Geotechnical Site Evaluation
Proposed Self-Storage Facility
18618 Oxnard Street
APN 2156006018
Tarzana, California

prepared for

Palatine Capital Partners Management, LLC
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Work Order: 3191-0-0-100

Attention: Mr. Glauco Lolli-Ghetti

Subject: **Geotechnical Site Evaluation, Proposed Self-Storage Facility, 18618 Oxnard Street, (APN 2156006018) Tarzana, California.**

1. INTRODUCTION

The following report contains the results of our geotechnical site evaluation addressing design and construction of a self-storage facility at 18618 Oxnard Street in Tarzana, California, on the south side of the street between Yolanda and Baird Avenues (see the attached Vicinity Map, Figure 1). The project consists of an existing one story high tilt-up building that will be converted to a self-storage facility along with a new three-story storage building in the southern portion of the property.

The 1.5 acre, relatively flat site is presently occupied by a tilt-up building within roughly the northern half of the site. An asphalt drive is along the western side of the building that leads to an asphalt parking lot in the rear half of the site. Below the surface, a thin layer of fill soils overlay alluvial soils to the depths explored. The native alluvial soils consist predominately of silty clay.

Borings were used to obtain data on the subsurface site conditions. The field exploration was supplemented with laboratory testing to determine geotechnical properties of the encountered soils. Based on our site evaluation, the site is suitable for the proposed construction from a geotechnical standpoint provided recommendations presented herein are implemented in the project design and construction. Descriptions of the site and geologic units along with our conclusions and recommendations are presented within the text of this report.

2. PROPOSED DEVELOPMENT

The relatively flat site will be developed for a self-storage facility. This will include redevelopment of the existing tilt-up building in the northern portion of the site and construction of a new three-story building in the rear portion of the site. Access to the buildings will be along the western side of the site. Redevelopment of the existing twenty-six foot high, tilt-up building will consist of removal of the current second floor and replacing it with a new second floor designed for storage floor loads. The new second floor will be independent of the shell of the building and will not transfer loads to the building perimeter walls or its foundation system. The envelop of this building will remain the same, however, the courtyard area will be expanded as shown on Plate 1. The new second floor is planned to be supported on a mat slab on top of the existing interior concrete slab-on-grade. The planned building in the rear of the site will be three stories in height with a layout of storage units within the interior. The new building are anticipated to be supported on a mat foundation system. However, geotechnical recommendations for both conventional and mat foundations are presented in this report. The existing parking lot grade within the area of the new building has an elevation difference of roughly 3 feet (elevation 761.5 to 758.5). Planters are anticipated for stormwater management.

3. SCOPE OF GEOTECHNICAL SERVICES

The following services were performed to evaluate geotechnical site conditions affecting the building design and construction. The evaluation was conducted under the supervision of a State registered geotechnical engineer.

3.1 ARCHIVAL REVIEW

Pertinent site geotechnical and geologic information in our files was reviewed and incorporated into the site evaluation.

3.2 SUBSURFACE EXPLORATION

To obtain data on the subsurface site conditions, five geotechnical borings (8-inch diameter) were drilled to depths of approximately 51 feet (except B-5 extended to 46 feet) below the existing ground surface (bgs). The borings were excavated using a subcontractor supplied and operated hollow-stem auger drill rig, equipped with an automatic hammer weighing 140 pounds with a 30-inch drop.

The field exploration activities described above were observed by an engineer, who logged the underlying materials and obtained bulk and relatively undisturbed soil samples for laboratory analyses. Standard Penetration Testing (SPT's) were performed in the borings at maximum 5-foot intervals to evaluate the potential for seismically induced settlement and relative density.

At the conclusion of logging and testing, the borings were backfilled with neat cement via tremie pipe and topped with a bentonite slurry patch. However, the backfill may settle over time and the site representative should fill any depression that may occur, as necessary.

3.3 LABORATORY TESTING

A program of geotechnical laboratory testing was performed to evaluate geotechnical properties of selected soil samples obtained during the subsurface exploration. The following tests were conducted for this site evaluation:

- Moisture and Density Testing of Undisturbed Soil Samples
- Direct Shear Testing
- Maximum Density-Optimum Moisture Relationships
- Grain Size Distribution (Hydrometer Testing)
- Consolidation Testing
- Atterberg Limits
- Expansion Index Testing
- Corrosion Testing

3.4 PLAN REVIEW

The plan showing the proposed development was reviewed to comprehend the proposed development. The current project layout is shown on Plate 1.

3.5 GEOTECHNICAL ENGINEERING ANALYSIS AND REPORT PREPARATION

The results of the above scope of services are the basis for our engineering analyses. This report was prepared to present our discussions and geotechnical recommendations and includes:

a) A description of subsurface conditions as encountered in the exploratory excavations including Logs of Subsurface Data (Appendix A) and a Boring Location Map (Plate 1) showing the approximate excavation locations.

b) A description of the laboratory testing programs, including tests results (Appendix B).

c) Discussion and recommendations regarding:
   i) Geologic hazards including seismic setting of the site and faulting,
   ii) Seismic design criteria for building design;
   iii) Seismically induced settlement;
   iv) Soil collapse and expansion potential;
   v) Site preparation and remedial grading;
   vi) Conventional and mat foundation design recommendations;
   vii) Estimated settlements;
   viii) Pavement and hardscape design recommendations;
   ix) Soil chemistry analysis, by subcontract.

4. SITE CONDITIONS

4.1 SITE LOCATION AND DESCRIPTION

The site is a relatively flat, rectangular shaped 1.5 acre parcel at 18618 Oxnard Street in Tarzana, California, on the south side of the street between Yolanda and Baird Avenues (see the attached Plate 2). It is occupied by a 26 foot high tilt-up concrete building along the eastern property line in the northern half of the site. The building has a rough footprint of 115 feet by 257 feet with a footprint of 23,568 square feet with an indented courtyard and entry area (see Plate 1). The interior finish floor has an elevation of 759.02 feet. It was constructed in the early 1970's and after its construction the second floor was added when the building as modified for the film school that currently occupies the building. Subsequently, a theater was added to the southeast corner of the building. The existing building to be retrofitted appears to be in good condition from a geotechnical standpoint without signs of distress to the building shell. The building is indicated to be supported on drilled cast-in-place concrete piles on located foundation plans. The remaining portions of the site area are covered with asphalt paving in the drive along the western boundary and parking area in the rear of the site. The paved areas appear to be performing adequately, however, portions are heavily weathered. Landscaping is limited to planter strips with mature trees along the western side and front of the building and along the western property line and within the parking lot.

4.2 SUBSURFACE CONDITIONS

The site is underlain by Quaternary-age alluvium to the maximum depth explored. Descriptions of the alluvium as encountered in the exploratory borings, which were extended to 51 feet (except B-5 extended to 46 feet) below the ground surface, are provided below and in the attached Logs of Subsurface Data (Appendix A).

4.2.1 Fill

Fill soils were encountered on site to a depth of up to approximately 3 feet below ground surface. These fill soils consisted of yellowish brown to dark brown sandy to silty clay in a moist and medium stiff to stiff condition.

4.2.2 Alluvium

Quaternary-age alluvium underlies the site to the maximum depth explored. As encountered in the exploratory borings, the upper soil profile of the alluvium predominately consists of yellowish brown sandy to clayey silt with calcium carbonate in a moist to damp and medium stiff to stiff condition interstratified with tannish brown silty sand in a damp and medium dense condition and local layers of dark yellowish brown silty clay in a moist and stiff condition. The soil profile of the alluvium at depth generally consists of yellowish brown to olive brown sandy to clayey silt with calcium carbonate and traces of mica and manganese oxide interstratified with dark yellowish brown to strong brown sandy to silty clay in a moist and stiff to very stiff condition. In boring B-4, an approximate 6-foot layer of silty fine to coarse sand with iron oxide staining was encountered at depth in a damp and dense to very dense condition.

4.2.3 Existing Building Interior Slab

The concrete slab-on-grade within the interior of the existing building was cored at the approximate locations shown on Plate 1. The slab was found to be 4 inches thick in the northern and center portions of the building, and 5 inches thick in the southern portion of the building. The cores will be broken, analyzed, and discussed in a later report.

4.2.4 Existing Building Foundation

Excavations were made at the perimeter of the building at the joint between the tilt-up wall panels at two locations. The excavation was made to a depth of 7 feet below the ground surface at the pit locations shown in Plate 1. Rectangular pile caps were encountered 2 feet below the ground surface; the top of the pile cap extended 1 foot outside of the building footprint, measured from the wall panel to the edge of the cap. The bottom of the pile caps were observed to be 6 feet deep and 4 feet thick, providing a full embedment of 6 feet below ground surface. The soil past 6 feet below ground surface was probed laterally below the footing area but only soil was encountered or accessible.

4.3 GROUNDWATER

Groundwater was not encountered in the borings. However, based on the *Seismic Hazard Zone Report* for the Canoga Park 7.5-minute Quadrangle and NavigateLA, historic groundwater is approximated at 15 feet below the site. As in any groundwater situation, groundwater levels can fluctuate and groundwater (or perched zones) may be encountered at higher elevations than previously observed in the general area.

4.4 LANDSLIDES
Given the relatively flat nature of the site, no landslides are present within or adjacent the site nor are any shown on regional geologic maps.

4.5 FAULTING AND SEISMICITY
The site, like any in the southern California area, is in a seismically active region prone to occasional damaging earthquakes. The destructive power of earthquakes can be grouped into fault-rupture, ground shaking (strong motion), and secondary effects of ground shaking such as tsunami, liquefaction, settlement, mass wasting, and flooding from dam failures.

The hazard of fault-rupture is generally thought to be associated with a relatively narrow zone along well-defined, pre-existing active faults. No doubt there is and will be exceptions to this, because it is not possible to predict the precise location of a new fault where none existed before (CDMG, 1975). No Holocene-active faults are known to cross the site nor is the project site currently located within an Alquist-Priolo (A-P) Earthquake Fault Zone as defined by the State Geologist (CGS 2018). The closest active fault is the Northridge Hills fault zone, which lies approximately 4.7 miles north of the site. The potential for ground rupture on-site due to faulting during the time period of concern is considered remote.

Although no active or potentially active faults are known to exist within or adjacent the site, the area will be subject to strong ground motion from occasional earthquakes in the region. Four significant earthquakes have occurred epicentered within a 40± mile radius of the site within the last eight decades; the March 11, 1933 Long Beach earthquake (6.4 magnitude), the February 9, 1971 San Fernando earthquake (6.6 magnitude), the October 1, 1987 Whittier Narrows earthquake (5.9 magnitude) and the January 17, 1994 Northridge earthquake (6.7 magnitude). Significant earthquakes will likely occur in this area within the life expectancy of the project and the site will experience strong ground shaking from these events.

Based on the latest United States Geological Survey (USGS) interactive web application, Unified Hazard Tool https://earthquake.usgs.gov/hazards/interactive/ probabilistic seismic hazard analyses (PSHA) predict the Design Basis Earthquake (475-year return period) peak horizontal ground acceleration will be on the order of 0.52g for the alluvial soil conditions of the class D site. The mean magnitude from this PSHA is 6.59 (Mw) with a mean distance of approximately 14.9 km from the property. Utilizing a 2% chance of being exceeded in 50 years (2475-year return period) peak horizontal ground acceleration will be on the order of 0.85g for the soil conditions on site. The mean magnitude from this PSHA is 6.7 (Mw) with a mean distance of approximately 12.42 km from the property.

As previously mentioned, the secondary effects of strong ground motion include tsunami, seiche, liquefaction, seismic settlement, earthquake triggered landslides, and flooding from dam failures. Tsunamis are impulsively generated water waves that can cause damage to ocean shoreline areas. A seiche is an oscillation wave within an enclosed body of water. The site is not near the ocean or adjacent a body of water and, therefore, is not subject to tsunami and seiche hazards. Furthermore, the site is not prone to earthquake triggered landslides due to the relatively low relief in the area and preponderance of development covered land. It is outside of a dam failure inundation zone. Earthquake induced liquefaction and seismic settlement affecting the proposed site development are discussed below.

4.6 FLOOD POTENTIAL
The site is not in an area designated to have a flood hazard potential based on the FEMA Flood Inundation Zone Map, Panel 06037C1295F, dated 9/26/2008.

4.7 METHANE HAZARD ZONE
The site is not within the city of Los Angeles methane or methane buffer zones.

4.8 HYDROCONSOLIDATION

Hydroconsolidation occurs when the soil structure collapses due to wetting of the soils resulting in consolidation of the soil column. Minor hydroconsolidation (roughly 0.1 percent) was observed in one of consolidation tests performed for this evaluation within the native soils to remain after remedial grading. Expansion occurred in the remaining consolidation tests upon wetting. Therefore, the potential for hydroconsolidation is considered to be minor to negligible.

