
13000	0.02	0.008	0.02	0.008
14000	0.021	0.008	0.0215	0.008
15000	0.022	0.008	0.022	0.008

Applied Load (lbs) vs. Measured Displacement (in)



Appendix 7

Pile and Testing Equipment Calibrations



ACCREDITED CALIBRATION LABORATORY

Martin Calibration*"Your Partner in Quality"***Certificate of Calibration**

Certificate #: 2510959

Calibration Performed By:
MARTIN CALIBRATION, INC.
 11965 12TH AVENUE SOUTH
 BURNSVILLE, MN 55337

For:
WESTWOOD PROFESSIONAL SERVICES
 12701 WHITEWATER DRIVE, SUITE 300
 EDEN PRAIRIE, MN 55334



Serial Number: 17B0320
 Description: INDICATOR, DIGITAL
 Manufacturer: IGAGING
 Model: 35-955-99
 Size: 0-4 INCH
 Temp./RH: 68 F / 33 %

Gage I.D.: 17B0320
 Performed By: THUY HOANG
 Procedure: SCP-150-0006
 Cal Date: 06 Aug 2020
 Due Date: 06 Aug 2021

Actual Measured Values Found to Be:
WITHIN NOMINAL TOLERANCE

Comments:

Test Points

Description	UUT Reading	Tolerance -	Tolerance +	As Found	Final	Unit
Linearity	0.0000	-0.0010	0.0010	0.0000	0.0000	in
	0.1000	0.0990	0.1010	0.1000	0.1000	in
	0.2500	0.2490	0.2510	0.2500	0.2500	in
	0.5000	0.4990	0.5010	0.5000	0.5000	in
	0.7500	0.7490	0.7510	0.7500	0.7500	in
	1.0000	0.9990	1.0010	1.0000	1.0000	in
	2.0000	1.9990	2.0010	2.0005	2.0005	in
	3.0000	2.9990	3.0010	3.0005	3.0005	in
	4.0000	3.9990	4.0010	4.0005	4.0005	in

Decision Rule applied: Simple Acceptance; statements of compliance to specifications do not consider measurement uncertainty.

Standards Used To Calibrate Equipment:

Serial Number	Gage ID	Manufacturer	Model	Last Calibration	Due for Calibration
350635	MI-150-507	MITUTOYO	0	30 Sep 2019	30 Sep 2020
708022	MI-150-555	MITUTOYO	7004	04 Aug 2020	31 Aug 2021

Uncertainty in measurement: (5 + 8L) μ in

REFERENCE: ANSI/ASME B89.1.10(M)

NOTE: Verified hysteresis & repeatability in accordance with ANSI/ASME B89.1.10(M)

The above instrument was calibrated by standards traceable to the International System of Units (SI) through the National Institute of Standards & Technology (NIST) or other National Measurement Institute (NMI) per the guidelines specified in the latest revisions of ANSI/NCSL Z540-1 and ISO/IEC 17025. All measurement uncertainties calculated at a 95% Confidence Level ($k=2$). All test points have a Test Uncertainty Ratio (TUR) of 4:1 or better unless otherwise noted. The results indicated on this certificate relate only to the items calibrated. This certificate shall not be reproduced, except in full, without the written approval of Martin Calibration. Martin Calibration's responsibility shall in no event, nor for any cause whatsoever, exceed the purchase price of this certificate.

Quality Assurance Representative:

Mai Vang





Motionics LLC
Certificate of Calibration

Motionics LLC
8500 Shoal Creek Blvd
Bldg 4 Suite 209 Austin TX
info@motionics.com

Date: 8/7/20

Certificate Number: 1387

Calibrated for:

Westwood
12701 Whitewater Drive
Minnetonka MN 55343
United States

Device ID (S/N) 0946
Gage Type: 4" Digital Dial Indicator
Manufacturere: Motionics LLC
Model No. D402
Size: 0-4 inch
Temp/RH: 70.0F/45.0%
Location: Austin TX USA

Work Order #: 94372256
Purchase Order #: 94372256
Serial Number: 17B0946
Department: N/A
Performed By: MN
Received Condition: In Tolerance
Returned Condition: In Tolerance
Cal. Date: 8/7/20
Cal Interval: 12 months
Cal. Due Date: 8/7/21

Calibration Notes:

Test Points

Seq	Description	Standard	Tolerance-	Tolerance+	As Found	As Left	UOP	Result
1	Length	0.5000	0.4990	0.5010	0.5005	0.5005	in	PASS
2	Length	1.0000	0.9990	1.0010	1.0005	1.0005	in	PASS
3	Length	1.5000	1.4990	1.5010	1.5005	1.5005	in	PASS
4	Length	2.0000	1.9990	2.0010	2.0010	2.0010	in	PASS
5	Length	2.5000	2.4990	2.5010	2.5005	2.5005	in	PASS
6	Length	3.0000	2.9990	3.0010	3.0010	3.0010	in	PASS
7	Length	3.5000	3.4990	3.5010	3.5005	3.5005	in	PASS
8	Length	4.0000	3.9990	4.0010	4.0010	4.0010	in	PASS

Standard Used to Calibrate:

ID	Description	Model	Serial	Manufacturer	Traceability #
21401.2	Gage Block Set 36	53-670-038	17612	Fowler	683/289879-17

Procedures Used in this Event:

Procedure Name
MCP201-GB

Description
Digital Dial Indicator Cal. Process, Jan-5-2020

QC Approval:

MSL OILFIELD SERVICES LTD

B8, Millbrook Close, Chandlers Ford, Hants SO53 4BZ U.K.

Tel: 023 8027 5100 Fax: 023 8027 5200 Web: www.msluk.net E-Mail: cal@msluk.net

CALIBRATION CERTIFICATE

Certificate No: 19073/33/20 Date: 10th August 2020
Serial No: 12095 Type: Telemetry Tensile
Link Load Cell
Calibration Value: N/A Calibration Code: N/A

Load Applied (Tonnes)	Reading 1 (Tonnes)	Reading 2 (Tonnes)	
0	0.000	0.000	
2.4	2.396	2.397	
4.8	4.804	4.802	
7.2	7.198	7.198	
9.6	9.599	9.604	
12.0	12.011	12.017	

WORKING LOAD LIMIT: 12 Tonnes
PROOF LOAD: 24 Tonnes
ULTIMATE LOAD: 7 Times Safe Working Load
ACCURACY: Better than $\pm 1\%$ of Actual Reading
CALIBRATED TO: Tension: BS EN ISO 7500:1 2004
Traceable to National Physical
Laboratories
Equivalent to ASTM-E4
MACHINE TYPE: Denison T42B3 – Serial No. 24817

10th August 2020

Date

G Cross
For and on behalf of
MSL OILFIELD SERVICES LTD



ACCREDITED CALIBRATION LABORATORY

Martin Calibration

"Your Partner in Quality"

Certificate of Calibration

Certificate #: 2583976



Calibration Performed By:
 MARTIN CALIBRATION, INC.
 11965 12TH AVENUE SOUTH
 BURNSVILLE, MN 55337

For:
 WESTWOOD PROFESSIONAL SERVICES
 12701 WHITEWATER DRIVE, SUITE 300
 EDEN PRAIRIE, MN 55334

Serial Number: WW-PRESS-10KPNEU
 Description: PRESSURE GAUGE
 Manufacturer: ENERPAC
 Model: G4039L
 Temp./RH: 69 F / 31 %

Gage I.D.: WW-PRESS-10KPNEU
 Performed By: BRIAN BYRD
 Procedure: SCP-130-0001
 Cal Date: 17 Nov 2020
 Due Date: 17 Nov 2021

Actual Measured Values Found To Be:
WITHIN NOMINAL TOLERANCE

Comments:

Test Points

Description	Nominal	Tolerance -	Tolerance +	As Found	Final	Unit
Pressure Increasing	2000	1900	2100	2011	2011	psi
	4000	3900	4100	4027	4027	psi
	6000	5900	6100	5993	5993	psi
	8000	7900	8100	7949	7949	psi
	10000	9900	10100	9968	9968	psi
Pressure Decreasing	8000	7900	8100	7916	7916	psi
	6000	5900	6100	5923	5923	psi
	4000	3900	4100	3920	3920	psi
	2000	1900	2100	1913	1913	psi

Decision Rule applied: Simple Acceptance; statements of compliance to specifications do not consider measurement uncertainty.