5. LIQUEFACTION AND SEISMICALLY INDUCED SETTLEMENT HAZARD

5.1 GENERAL

The site is an area shown to have a potential for liquefaction on the Earthquake Zones of Required Investigation Map, Canoga Park Quadrangle (CGS, 1998, see Figure 3). However, to determine if seismic settlement would be a concern at this site, the potential for seismic induced settlement was evaluated based on the data collected from the borings.

Liquefaction can occur when saturated, loose, sandy to silty soils (non-cohesive) are subjected to excessive ground vibrations during a significant seismic event. During a significant seismic event, pore pressure increases due to earthquake shaking within the saturated soils (generally in the upper 50 feet of a site) causing these soils to lose strength. This may result in mobilization of the soil causing total or differential settlements, lateral spreading, and/or surface manifestations such as loss of bearing capacity, artesian water flow, and sand boils. Dry sand settlement is where seismic shaking causes densification of low-density sands.

Seismic induced lateral movement or spread is where soils that liquefy or loose strength move on a sallow slope or toward a free face. Conditions generally conducive to lateral spread are a gentle surface slope, shallow groundwater table, liquefiable soils.

The site was found to have a negligible potential for seismic induced ground settlement at depth based on data obtained from the geotechnical borings. Seismic settlement is discussed further in this section. Differential settlement is expected to be negligible. Therefore, it is acceptable to construct the building as described herein.

The analyses of liquefaction potential and seismically induced settlement/movement were conducted in general accordance with CDMG Special Publication 117A. The assumptions made and the procedures used are discussed below along with the results of the analyses.

5.2 GROUNDWATER

Based on the *Seismic Hazard Zone Report* for the Canoga Park 7.5-minute Quadrangle and NavigateLA, a historic groundwater of 15 feet below the site was used in the analysis.

5.3 EARTHQUAKE PARAMETERS

A seismic event having a 2% chance of being exceeded in 50 year (2475 return period) was used for the evaluation of liquefaction/seismic settlement potential. Mean magnitude from the probabilistic seismic hazard analysis (PSHA), used to quantify the rate (or probability) of exceeding various ground-motion levels at a site given all possible earthquakes is 6.7 (Mw) with a mean distance of 12.42 km from the property. Peak ground acceleration was determined to be PGAM = 0.861g.

5.4 SEISMIC SETTLEMENT (LIQUEFACTION)

Seismically induced settlement was evaluated using data obtained from the boring. The computer program GeoSuite by GeoAdvanced™ was used for the liquefaction and dry sand settlement analyses.

Analysis was conducted using the undisturbed sampler and SPT (standard penetration test) data from the completed borings. The SPT tests were performed using a 140-pound automatic hammer dropped

30 inches. Field recorded blow counts are shown on the boring logs in Appendix A. The SPT sampler is designed for a liner inside the sampling tube. However, sampling during the field investigation did not include the use of a liner and the blow counts were corrected accordingly. Field N-value blow counts were normalized to 1 ton/square foot and corrected for the rig efficiency, hammer type, sampler type (no liner), rod length, and fines content (where applicable) as described in the Recommended Procedures for Implementation of CDMG Special Publication 117 (SCEC 1999). The GeoSuite program calculates liquefaction based on SPT blow counts following Idriss and Boulanger (2008) and dry sand settlement following Pradel (1998).

Seismic settlement of dry (unsaturated) sands was evaluated using the procedure proposed by Pradel (1998) based on the Tokimatsu and Seed (1987) procedure. This method by Pradel uses a series of equations to determine the volumetric strain induced in a soil layer based on the equivalent corrected N-values and the design earthquake parameters.

For these evaluations, a soils' potential to liquefy is expressed as a factor of safety. The factor of safety against liquefaction potential is calculated, as the ratio of the cyclic stress needed to cause liquefaction over the cyclic stress induced by an earthquake. A factor of safety against liquefaction of 1.3 or greater is generally considered to represent no significant potential for liquefaction. A summary of our results of seismically induced settlement potential is provided in the table. Actual seismic induced settlement would be dependent upon the degree of seismic induced groundshaking at the site and the duration of the shaking. Calculation sheets can be found in Appendix C of this report.

Data Point	Estimated Seismic Settlement at PGA_M *
B1	.33”
B2	0.03”
B3	0.12”
B4	0.08”
B5	0.75”

*Seismic Settlement is after remedial grading has been completed.

The potential for seismic settlement based on the borings resulted in negligible to minor seismic settlement. Since, the estimated settlement is relatively uniform across the site, differential settlement is anticipated to be minor to negligible (1/2 inch or less in 30 feet).

5.5 SURFACE MANIFESTATION

The likelihood of liquefaction induced surface manifestation is considered negligible due to the minor amount of calculated seismic settlement.

5.6 LATERAL SPREADING

The likelihood of lateral spread occurring is considered negligible due to the flat nature of the site, negligible liquefaction potential, and lack of adjacent sloping ground surfaces.

5.7 SEISMIC INDUCED LANDSLIDING

The general area of the site is relatively flat and therefore, is not considered susceptible to seismic slope instability. Areas prone to seismically induced landslides are slopes with steep gradients covered with weakly indurated bedrock, loose weak soils, or debris from previous landslides.

6. CONCLUSIONS AND RECOMMENDATIONS

6.1 GENERAL

The site was evaluated from a geotechnical site standpoint and is considered suitable for the self-storage project as described herein at 18618 Oxnard Street in Tarzana, California. The alluvial soil deposits underlying the site are suitable for support of the structure. However, remedial grading is proposed to prepare the site as discussed hater herein. Differential settlement should be negligible. The project may be developed as described earlier in this report provided recommendations presented herein are followed and incorporated into the project design and construction.

6.2 GEOTECHNICAL SEISMIC DESIGN

As previously discussed, active faults identified by the State are not onsite nor is the site within an Alquist-Priolo Earthquake Fault Zone. Nevertheless, the site is within a seismically active region prone to occasional damaging earthquakes.

Structures within the site may be designed using procedures for seismic design presented in ASCE/SEI 7-16. Mapped acceleration parameters are initially determined for sites having a shear wave velocity of 2,500 feet per second (Section C11.4.4). The S_s and S_1 values are adjusted to obtain the maximum considered earthquake (MCE) spectral acceleration values for the site based on its site class of D. The seismic design parameters for the site's coordinates (latitude 34.1791 N and longitude 118.5389 W) were obtained from the web based Seismic Design Maps: https://seismicmaps.org/. The parameters are presented below.

SEISMIC PARAMETER	VALUE PER CBC
Short Period Mapped Acceleration (S_s)	1.885g
Long Period Mapped Acceleration (S_1)	0.667g
Site Class Definition	D
Site Coefficient (F_a)	1.0
Site Coefficient (F_v)	1.7*
$S_{MS} = F_a S_s$	1.885g
$S_{M1} = F_v S_1$	1.134*g
$S_{DS} = 2/3 S_{MS}$	1.257g
$S_{D1} = 2/3 S_{M1}$	0.756*g
PGA_M	0.861g

**Based on proposed development meeting requirements of the exemption for Site Class D sites in Section 11.4.8 of ASCE 7-16. Further analysis may be required once the Response Modification Factor and Period of the proposed expansion are known.*

The purpose of the building code earthquake provisions is primarily to safeguard against major structural failures and loss of life, not to limit damage nor maintain function. Therefore, values provided in the building code should be considered minimum design values and should be used with the understanding site acceleration could be higher than addressed by code-based parameters. Cracking of walls and possible structural damage should be anticipated in a significant seismic event.

6.3 SITE PREPARATION AND GRADING

6.3.1 General

The following sections contain geotechnical recommendations concerning site preparation and grading. Grading should be per the City of Los Angeles Building Code unless superseded by recommendations herein.

6.3.2 Demolition
Presently, the area is covered by paving and facilities related to the prior use of the property that are planned for demolition. Utilities to remain should be protected in place.

6.3.3 Site Cleanup
Site cleanup should consist of the removal and wasting off-site of trash, debris, vegetation, or deleterious materials present within areas of grading or construction. This office should observe the surface of the cleared area prior to starting grading.

6.3.4 Groundwater
Groundwater was not encountered in the borings. However, the moisture content in the soil can fluctuate with seasons.

6.3.5 Tree Removal
Where tree removal is necessary, the resulting cavity should be cleaned of slough and observed by a representative of this office prior to fill placement. A two to three cubic foot of soil loss should be anticipated for a removed tree. Brush and/or tree roots over one-half inch diameter should be removed from areas of grading.

6.3.6 Soil Removal
Remedial grading should be performed within the new building areas to remove existing fill soils and soils disturbed during demolition of the current site improvements. The existing fill soils within the building areas (including parking and drive to be reconstructed) should be overexcavated to a depth of at least 3 feet below the existing site grade. The removal may extend down at a 1/2(horizontal):1(vertical) gradient with a temporary 4 foot vertical at the toe of the removal. However, soil removals should not extend below a 2(horizontal)1(vertical) line extending down from the property lines. The bottom of the removal should extend at least 5 foot outside the perimeter of the building or foundation, whichever is greater except as indicated near the property lines or existing building.

The removed soils may be reused as fill material provided, the soils are clean and placed as described herein. The removal area should be observed by this office prior to fill placement to evaluate if deeper removals are necessary.

6.3.7 In-Place Soil Processing
Once the soil removals are complete and prior to placing fill, the bottom of the removal area should be processed. Processing consists of scarifying the exposed surface to a depth of roughly 6 to 8 inches, conditioning the scarified soil to above the optimum moisture content, and compacting the scarified soil. Processed soil should be compacted to 90 percent relative compaction.

6.3.8 Fill Placement
Soils generated from the removal areas should be suitable for reuse as fill. Import fill if required should be similar to on-site materials. This office should observe the source of import fill prior to placement.

Fill soils should be free of significant vegetation, rocks greater than 6 inches in maximum linear dimension, and other deleterious materials. In addition, fill soils should be mixed and blended. Fill soils should be placed in lifts not exceeding 8 inches in maximum loose thickness, moisture conditioned to slightly over optimum moisture content, and compacted to at least 90 percent relative compaction.

6.3.9 Relative compaction
Relative compaction is the ratio of the in-place dry soil density to the maximum dry soil density as determined in general accordance with ASTM laboratory standard D-1557.

6.3.10 Utility Trenches
Utility trench backfill within building, parking, drive, and loading areas be compacted to a minimum of 90% relative compaction.

6.3.11 Temporary Excavations
During construction, excavation and maintenance of safe and stable slope angles are the responsibility of the contractor, who should consider the subsurface conditions and the method of operation. All sub-surface construction should conform to the requirements of OSHA. Surcharge loads should be setback from the top of temporary excavations a minimum horizontal distance equal to the depth of the cut or 10 feet, whichever is more. All excavated backfill should be properly placed and compacted.

6.4 SOIL EXPANSIVENESS
A soil expansion test was performed on a representative soil sample obtained from the site. Test results indicate the underlying materials have a moderate expansion potential, in the 51-90 Expansion Index range. Load consolidation testing also indicate the presence of expansive clay soils. The deeper soils are anticipated to be possibly higher in expansion. Therefore, additional expansion tests should be performed at the conclusion of the recommended remedial grading.

Expansive soils contain clay particles that change in volume (shrink or swell) due to a change in the soil moisture content. The amount of volume change depends upon the soil swell potential (amount of expansive clay in the soil), availability of water to the soil, and the soil confining pressure. Swelling occurs when soils containing clay become wet due to excessive water from poor surface drainage, over-irrigation of lawns and planters, and sprinkler or plumbing leaks. Swelling clay soils can cause distress to structures, walks, drains, and patio slabs.

Swelling clay soils can cause distress to construction (generally as uplift). Construction on expansive soil has an inherent risk that should be acknowledged and understood by the developer/property owner. The geotechnical recommendations presented herein are intended to reduce the potential for expansive soil action. However, these recommendations are not intended, nor designed to provide complete and full mitigation of expansive soil conditions.

6.5 CORROSION AND CHEMICAL TESTING
The results are presented herein of analytical laboratory testing to evaluate the potential for corrosion of materials in contact with the onsite soils. Testing was performed by Project X Corrosion Engineering on a soil sample considered to represent the onsite soils (the test results are attached hereto in Appendix B). From ACI Table 19.3.1.1, the evaluated soil is categorized as Class S0. The required concrete design requirements for this exposure class can be obtained from ACI Table 19.3.2.1. The potential for corrosion of metals in contact with the onsite soils is severely corrosive as determined from Table 1. For specific recommendations, a corrosion engineer should be consulted.

ACI Table 19.3.1.1 – Exposure Categories and Classes

Category	Class	Water-soluble sulfate (SO_4^{2-}) in soil, percent by mass	Dissolved sulfate (SO_4^{2-}) in water, ppm[1]
Sulfate (S)	S0	$SO_4^{2-} < 0.10$	$SO_4^{2-} < 150$
	S1	$0.10 \leq SO_4^{2-} < 0.20$	$150 \leq SO_4^{2-} < 1500$ or seawater
	S2	$0.20 \leq SO_4^{2-} < 2.00$	$1500 \leq SO_4^{2-} < 10,000$
	S3	$SO_4^{2-} > 2.00$	$SO_4^{2-} > 10,000$

1 ppm (parts per million) = milligrams per kilogram mg/kg of dry soil weight

ACI Table 19.3.2.1 – Requirements for Concrete by Exposure Class

Exposure Class	Maximum *w/cm*	Minimum f_c', psi	Cementitious materials - Types			Calcium chloride admixture
			ASTM C150	ASTM C595	ASTM C1157	
S0	N/A	2500	No type restriction	No type restriction	No type restriction	No restriction
S1	0.50	4000	II	Types IP, IS, or IT with (MS) designation	MS	No restriction
S2	0.45	4500	V	Types IP, IS, or IT with (MS) designation	HS	Not permitted
S3	0.45	4500	V plus pozzolan or slag cement	Types IP, IS, or IT with (MS) designation plus pozzolan or slag cement	HS plus pozzolan or slab cement	Not permitted

ACI Tables 19.3.1.1 and 19.3.2.1 - ACI 318-14 Building Code Requirements for Structural Concrete

Table 1. Relationship Between Soil Resistivity and Soil Corrosivity

Soil Resistivity, ohm-cm	Classification of Soil Corrosiveness
0 to 900	Very severe corrosion
900 to 2,300	Severely corrosive
2,300 to 5,000	Moderately corrosive
5,000 to 10,000	Mildly corrosive
10,000 to >10,000	Very mildly corrosive

F. O. Waters, Soil Resistivity Measurements for Corrosion Control, Corrosion. 1952, Vol, No. 12, 1952, p. 407.

6.6 FOUNDATION RECOMMENDATIONS

6.6.1 General

The proposed structures will be supported on mat foundations. The reconstructed second floor within the existing building may be supported directly on top of the existing slab-on-grade. The new building may be supported entirely on a mat slab. Footings, if necessary, may be designed per the recommendations in the following sections.

6.6.2 Conventional Footings

The proposed structures will be supported on continuous or isolated footings underlain by engineered compacted soil as addressed above and may be designed for an allowable bearing pressure of 2,000 pounds per square foot (psf). The allowable net bearing pressure may be increased by one-third when considering wind or seismic loads. The weight of concrete below grade may be excluded from the footing load.

Interior and exterior footings should be embedded a minimum of 24 inches deep below the lowest adjacent grade. Embedment should be measured from the lowest grade adjacent the footings, exterior or interior. Interior footing embedment depth may be measured from the top of the slab on-grade. The footing width should be a minimum of eighteen inches for continuous footings and twenty-four inches for isolated footings. Footing reinforcement should be per the structural engineer's recommendations. However, minimum continuous footing reinforcement should consist of two number five bars in the top and bottom (total of 4 bars). Perimeter isolated footings should be tied together with a grade beam extending two feet deep below the lowest adjacent grade.

6.6.3 Lateral Resistance
Lateral forces on foundations may be resisted by passive earth pressure and base friction. Lateral passive earth pressure may be considered equal to a fluid weighing 300 pcf. The lateral passive pressure may be increased to a maximum of 3000 psf. Base friction may be computed at 0.30 times the normal load. Base friction and passive earth pressure may be combined without reduction.

6.6.4 Mat Slab Design Data
Mat slabs may be designed using an allowable soil bearing pressure of 1,500 pounds per square foot or a modulus of subgrade reaction "K" of 125 pounds per cubic inch (pci) at the surface of a properly prepared building pad. The project structural engineer should determine the steel reinforcement and concrete compressive strength. The slabs supporting interior steel stud walls should be a minimum of 8 inches thick.

Construction of the mat for the new second floor or the new building should not have an effect on the existing building.

6.6.5 Estimated Foundation Settlements
Static settlement of footings should be evaluated once building footing locations and structural loads are known. However, settlement of the mat slab for static loading is anticipated on the order of 1/2 inch over a span of approximately 30 feet. This is provided building construction is completed in a timely manner. Settlements due to static loading are expected to occur rapidly as the loads are applied.

All structures settle during construction and some minor settlement of structures can occur after construction during the life of the project. Minor wall cracking could occur within the structure associated with expansion and contraction of the structural members. In addition, wall or slab cracking may be associated with settlement or expansive soil movement. Additional settlement/soil movement could occur if the soils dry or become saturated due to excessive water infiltration generally caused by excessive irrigation, poor drainage, etc.

6.6.6 Footing Excavations
Footings should be cut square and level and cleaned of slough. Soil excavated from footing and utility trenches should not be spread over areas of construction unless properly compacted. A representative of this office should observe the footing excavations prior to placing reinforcing steel. The footings should be cast as soon as possible to avoid deep desiccation of the footing subsoils.

6.6.7 Premoistening
Footing subsoils should be premoistened to 3% over the optimum moisture content for a depth of 18 inches. Saturated soils or soils silted into the footing excavations should be removed prior to concrete placement.

6.7 SLABS-ON-GRADE

6.7.1 Site Preparation
Concrete slabs on-grade not used for structural support may be supported on compacted engineered fill soils. Slab subgrade soils should be recompacted prior to placing the sand subbase, if the soils were disturbed during footing or utility construction.

6.7.2 Design Data
Interior concrete slabs on-grade not used for structural support should be 5 inches thick and underlain by 6-inch-thick layer of ½ inch or larger clean aggregate or per applicable building codes, whichever is the more restrictive. The slab should be reinforced with a minimum of number 4 bars at 18-inch centers in each direction. The reinforcement should be placed and kept at slab mid-depth.

6.7.3 Premoistening
Soils under lightly loaded slabs on-grade should be premoistened to 3% over the optimum moisture content for a depth of 18 inches.

6.7.4 Moisture Vapor Retarder
A moisture vapor retarder layer should be incorporated into the slab on-grade design within the building interior. The water vapor retarder should be one that is specifically designed as a vapor retarder and consist of a minimum 15 mil extruded polyolefin plastic and comply with Class A requirements under ASTM E1745 (*Standard Specification for Plastic Water Vapor Retarders Used in Contact with Soil or Granular Fill under Concrete Slabs*). The vapor retarder should be installed in accordance with ASTM E1643. The water vapor retarder should be installed in direct contact with the concrete slab along with a concrete mix design to control bleeding, shrinkage, and curling (ACI 302.2R). The vapor retarder shall be installed over a minimum 6-inch-thick layer of ½ inch or larger clean aggregate or per applicable building codes, whichever is the more restrictive. The vapor retarder should be placed per ASTM E1643-98(2005) *Standard Practice for Installation of Water Vapor Retarders Used in Contact with Earth or Granular Fill Under Concrete Slabs*. All joints should be lapped and sealed along with proper sealing of perforations such as for plumbing. In addition, various trades and the concrete contractor should be required to protect the moisture retarder during construction.

Perforations through the moisture vapor retarder such as at pipes, conduits, columns, grade beams, and wall footing penetrations should be sealed per the manufacture's specifications or ASTM E1643. Proper construction practices should be followed during construction of slabs on-grade. Repair and seal tears or punctures in the moisture barrier that may result from the construction process prior to concrete placement.

Minimizing shrinkage cracks in the slab on-grade can further minimize moisture vapor emissions. A properly cured slab utilizing low-slump concrete will reduce the risk of shrinkage cracks in the slab as described herein.

The concrete contractor should make the necessary changes in the concrete placement and curing for concrete placed directly over the retarder. Placing the concrete directly on top of the moisture vapor retarder layer allows the layer to be observed for damage directly prior to concrete placement.

The slabs should be tested for moisture content prior to the selection of the flooring and adhesives. Moisture in the slabs should not exceed the flooring manufacture's specifications. The concrete surface should be sealed per the manufacture's specifications if the moisture readings are excessive. It may be necessary to select floor coverings that are applicable to high moisture conditions.

6.7.5 Concrete Placement and Cracking
Minor cracking of concrete slabs is common and generally the result of concrete shrinkage continuing after construction. Concrete shrinks as it cures resulting in shrinkage tension within the concrete mass. Since concrete is weak in tension, development of tension results in cracks within the concrete. Concrete should be placed using procedures to minimize the cracking within the slab. Shrinkage cracks can become excessive if water is added to the concrete above the allowable limit and proper finishing and curing practices are not followed. Concrete mixing, placement, finishing, and curing should be performed per the American Concrete Institute Guide for Concrete Floor and Slab Construction (ACI 302.1). Concrete slump during concrete placement should not exceed the design slump specified by the structural engineer. Concrete slabs on grade should be provided with tooled or saw cut (saw cuts should be made the same day a maximum within few hours of the pour or per the structural engineer's recommendations) crack control joints at 10-15 foot centers or as specified by the structural engineer.

6.8 RETAINING WALLS

6.8.1 General

Due to a shallow grade difference from the south to the north, a low retaining or stem wall is anticipated in the southern area of the building. The wall should be designed per the following sections.

6.8.2 Foundations

Allowable bearing capacities and lateral resistance provided herein for conventional footings may be used for retaining/subterranean wall design.

6.8.3 Lateral Earth Pressures

The retaining/stem wall restrained at the top should be designed for a minimum lateral earth pressure equal to 60 pounds per cubic foot with a triangular distribution. Exterior walls may be designed for an active pressure of 35 pounds per cubic foot. The lateral pressure is an ultimate value with no factor of safety included. Surcharges from adjacent loading should be added to the wall active pressure.

6.8.4 Lateral Seismic Pressure

The walls will be under 6 feet high and therefore, will not require seismic loading in the design.

6.8.5 Waterproofing

The portion of a wall retaining soil should be waterproofed on the exterior in addition to installing the drainage system and wall backfill. The waterproofing and backdrain system should be designed by a waterproofing consultant experienced with this type of structure.

6.8.6 Drainage

Drainage systems should be installed behind retaining walls to prevent accumulation of water. The drainage system should consist of a minimum 12-inch-wide zone of drain material consisting of No. 4 rock (or pea gravel) and sand at a 1:1 ratio or equivalent. The drain material should extend to within 18 inches of the top of the backfill; the top 18 inches should be compacted native clayey soil to help seal the surface from moisture infiltration. To prevent migration of fine soils into the drain material, it should be wrapped by a layer of filter cloth.

A synthetic drain may be used in lieu of a granular drain. The granular or synthetic drain should be hydraulically connected to a minimum 4-inch diameter perforated PVC (Schedule 40) pipe or equivalent, at the base of the wall stem and a minimum of 6 inches below the top of any adjacent slab, sloped to drain water away from the wall. The backdrain pipes should outlet to approved drainage courses. Positive surface drainage should be provided to prevent ponding of water behind walls.

6.8.7 Backfilling

Retaining walls should be backfilled with granular material or soils having a low expansion potential. The backfill should be placed in 6-inch lifts at slightly over optimum moisture content and compacted to at least 90% relative compaction. Light equipment should be used immediately behind the walls to prevent possible over-stressing. Bracing needed to resist basement wall movement should be in-place prior to placing the backfill.

6.9 EXTERIOR SLABS AND WALKWAYS (Hardscape)

Lightly loaded exterior concrete hardscape (non-auto traffic) and walkways should be a minimum of 4 inches thick and underlain by a minimum of 4 inches of sand. Slabs should be reinforced with a minimum of #3 bars on 24-inch centers in each direction placed at mid-height in the slab. Slabs should have crack control joints at intervals of 10 to 15 feet or per the structural engineer's recommendation. Sidewalks may be constructed of non-reinforced concrete provided they are cut into square panels (i.e., 4-foot-wide walks should be cut into 4 foot by 4-foot squares).

Concrete slab subgrade soils should be properly placed and compacted for support of concrete flatwork. Prior to placing concrete, subgrade soils should be premoistened to a minimum of 3% over the optimum moisture content for a minimum depth of 18 inches. Proper premoistening can reduce the risk of slab subgrade expansion, if used in addition to other preventive measures.

6.10 PRELIMINARY PAVEMENT DESIGN

6.10.1 Structural Section

Structural sections consisting of asphaltic concrete (AC) placed over a compacted layer of aggregate base are provided in the table on the following page based on an estimated R value for the subgrade soils of 7. The R value should be evaluated of the subgrade exposed during rough grading. The project civil engineer should determine the appropriate traffic index for the pavement area.

Asphalt pavements should be maintained by filling cracks that appear and with periodic application of fog sealers to replace surface oils that are lost due to weathering and wear. Planter areas should be graded so that water to drains onto, rather than beneath, adjacent AC pavement and curbs.

Location	**Recommended Structural Section**
Parking Stalls	3"A.C. / 6" A.B.
Drive Areas	3"A.C. / 10" A.B.
Existing Road (repairs if necessary)	Meet Existing or per City requirements

A.C. = Asphaltic Concrete A.B. = Aggregate Base

Portland Cement Concrete Pavement Designs

Location: Entrance Drive Area, Heavy Truck Traffic Areas, and trash enclosure aprons.