Standards Used To Calibrate Equipment:

Serial Number	Gage ID	Manufacturer	Model	Last Calibration	Due for Calibration
4334423	MI-130-062	DRUCK	PACE1000	02 May 2019	30 Nov 2020

The above instrument was calibrated by standards traceable to the International System of Units (SI) through the National Institute of Standards & Technology (NIST) or other National Measurement Institute (NMI) per the guidelines specified in the latest revisions of ANSI/NCSL Z540-1 and ISO/IEC 17025. All measurement uncertainties calculated at a 95% Confidence Level (k=2). All test points have a Test Uncertainty Ratio (TUR) of 4:1 or better unless otherwise noted. The results indicated on this certificate relate only to the items calibrated. This certificate shall not be reproduced, except in full, without the written approval of Martin Calibration. Martin Calibration's responsibility shall in no event, nor for any cause whatsoever, exceed the purchase price of this certificate. ⁵

Quality Assurance Representative:

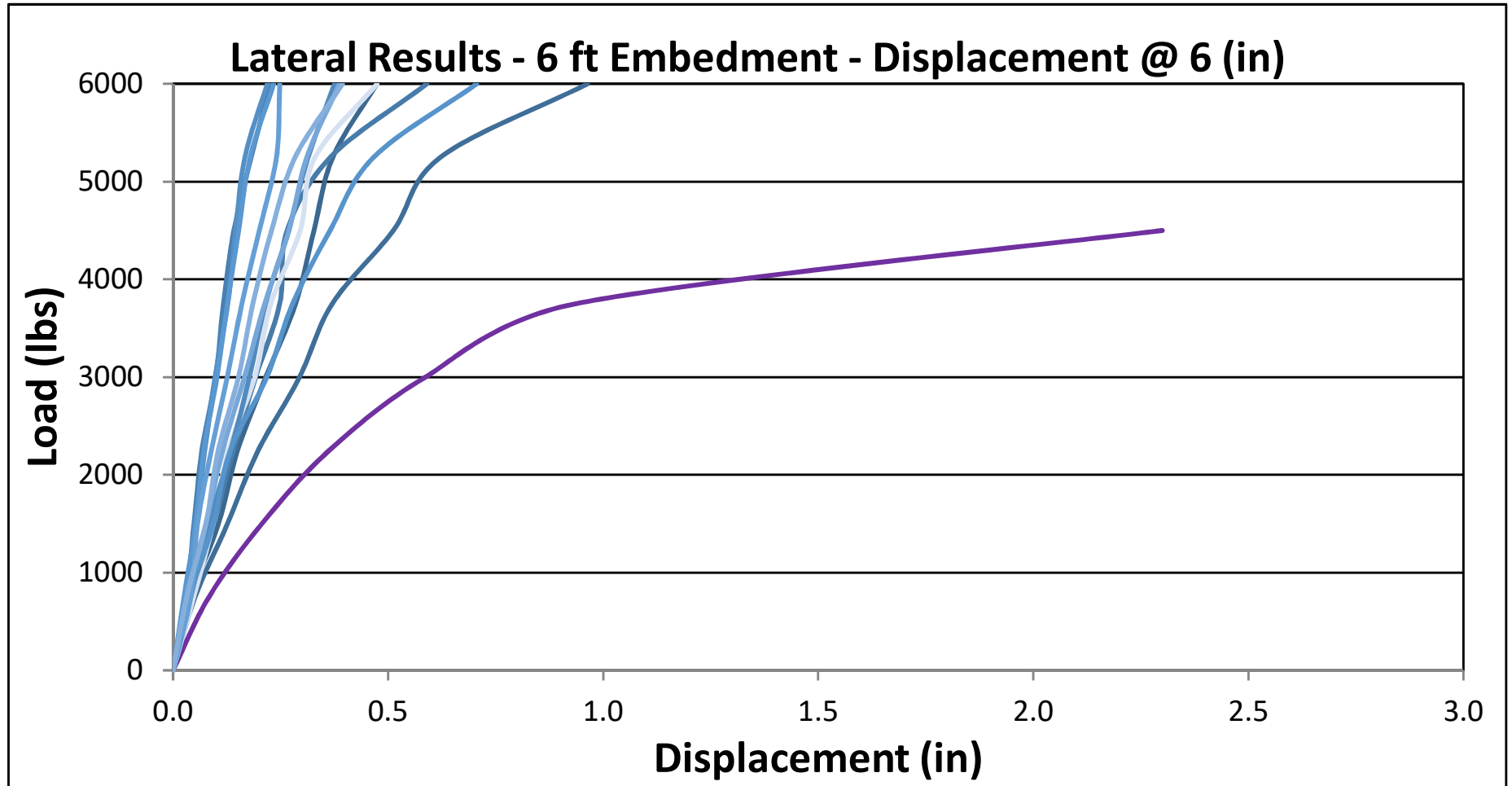
Sean Scott



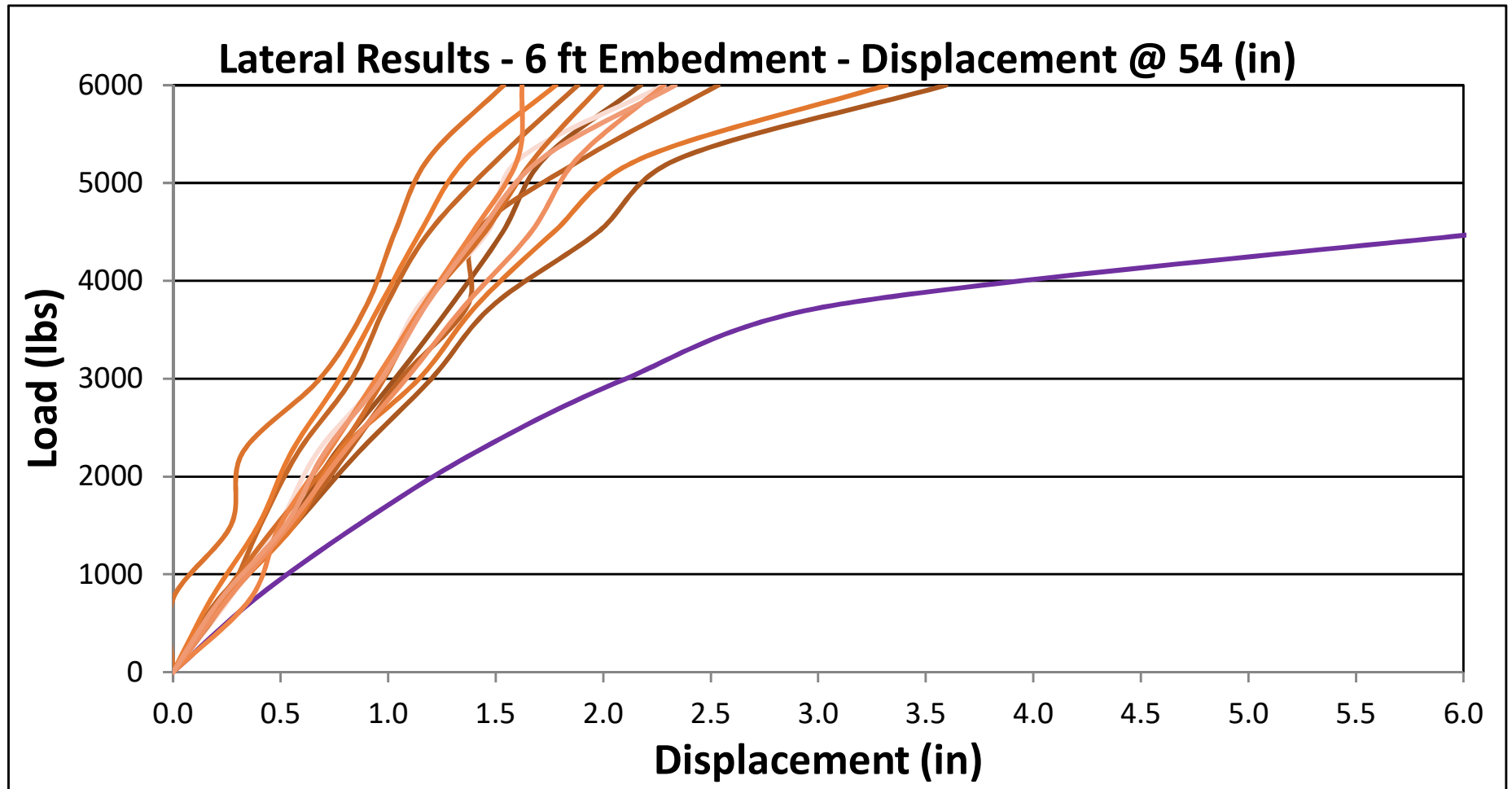
Appendix E

LPile Calibration Curves

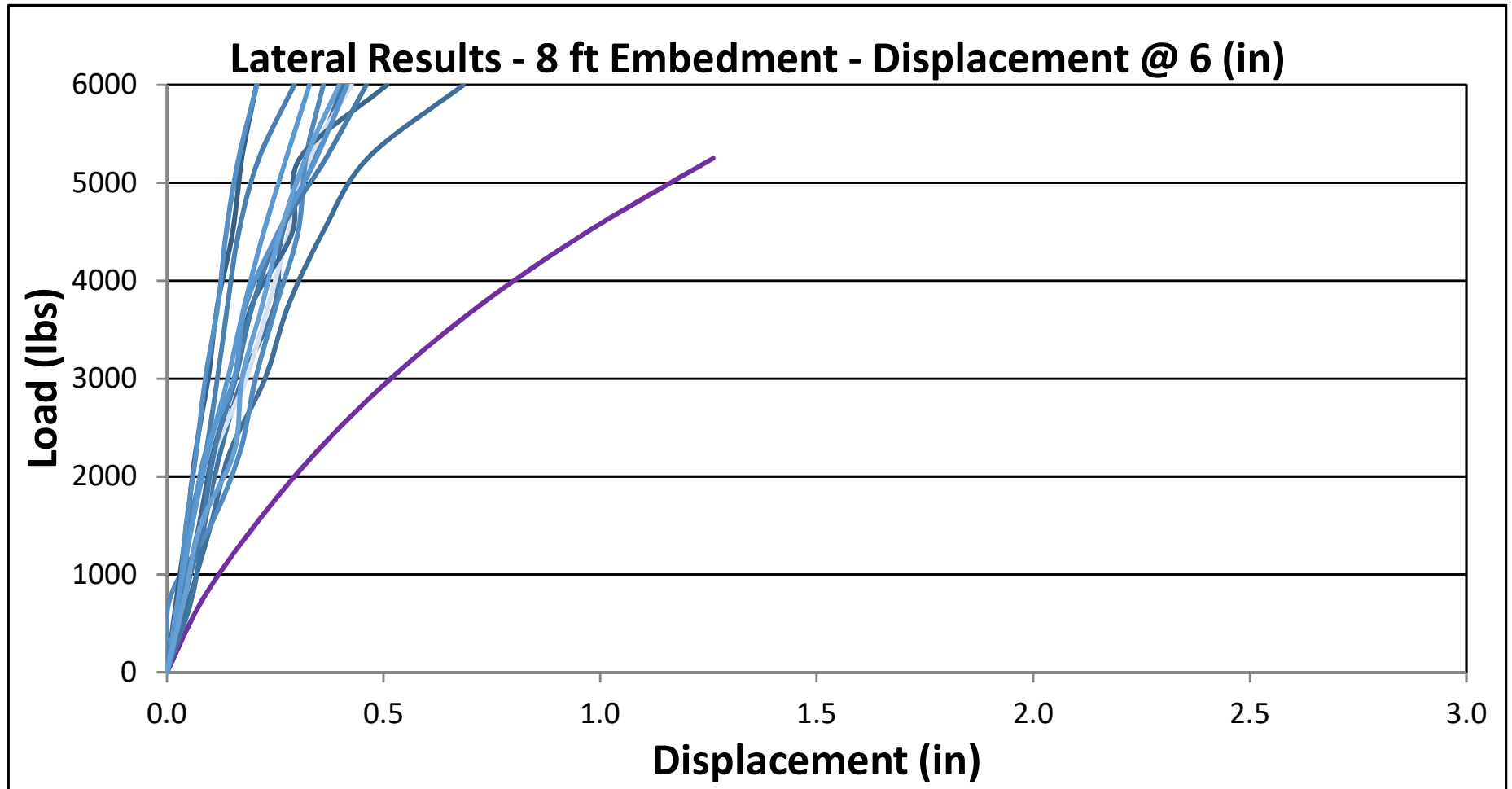
Lockhart II Solar Project LPile Calibration Curves



Lockhart II Solar Project LPile Calibration Curves



Lockhart II Solar Project LPile Calibration Curves



Lockhart II Solar Project LPile Calibration Curves