Recommended Concrete Thickness	Recommended Aggregate Base Thickness	Minimum Concrete Design Strength	Recommended Steel Reinforcement
7.5"	4"	3500 psi	#3 bars @ 18" O.C. each way

6.10.2 Subgrade Preparation

The subgrade soils within areas of proposed paving should be moistened to slightly above the optimum moisture content and compacted to at least 90% of the laboratory standard prior to placing aggregate base.

6.10.3 Aggregate Base Preparation

The aggregate base materials should be moistened to slightly above the optimum moisture content and compacted to at least 95% of the laboratory standard prior to placing concrete.

6.11 SITE DRAINAGE

Positive drainage should be provided away from structures during and after construction per the grading plan or applicable building codes. Water should not be allowed to gather or pond against foundations. In addition, planters near a structure should be constructed so that irrigation water will not saturate footing and slab subgrade soils.

6.12 PLAN REVIEW

This office should review the grading, building, and foundation plans prior to starting site grading.

7. CLOSURE

This report was prepared under the direction of a registered geotechnical engineer. No warranty, express or implied, is made as to conclusions and professional advice included in this report. Gorian and Associates, Inc. disclaim responsibility and liability for problems that may occur if the recommendations presented in this report are not followed.

This report was prepared for Palatine Capital Partners Management, LLC and their design consultants solely for design and construction of the development described herein. This report may not contain sufficient information for other uses or the purposes of other parties. These recommendations should not be extrapolated to areas not covered by this report or used for other development without consulting Gorian and Associates, Inc.

The recommendations are based on interpretations of the subsurface conditions concluded from information gained from previous grading observations and a surficial site reconnaissance. The interpretations may differ from actual subsurface conditions, which can vary horizontally and vertically across the site. Persons using this report for bidding or construction purposes should perform such independent investigations as they deem necessary. This office should observe all aspects of field construction addressed in this report.

Services of Gorian and Associates, Inc. or this report should not be construed to relieve the owner or any construction contractor from their responsibility or liabilities, or for maintaining a safe jobsite. Neither the professional activities of Gorian and Associates, Inc. nor the presence of our employees shall be construed to imply Gorian and Associates, Inc. has responsibility for methods of work performance, superintendence, sequencing of construction, or safety in, on, or about the jobsite.

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Please contact our office if you have questions regarding the information or recommendations contained in this report, or require additional consultation.

Respectfully,

Gorian and Associates, Inc.

By: Jerome J. Blunck, GE 151
Principal Geotechnical Engineer

REGISTERED PROFESSIONAL ENGINEER
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No. 151
GEOTECHNICAL
STATE OF CALIFORNIA

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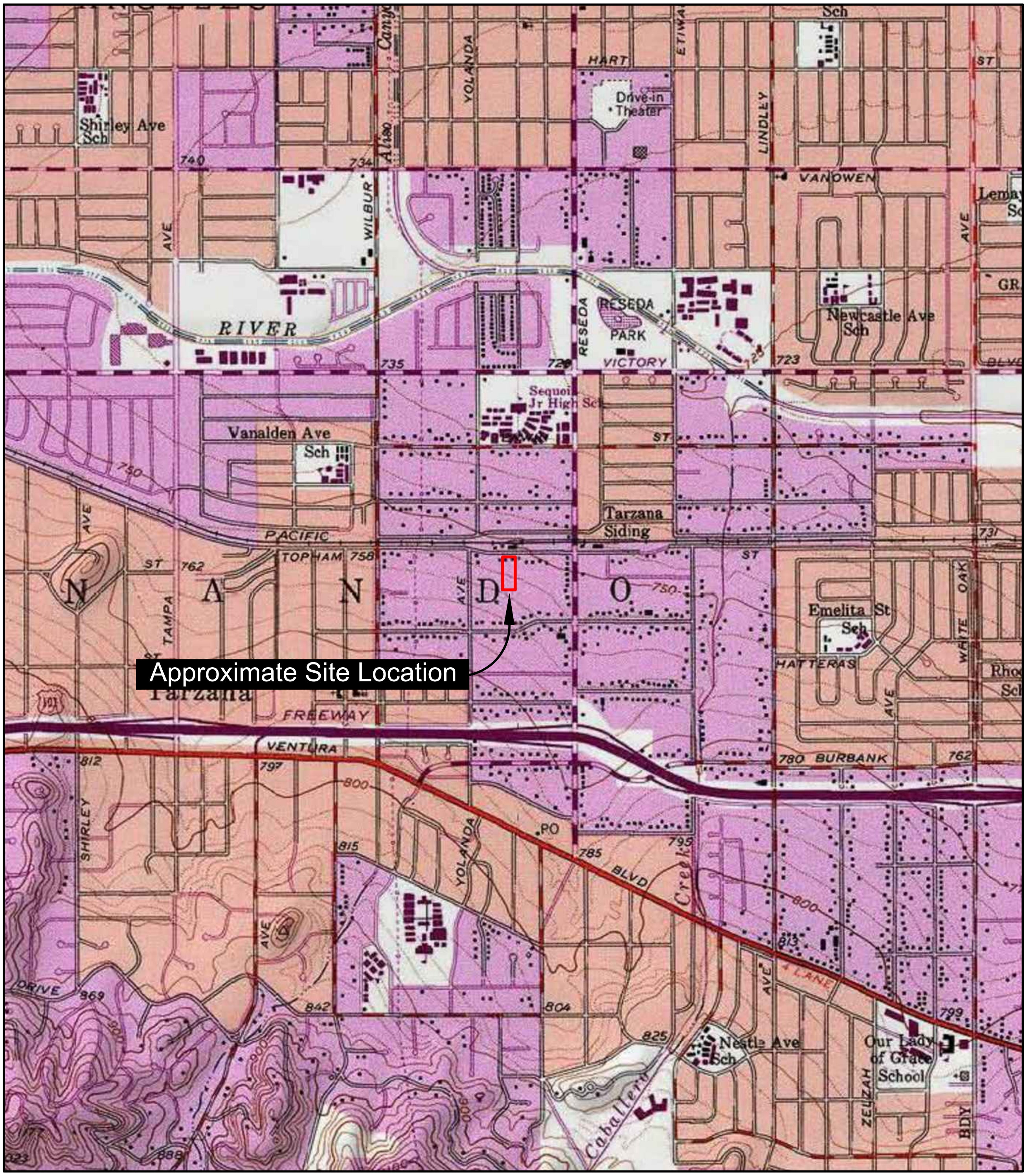


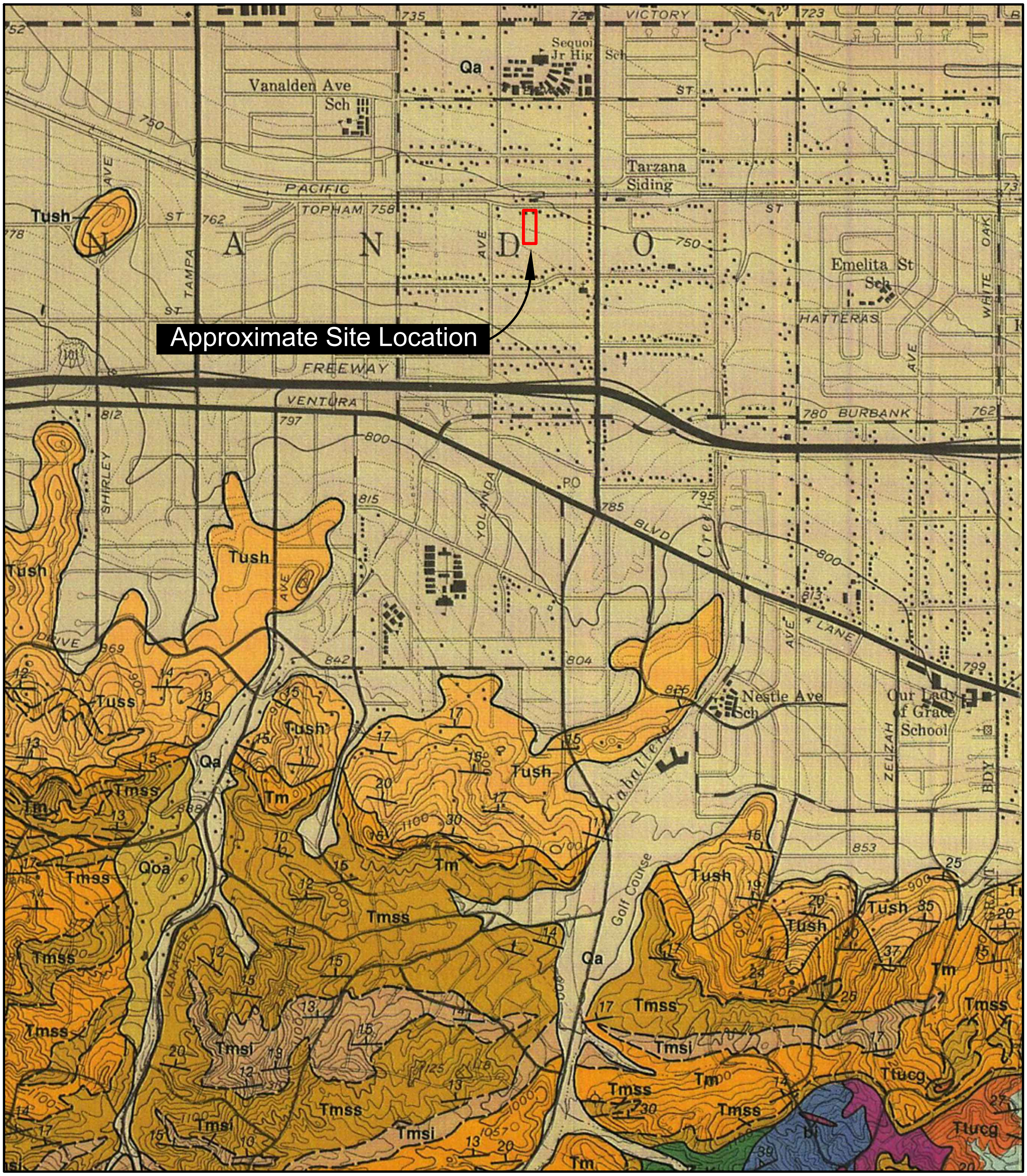
Source
United States Geological Survey, *Topanga and Canoga Park (South 1/2) Quadrangles, California-Los Angeles County*, 7.5 Minute Series (Topographic)

SITE VICINITY MAP

18618 Oxnard St.
Tarzana, CA 91356

Gorian & Associates, Inc.
Applied Earth Sciences

Job No: 3191-0-0-100			Date: June 2021
Scale: 1" = 2000'	Drawn by:		Figure 1
	Approved by:		



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Explanation

Qa - Alluvial gravel, sand, and clay of flood plains

REGIONAL GEOLOGIC MAP

18618 Oxnard St.
Tarzana, CA 91356

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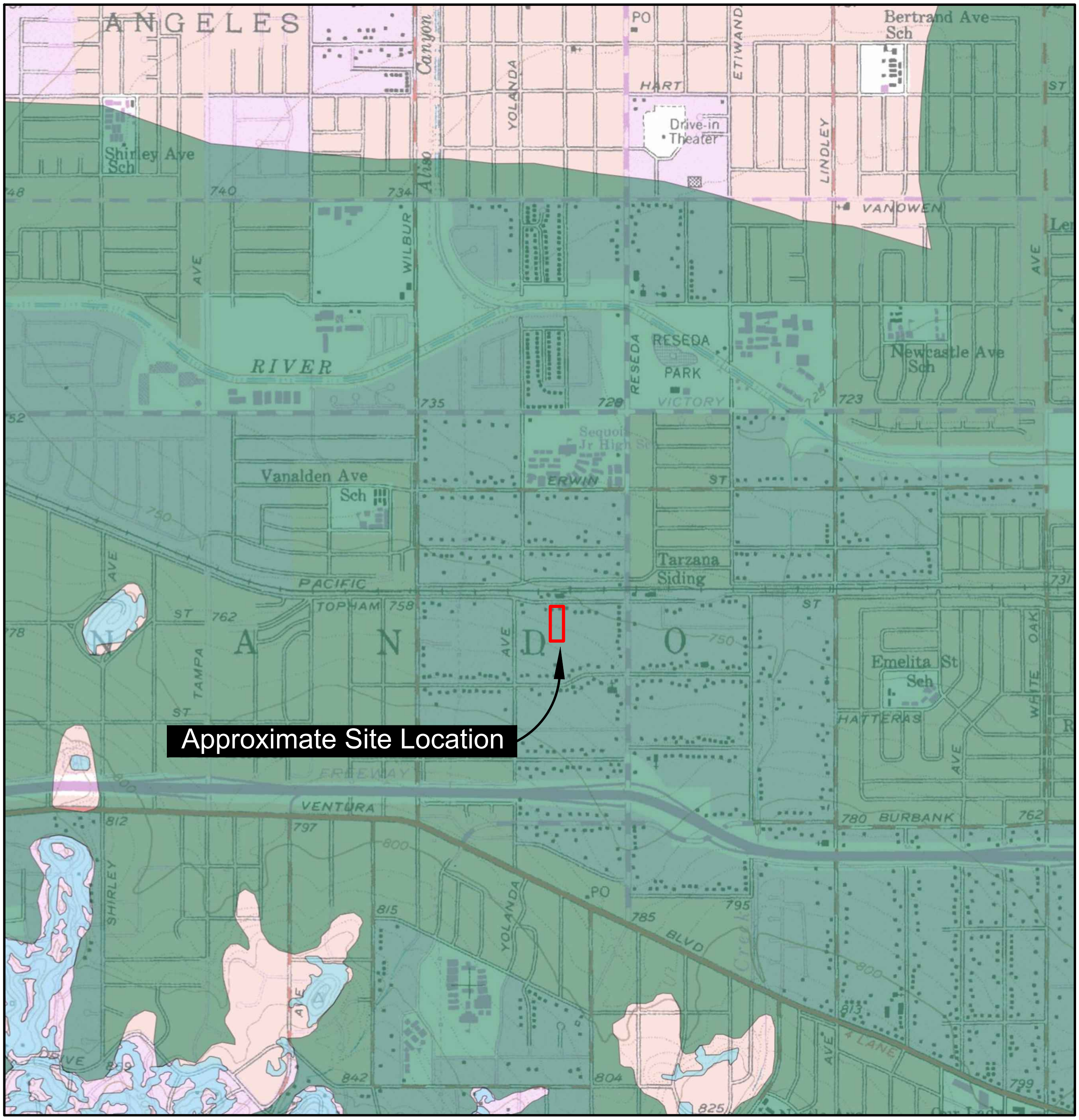
Applied Earth Sciences

Job No: 3191-0-0-100		Date: June 2021
Scale: 1" = 2000'	Drawn by: Approved by:	Figure 2



Explanation

Seismic Hazard Zone - Liquefaction

Seismic Hazard Zone - Earthquake Induced Landslide

Source
California Geological Survey, Seismic Hazard Zone Map, Canoga Park Quadrangle, Official Map Released February 1, 1998

SEISMIC HAZARD ZONE MAP

18618 Oxnard St.
Tarzana, CA 91356

Gorian & Associates, Inc.
Applied Earth Sciences

Job No: 3191-0-0-100		Date: June 2021
Scale: 1" = 2000'	Drawn by: Approved by:	Figure 3

APPENDIX A

LOGS OF SUBSURFACE DATA

Project: 18618 Oxnard Street, Tarzana

Work Order: 3191-0-0-100

SUBSURFACE LOG

Excavation Number: B-1

Page Number: 1

Date(s) Excavated 5/17/21	Logged By DM	Excavation Location See Geotechnical Map	Approximate Surface Elevation ±755
Excavation Dimension 8" Dia.	Equipment Contractor 2R Drilling, Inc.	Equipment Type Hollow Stem Auger	Hammer Data 140#, Auto, 30"

Elevation / Depth (ft.)	Bulk	Sample Type	Blow Counts	Moisture Content (% dry weight)	Dry Density (pcf)	USCS	Soil / Lithology	Description	Remarks
0								ASPHALTIC CONCRETE 3½"	
	■					CL		FILL: Yellowish brown sandy to silty CLAY, (moist, stiff).	
			3/4/5						
						ML		ALLUVIUM: Light yellowish brown clayey SILT (damp, stiff). Calcium carbonate veinlets.	
5			29	12.8	92				
			4/4/5						
						CL		Yellowish brown silty CLAY (damp, stiff). Calcium carbonate veinlets.	
						ML		Light yellowish brown clayey SILT, trace fine Sand (damp, stiff). Calcium carbonate veinlets.	
10			24	12.1	102				
			6/5/7						
15			30	12.7	108				
			8/10/10						
						CL		Dark yellowish brown silty CLAY, trace fine Sand (damp, stiff). Calcium carbonate veinlets.	
20			46	19.3	106				
			8/10/14						
						ML		Olive brown fine sandy and clayey SILT (damp, stiff). Iron oxide staining. Slightly micaceous.	
25			38	12.5	102				
			8/9/10						
30			39	12.5	103			At 30'; manganese oxide staining.	
						ML		Olive brown sandy SILT, trace Clay (damp, stiff). Iron oxide staining, calcium carbonate veinlets, and manganese oxide nodules. Micaceous.	
			11/19/20						
35			62	9.0	103				
						CL		Strong brown silty CLAY, trace fine Sand (moist, stiff). Manganese oxide nodules.	
			11/15/22						
40			50	15.4	111				

Elevation / Depth (ft.)	Bulk	Sample Type	Blow Counts	Moisture Content (% dry weight)	Dry Density (pcf)	USCS	Soil / Lithology	Description	Remarks
			11/ 15/ 22						
45			57	14.5	115				
			16/ 28/ 25			SM		Pale yellowish to light tannish brown silty fine to medium SAND (damp, dense).	
50			61	7.5	108				
								Total Depth 51' No Groundwater Encountered No Caving Observed Backfilled with cement slurry to 5' below ground surface. Topped with cuttings and Asphaltic Concrete patch.	
55									
60									
65									
70									
75									
80									
85									

Project: 18618 Oxnard Street, Tarzana

Work Order: 3191-0-0-100

SUBSURFACE LOG

Excavation Number: B-2

Page Number: 1

GORIAN & ASSOCIATES, INC.

Date(s) Excavated 5/18/21	Logged By DM	Excavation Location See Geotechnical Map	Approximate Surface Elevation ±755
Excavation Dimension 8" Dia.	Equipment Contractor 2R Drilling, Inc.	Equipment Type Hollow Stem Auger	Hammer Data 140#, Auto, 30"

Elevation / Depth (ft.)	Bulk	Sample Type	Blow Counts	Moisture Content (% dry weight)	Dry Density (pcf)	USCS	Soil / Lithology	Description	Remarks
0								ASPHALTIC CONCRETE 4"	S:M:C
						CL		FILL: Yellowish brown silty to sandy CLAY (moist, stiff).	
			16	14.6	96				
						ML-SM		ALLUVIUM: Yellowish brown clayey SILT with fine SAND (damp, stiff). Calcium carbonate veinlets.	
5			3/5/8						
			28	7.4	103				
10			10/13/12						
						ML		Light tannish brown fine sandy SILT, trace clay (damp, stiff).	
						ML/CL		Yellowish brown very clayey SILT (damp, stiff). Calcium carbonate veinlets.	30:46:24
			13	12.6	90				
15			9/11/14						
						CL		Dark yellowish brown silty CLAY (damp, stiff). Calcium carbonate veinlets.	
			37	8.4	115				
20			10/10/13						
			31	11.3	97				
						ML		Olive brown clayey SILT, trace fine Sand (damp, stiff). Micaceous.	
25			10/13/15						
			66/10"	6.9	104			At 28'; thin fine to coarse gravel layer.	
30			18/20/26						
						SM		Pale tannish brown silty fine to coarse SAND, trace fine gravel (damp, dense).	
						CL		Strong brown silty CLAY, trace fine Sand (damp, very stiff).	
35			11/16/18						
						ML		Olive brown to strong brown clayey SILT, trace fine Sand (damp, very stiff). Micaceous, calcium carbonate veinlets	
40			18/24/						

Project: 18618 Oxnard Street, Tarzana

Work Order: 3191-0-0-100

SUBSURFACE LOG

Excavation Number: B-2

Page Number: 2

Elevation / Depth (ft.)	Bulk	Sample Type	Blow Counts	Moisture Content (% dry weight)	Dry Density (pcf)	USCS	Soil / Lithology	Description	Remarks
			23						
45			19/ 23/ 28						
50			17/ 21/ 43					At 51'; thin fine gravel layer.	
								Total Depth 51½' No Groundwater Encountered No Caving Observed Backfilled with cement slurry to 5' below ground surface. Topped with cuttings and Asphaltic Concrete patch.	
55									
60									
65									
70									
75									
80									
85									

GORIAN & ASSOCIATES, INC.

Project: 18618 Oxnard Street, Tarzana

Work Order: 3191-0-0-100

SUBSURFACE LOG

Excavation Number: B-3

Date(s) Excavated 5/18/21	Logged By DM	Excavation Location See Geotechnical Map	Approximate Surface Elevation ±756
Excavation Dimension 8" Dia.	Equipment Contractor 2R Drilling, Inc.	Equipment Type Hollow Stem Auger	Hammer Data 140#, Auto, 30"

Elevation / Depth (ft.)	Blow Counts	Moisture Content (% dry weight)	Dry Density (pcf)	USCS	Description	Remarks
0				CL	ASPHALTIC CONCRETE 3½" FILL: Dark yellowish brown silty CLAY, trace fine to medium Sand (moist, medium stiff).	G:S:M:C
	3/2/2	13.1	100	ML-SM	ALLUVIUM: Yellowish brown clayey SILT with fine SAND (moist, medium stiff). Micaceous, calcium carbonate veinlets. At 5'; becoming damp.	
5	10					
	4/3/4					
10	13	10.2	101			
	4/2/4			CL	Dark yellowish brown silty CLAY, trace fine Sand (damp, medium stiff). Micaceous, calcium carbonate veinlets.	
15	18	15.4	111			
	5/7/13			SM	Tannish brown to olive brown silty to clayey fine to coarse SAND, trace fine gravel (damp, medium dense).	18:61:16:5
20	36	13.9	97			
	5/7/16			CL	Dark yellowish brown very silty CLAY, trace fine Sand (moist, stiff). Micaceous, caliche.	
25	33	12.1	113	ML	Strong brown fine sandy SILT, trace Clay (moist, stiff). Micaceous.	
	17/20/20			SC/SM	Strong brown clayey to silty fine to coarse SAND, trace fine gravels (moist, dense).	
30	43	6.9	111			
				CL	Strong brown to yellowish brown silty CLAY, trace fine to coarse Sand (moist, stiff). Micaceous, manganese oxide staining.	
35	9/17/21					
				CL	Strong brown silty to sandy CLAY (moist, stiff). Micaceous, manganese oxide nodoules.	
40	12/16/					

Project: 18618 Oxnard Street, Tarzana

Work Order: 3191-0-0-100

SUBSURFACE LOG

Excavation Number: B-3

Elevation / Depth (ft.)	Bulk	Sample Type	Blow Counts	Moisture Content (% dry weight)	Dry Density (pcf)	USCS	Soil / Lithology	Description	Remarks
			15						
45			7/9/14			ML/CL		Yellowish brown clayey SILT to silty CLAY (moist, stiff). Micaceous, manganese oxide nodules.	
50			15/16/15			ML		Yellowish brown fine sandy to clayey SILT (moist, stiff). Micaceous, manganese oxide nodules.	
								Total Depth 51½' No Groundwater Encountered No Caving Observed Backfilled with cement slurry to 5' below ground surface. Topped with cuttings and Asphaltic Concrete patch.	
55									
60									
65									
70									
75									
80									
85									

Project: 18618 Oxnard Street, Tarzana

Work Order: 3191-0-0-100

SUBSURFACE LOG

Excavation Number: B-4

Date(s) Excavated 5/17/21	Logged By DM	Excavation Location See Geotechnical Map	Approximate Surface Elevation ±758
Excavation Dimension 8" Dia.	Equipment Contractor 2R Drilling, Inc.	Equipment Type Hollow Stem Auger	Hammer Data 140#, Auto, 30"

Elevation / Depth (ft.)	Bulk / Sample Type	Blow Counts	Moisture Content (% dry weight)	Dry Density (pcf)	USCS	Description	Remarks
0						ASPHALTIC CONCRETE 4"	S:M:C
	Bulk				CL	FILL: Dark yellowish brown sandy and silty CLAY (moist, medium stiff).	
	Sample	2/2/2					
					CL	ALLUVIUM: Yellowish brown sandy to silty CLAY (moist, medium stiff). Calcium carbonate stringers.	
5	Sample	7	12.2	101	ML-SM	Yellowish brown sandy SILT to silty fine to medium SAND, trace Clay (moist, medium stiff to medium dense). Calcium carbonate stringers.	
	Sample	3/4/5			SM-ML	Yellowish brown very silty to fine to medium SAND (damp, medium dense). Calcium carbonate veinlets.	52:34:14
10	Sample	25	9.4	111			
	Sample	8/11/12			SM	Tannish brown silty fine SAND (damp, medium dense).	
					SM	Pale tannish brown silty fine to coarse SAND (damp, medium dense).	
15	Sample	19	10.5	97			
					ML	Yellowish brown clayey SILT with fine to medium Sand (damp, stiff).	
	Sample	7/9/9				At 17½'; calcium carbonate veinlets.	
20	Sample	29	6.4	107			
	Sample	8/12/12					
					CL	Dark yellowish brown silty CLAY, trace fine to medium SAND (damp, very stiff). Micaceous, calcium carbonate veinlets.	
25	Sample	47	13.2	114			
	Sample	9/12/11					
30	Sample	38	6.8	105	ML	Olive brown fine sandy SILT, trace clay (damp, stiff). Micaceous.	
	Sample	12/17/28					
					SM	At tip of sampler; Olive brown silty fine to coarse SAND, fine gravel (damp, dense). Micaceous.	
35	Sample	32	5.1	105			
					ML	Olive brown fine sandy SILT, trace Clay (damp, stiff). Micaceous, manganese oxide nodules.	
					SM	Pale tannish brown silty fine to coarse SAND (damp, very dense). Iron oxide staining.	
	Sample	26/33/28					
40	Sample	42	7.0	104			
					CL	Strong brown sandy to silty CLAY, trace fine to coarse gravels (moist,	

Elevation / Depth (ft.)	Bulk	Sample Type	Blow Counts	Moisture Content (% dry weight)	Dry Density (pcf)	USCS	Soil / Lithology	Description	Remarks
								stiff).	
			6/10/ 13			CL		Strong brown silty CLAY, trace fine Sand (moist, stiff). Manganese oxide nodules. Micaceous.	
45			42	16.6	110				
			13/ 16/ 20					At 47½'; calcium carbonate veinlets.	
50			43	18.0	111				
								Total Depth 51' No Groundwater Encountered No Caving Observed Backfilled with cement slurry to 5' below ground surface. Topped with cuttings and Asphaltic Concrete patch.	
55									
60									
65									
70									
75									
80									
85									

Project: 18618 Oxnard Street, Tarzana

Work Order: 3191-0-0-100

SUBSURFACE LOG

Excavation Number: B-5

Date(s) Excavated 5/17/21	Logged By DM	Excavation Location See Geotechnical Map	Approximate Surface Elevation ±758
Excavation Dimension 8" Dia.	Equipment Contractor 2R Drilling, Inc.	Equipment Type Hollow Stem Auger	Hammer Data 140#, Auto, 30"

Elevation / Depth (ft.)	Blow Counts	Moisture Content (% dry weight)	Dry Density (pcf)	USCS	Description	Remarks
0					ASPHALTIC CONCRETE 4"	G:S:M:C
	8	12.7	99	CL	FILL: Dark yellowish brown silty CLAY, trace fine to coarse Sand (moist, medium stiff).	
5	2/3/3			ML-SM	ALLUVIUM: Yellowish brown clayey SILT with fine SAND (moist, medium stiff). Calcium carbonate veinlets.	1:37:41:21
	9	14.5	104			
10	4/4/6				At 10'; becoming stiff.	1:47:35:18
	10	10.0	98			
15	3/4/4					
				CL	Dark yellowish brown silty CLAY, trace fine Sand (moist, medium dense). Caliche .	
	14	8.7	104	ML	Dark yellowish brown clayey SILT (damp, medium stiff). Caliche.	
20	8/13/16			CL	Dark yellowish brown silty CLAY, trace fine to medium Sand (damp, stiff).	
	21	12.3	115	ML	Dark brown clayey SILT, trace fine Sand (damp, stiff). Manganese oxide nodules.	
25	7/5/10			CL	Dark yellowish brown silty CLAY, trace fine SAND (moist, stiff).	
	10	13.3	101	ML	Dark yellowish to dark olive brown fine sandy to clayey SILT (moist, stiff). Micaceous. At 28'; becoming dark yellowish brown with calcium carbonate veinlets.	
30	3/4/6			CL	Dark olive brown to olive brown sandy to silty CLAY (moist, stiff). Micaceous, manganese oxide nodules, iron oxide staining.	@30': LL = 35 PL = 22 PI = 13
				CL	Strong brown to olive brown very silty CLAY, trace fine Sand (moist, very stiff). Micaceous.	
35	9/14/20					
				ML	Strong brown clayey to sandy SILT (moist, very stiff).	
40	14/21/					

Project: 18618 Oxnard Street, Tarzana

Work Order: 3191-0-0-100

SUBSURFACE LOG

Excavation Number: B-5

Elevation / Depth (ft.)	Bulk	Sample Type	Blow Counts	Moisture Content (% dry weight)	Dry Density (pcf)	USCS	Soil / Lithology	Description	Remarks
			24						
45			6/9/ 10			CL		Strong brown very silty CLAY, trace fine Sand (moist, very stiff). Micaceous.	
50								Total Depth 46½' No Groundw Water Encountered No Caving Observed Backfilled with cement slurry to 5' below ground surface. Topped with cuttings and Asphaltic Concrete patch.	
55									
60									
65									
70									
75									
80									
85									

APPENDIX B

LABORATORY TESTING

General
Laboratory test results on selected samples are presented below. Test were performed to evaluate the physical and engineering properties of the encountered earth materials, including in-situ moisture content and dry density, optimum moisture-maximum dry density relationships, expansion potential, consolidation characteristics, grain size determination, and shear strength parameters. Soil corrosivity testing was performed under subcontract by a corrosion engineer.

Field Density and Moisture Tests
In-situ dry density and moisture content were determined from the relatively undisturbed drive samples obtained during exploratory operations. The test results and a detailed description of the earth materials encountered are shown on the attached Logs of Subsurface Data, Appendix A.

Optimum Moisture-Maximum Density Curve
Maximum density/optimum moisture tests (compaction characteristics) were performed on two selected bulk samples of the encountered materials. The results are as follows:

Sample	Visual Soil Classification	Maximum Dry Density (pcf)	Optimum Moisture Content (%)
B-1 @ 1'	Fill, yellowish brown sandy to silty Clay	121.4	11.2
B-3 @ 1'	Fill, dark yellowish brown clayey Silt with fine sand	122.9	11.3

Soil Expansion Test
An Expansion Index test was performed on a selected bulk sample of the encountered materials. The results are as follows:

Sample	Expansion Index	Expansion Index Range	Expansion Potential
B-3 @ 1'	58	51-90	Moderate

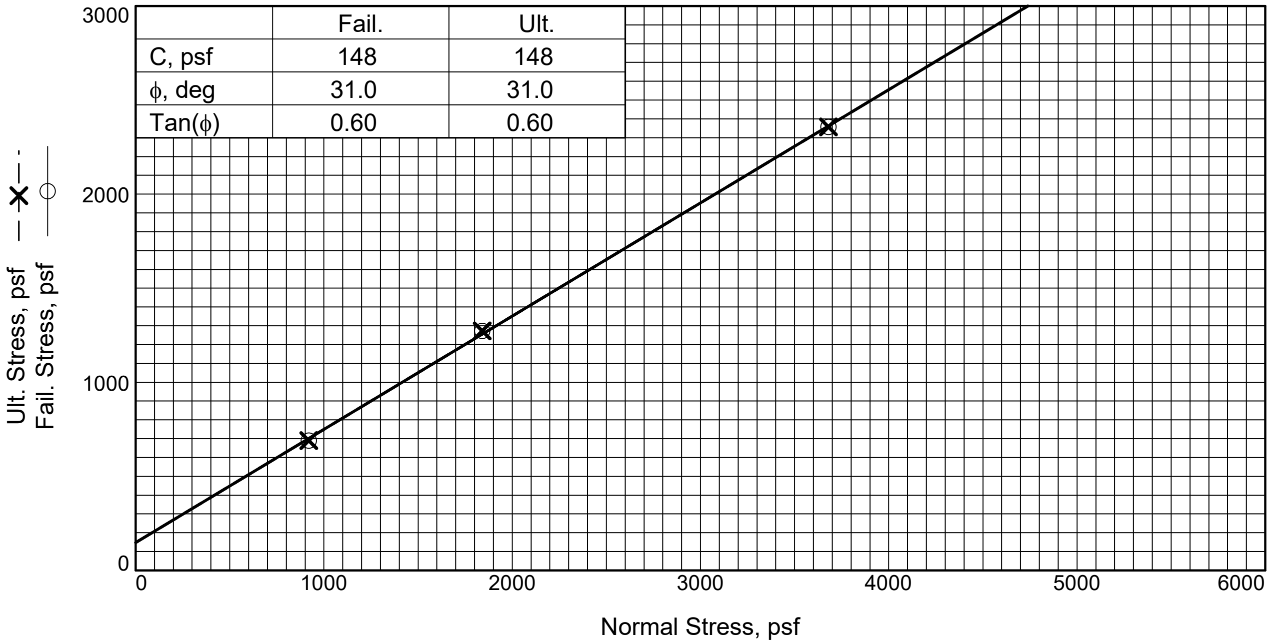
Direct Shear Tests
Strain controlled direct shear testing was performed on two relatively undisturbed sample and one remolded sample. The sample sets were saturated prior to shearing under axial loads ranging from 920 to 3,680 psf. The shear strength results are presented as graphic summaries.

Load Consolidation Tests
A load consolidation tests were performed on three relatively undisturbed sample. Test loads were added in increments to a maximum of 8,000 psf. Water was added at a load approximating existing overburden stresses to study the effect of moisture infiltration on potential consolidation behavior. The results are presented as graphic summaries.

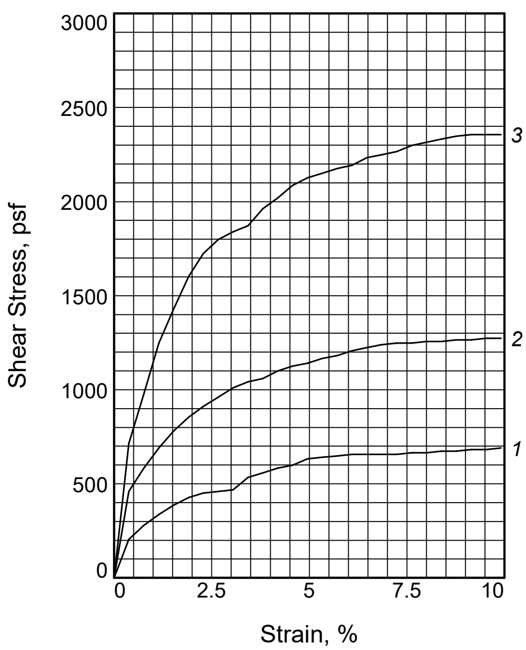
Grain Size Distribution
Grain size distribution analyses were performed on six samples obtained from the borings. The grain size was evaluated by hydrometer analysis using 50-gram samples. The percentage sand, percentage silt, and percentage clay were evaluated. The percentage of clay was assumed to be all particles finer than 0.002 mm. The results are attached as graphic summaries.

Atterberg Limits
The liquid and plastic limits were determined in general accordance with ASTM test method D4318 for a sample obtained from the exploratory borings. The results are attached as graphic summaries.

Corrosion Testing
A sample of the upper soils was submitted to Project X Corrosion Engineering for soil corrosion testing for which the results are presented in the letter contained in this appendix.



	Fail.	Ult.
C, psf	148	148
ϕ, deg	31.0	31.0
Tan(ϕ)	0.60	0.60



	Sample No.	1	2	3
Initial	Water Content, %	N/A	N/A	N/A
	Dry Density, pcf	N/A	N/A	N/A
	Saturation, %	N/A	N/A	N/A
	Void Ratio	N/A	N/A	N/A
	Diameter, in.	2.63	2.63	2.63
	Height, in.	1.00	1.00	1.00
At Test	Water Content, %	29.9	29.9	29.9
	Dry Density, pcf			
	Saturation, %			
	Void Ratio			
	Diameter, in.			
	Height, in.			
	Normal Stress, psf	920	1840	3680
	Fail. Stress, psf	690	1273	2357
	Strain, %	9.9	9.9	9.9
	Ult. Stress, psf	690	1273	2357
	Strain, %	9.9	9.9	9.9
	Strain rate, in./min.	0.020	0.020	0.020

Sample Type: Relatively Undisturbed
Description: Clayey SILT

Specific Gravity=
Remarks: 6/3/21

Figure ________

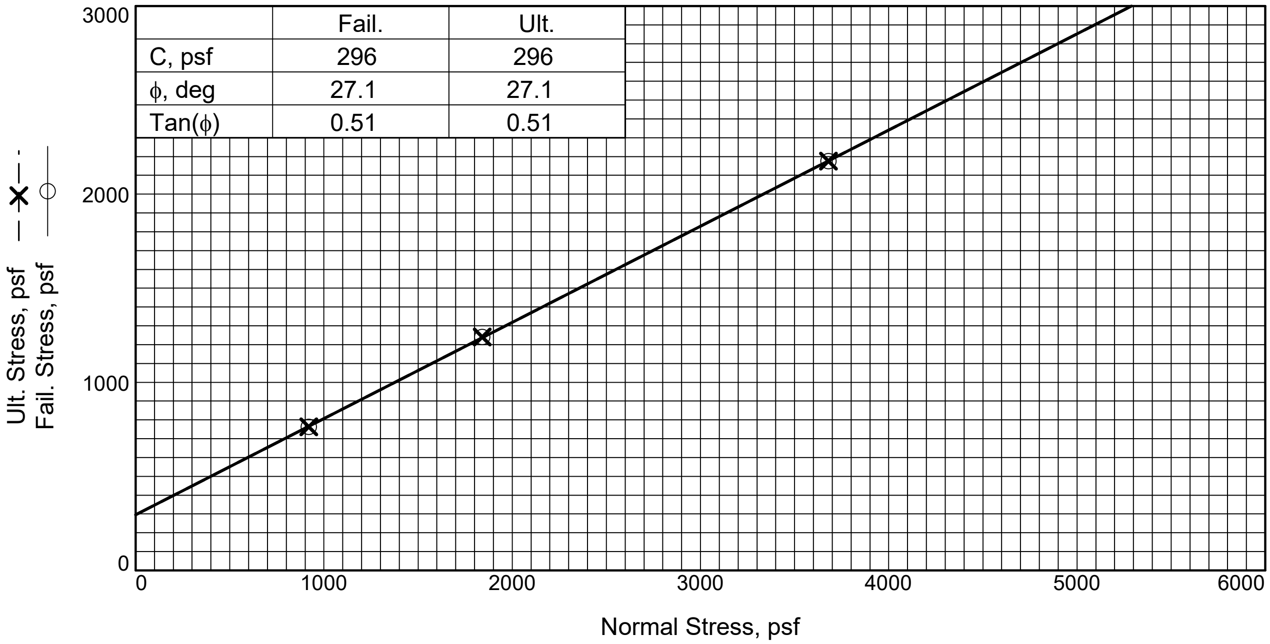
Client: Palatine Capital

Project: 18618 Oxnard St. Tarzana

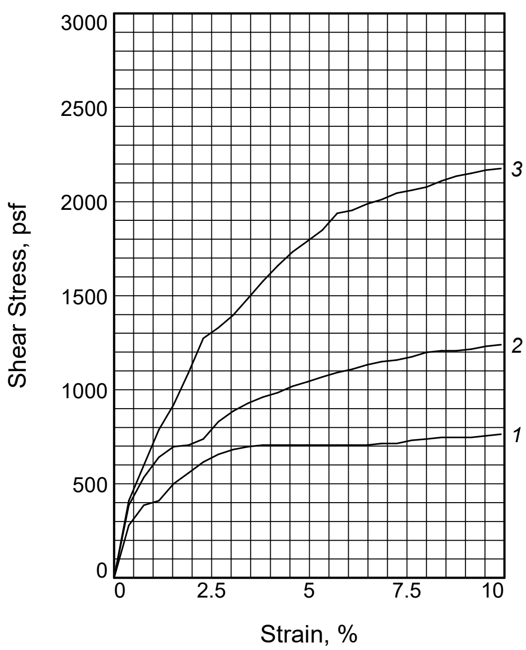
Location: B-1
Depth: 5'
Proj. No.: 3191-0-0-1000 **Date Sampled:**

DIRECT SHEAR TEST REPORT
Gorian & Associates
Thousand Oaks, CA

Tested By: CA



	Fail.	Ult.
C, psf	296	296
ϕ, deg	27.1	27.1
Tan(ϕ)	0.51	0.51



Sample No.		1	2	3
Initial	Water Content, %	N/A	N/A	N/A
	Dry Density, pcf	N/A	N/A	N/A
	Saturation, %	N/A	N/A	N/A
	Void Ratio	N/A	N/A	N/A
	Diameter, in.	2.63	2.63	2.63
	Height, in.	1.00	1.00	1.00
At Test	Water Content, %	24.7	24.7	24.7
	Dry Density, pcf			
	Saturation, %			
	Void Ratio			
	Diameter, in.			
	Height, in.			
Normal Stress, psf		920	1840	3680
Fail. Stress, psf		764	1240	2176
Strain, %		9.9	9.9	9.9
Ult. Stress, psf		764	1240	2176
Strain, %		9.9	9.9	9.9
Strain rate, in./min.		0.020	0.020	0.020

Sample Type: Relatively Undisturbed
Description: Clayey SILT

Specific Gravity=
Remarks: 6/2/21

Figure ________

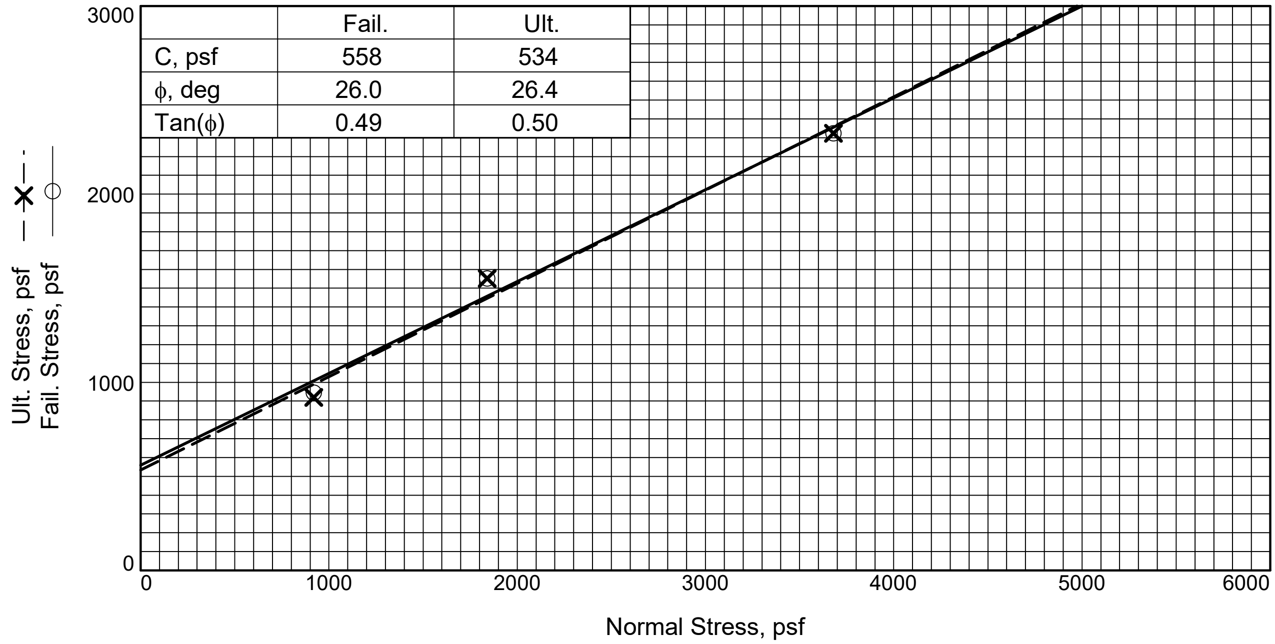
Client: Palatine Capital

Project: 18618 Oxnard St. Tarzana

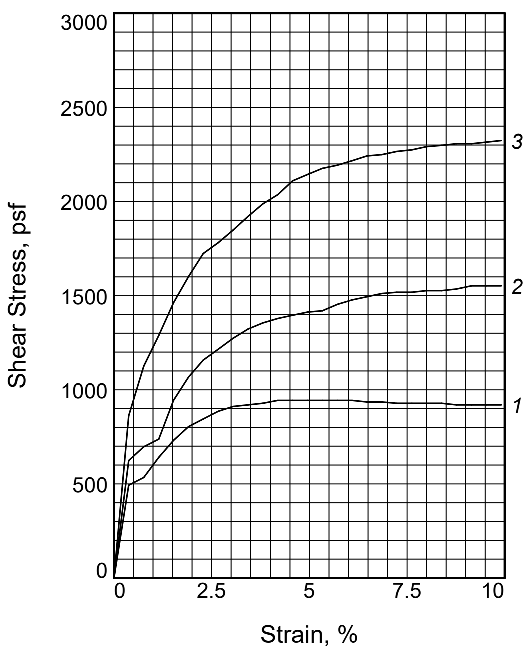
Location: B-5
Depth: 7.5'
Proj. No.: 3191-0-0-1000 **Date Sampled:**

DIRECT SHEAR TEST REPORT
Gorian & Associates
Thousand Oaks, CA

Tested By: CA



	Fail.	Ult.
C, psf	558	534
ϕ, deg	26.0	26.4
Tan(ϕ)	0.49	0.50



	Sample No.	1	2	3
Initial	Water Content, %	N/A	N/A	N/A
	Dry Density, pcf	N/A	N/A	N/A
	Saturation, %	N/A	N/A	N/A
	Void Ratio	N/A	N/A	N/A
	Diameter, in.	2.63	2.63	2.63
	Height, in.	1.00	1.00	1.00
At Test	Water Content, %	19.0	19.0	19.0
	Dry Density, pcf			
	Saturation, %			
	Void Ratio			
	Diameter, in.			
	Height, in.			
	Normal Stress, psf	920	1840	3680
	Fail. Stress, psf	944	1552	2324
	Strain, %	6.1	9.9	9.9
	Ult. Stress, psf	920	1552	2324
	Strain, %	9.9	9.9	9.9
	Strain rate, in./min.	0.020	0.020	0.020

Sample Type: Remolded to 90%
Description: Silty CLAY w/ Trace Sand

Specific Gravity=
Remarks: 6/3/21

Figure ________

Client: Palatine Capital

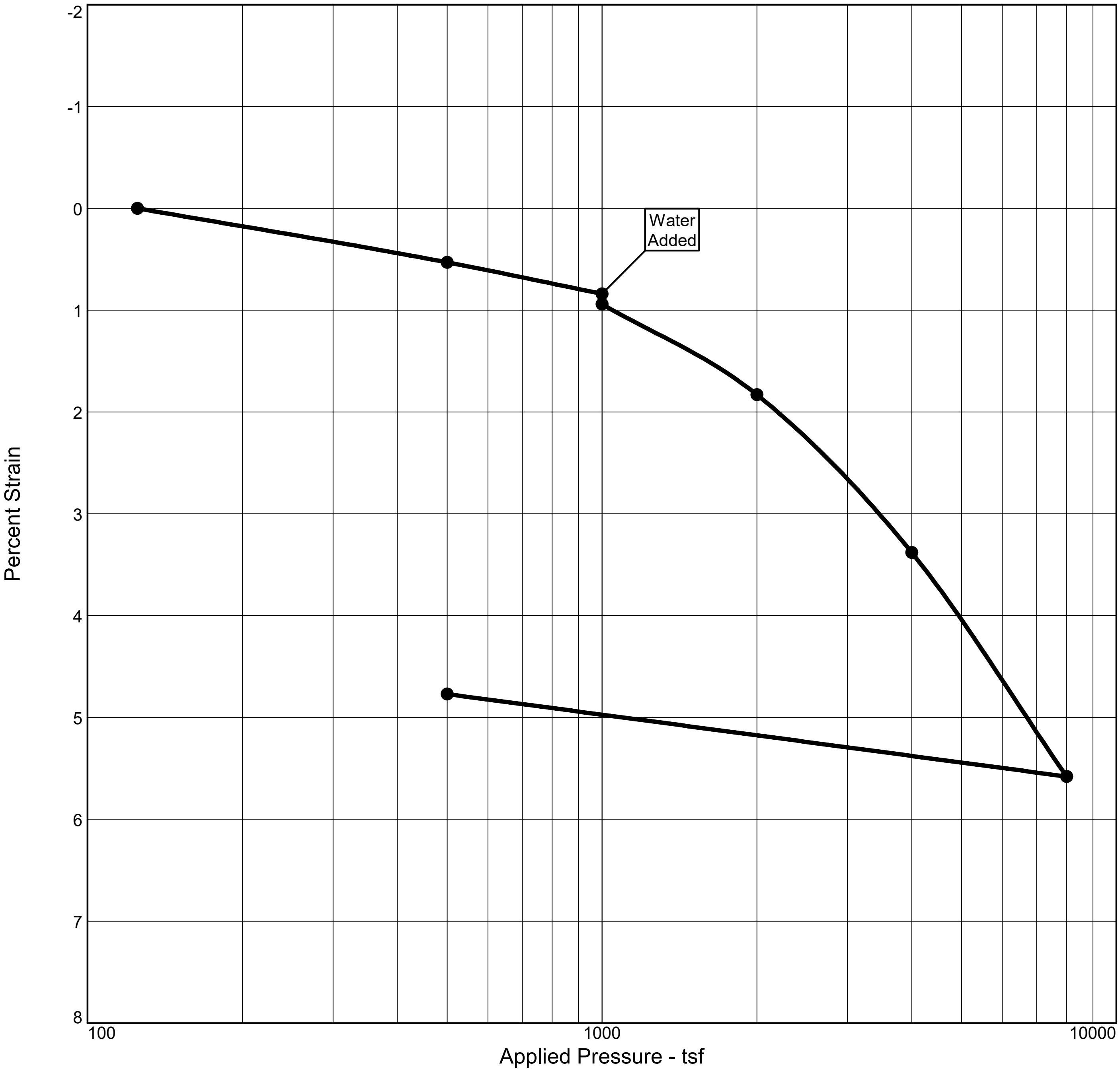
Project: 18618 Oxnard St. Tarzana

Location: B-3
Depth: 1'
Proj. No.: 3191-0-0-1000 **Date Sampled:**

DIRECT SHEAR TEST REPORT
Gorian & Associates
Thousand Oaks, CA

Tested By: CA

CONSOLIDATION TEST REPORT



Natural		Dry Dens. (pcf)	LL	PI	Sp. Gr.	Overburden (tsf)	P_c (tsf)	C_c	C_r	Swell Press. (tsf)	Clpse. %	e_o
Sat.	Moist.											
							2715.1				0.1	

MATERIAL DESCRIPTION	USCS	AASHTO
Clayey SILT		

Project No. 3191-0-0- **Client:** Palatine Capital

Project: 18618 Oxnard St. Tarzana

Depth: 7.5' **Sample Number:** B-2

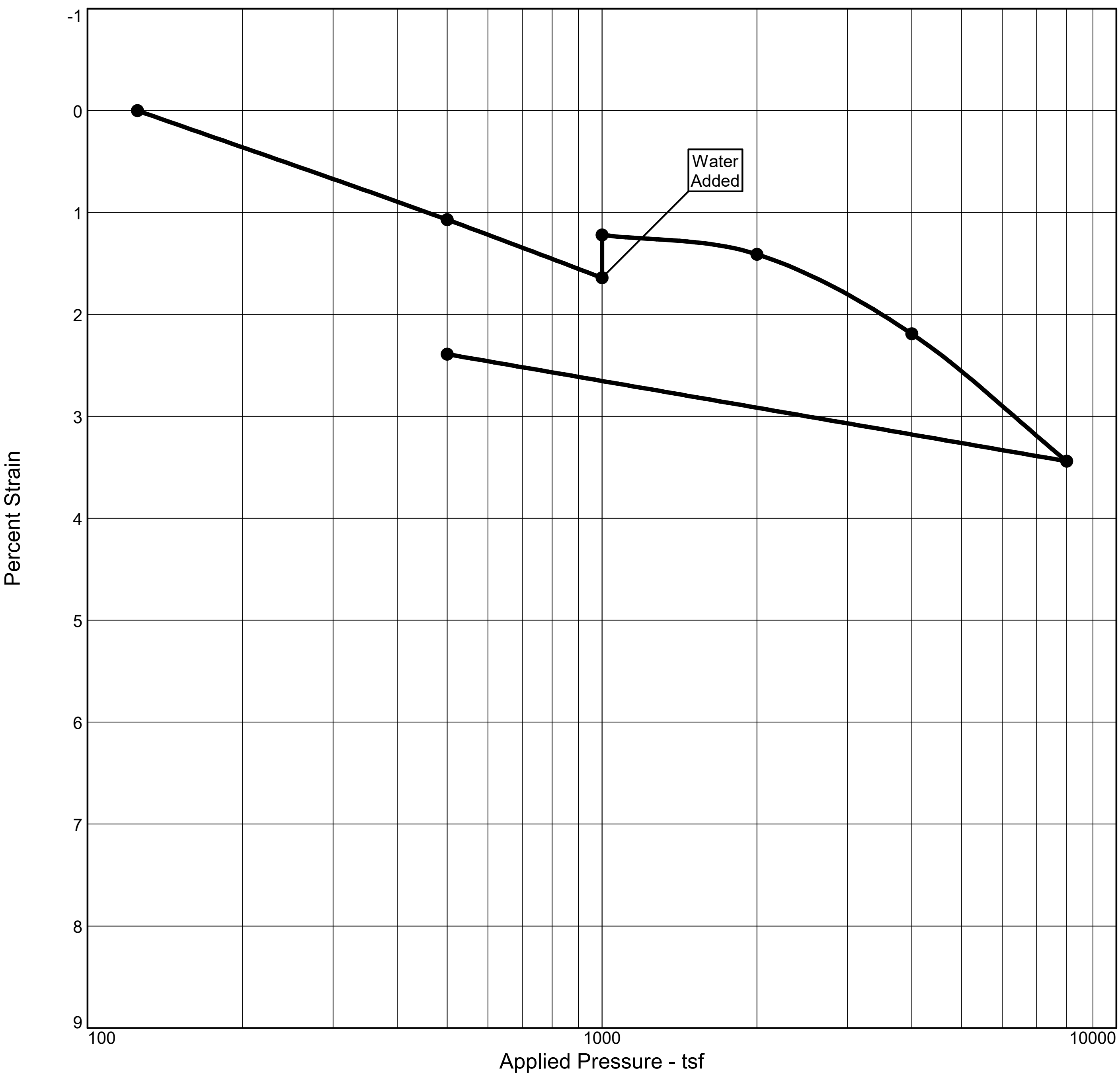
Gorian & Associates

Thousand Oaks, CA

Remarks:

Figure

CONSOLIDATION TEST REPORT



Natural		Dry Dens. (pcf)	LL	PI	Sp. Gr.	Overburden (tsf)	P_c (tsf)	C_c	C_r	Swell Press. (tsf)	Swell %	e_o
Sat.	Moist.											
							2761.2			2597.1	0.4	

MATERIAL DESCRIPTION	USCS	AASHTO
Silty CLAY		

Project No. 3191-0-0- **Client:** Palatine Capital

Project: 18618 Oxnard St. Tarzana

Depth: 15' **Sample Number:** B-3

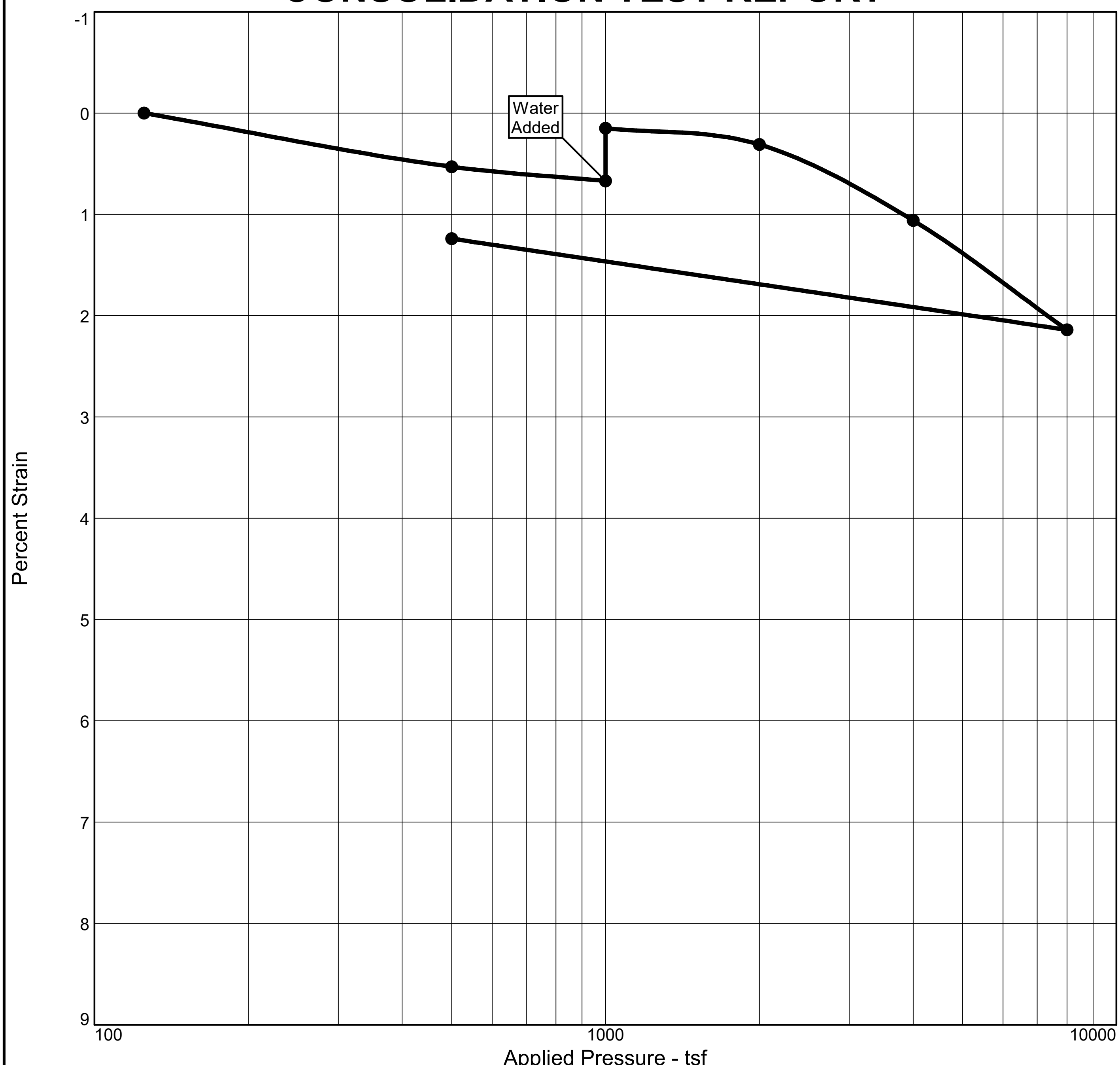
Gorian & Associates

Thousand Oaks, CA

Remarks:

Figure

CONSOLIDATION TEST REPORT



Natural		Dry Dens. (pcf)	LL	PI	Sp. Gr.	Overburden (tsf)	P_c (tsf)	C_c	C_r	Swell Press. (tsf)	Swell %	e_o
Sat.	Moist.											
							2555.0			2935.9	0.5	

MATERIAL DESCRIPTION	USCS	AASHTO
Sandy SILT		

Project No. 3191-0-0- **Client:** Palatine Capital

Project: 18618 Oxnard St. Tarzana

Depth: 10' **Sample Number:** B-4

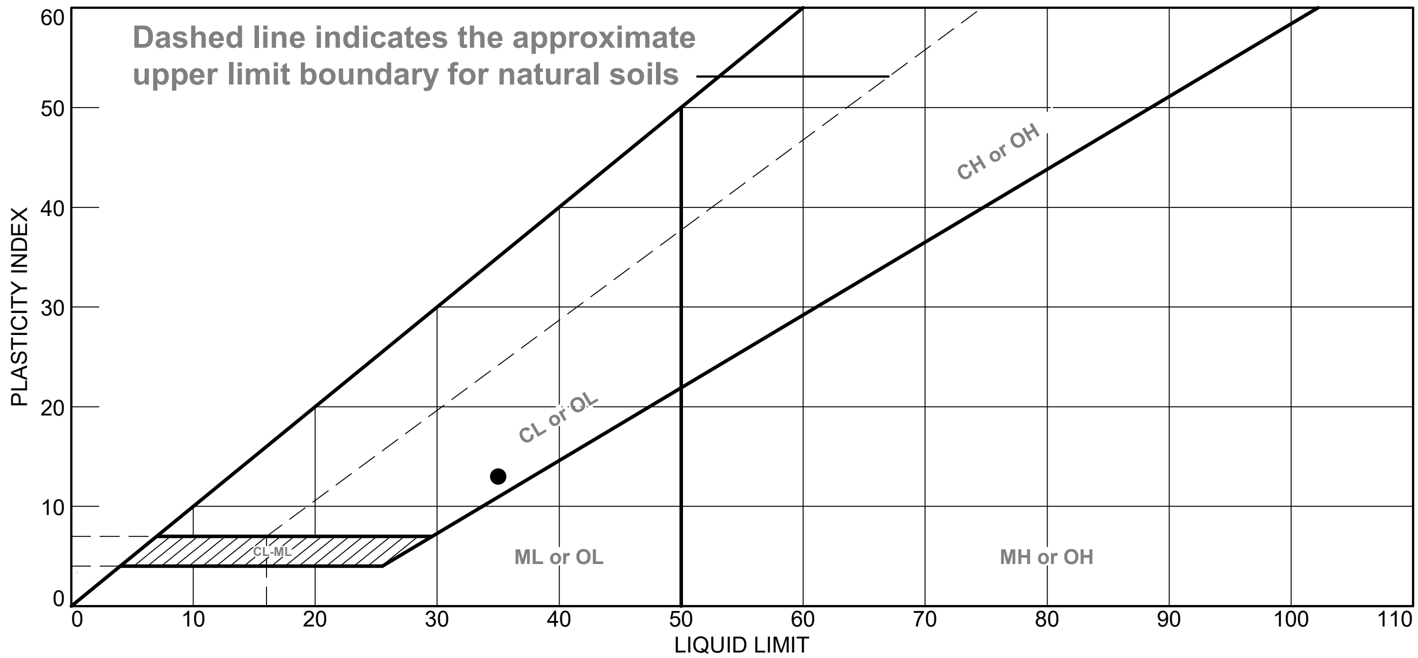
Gorian & Associates

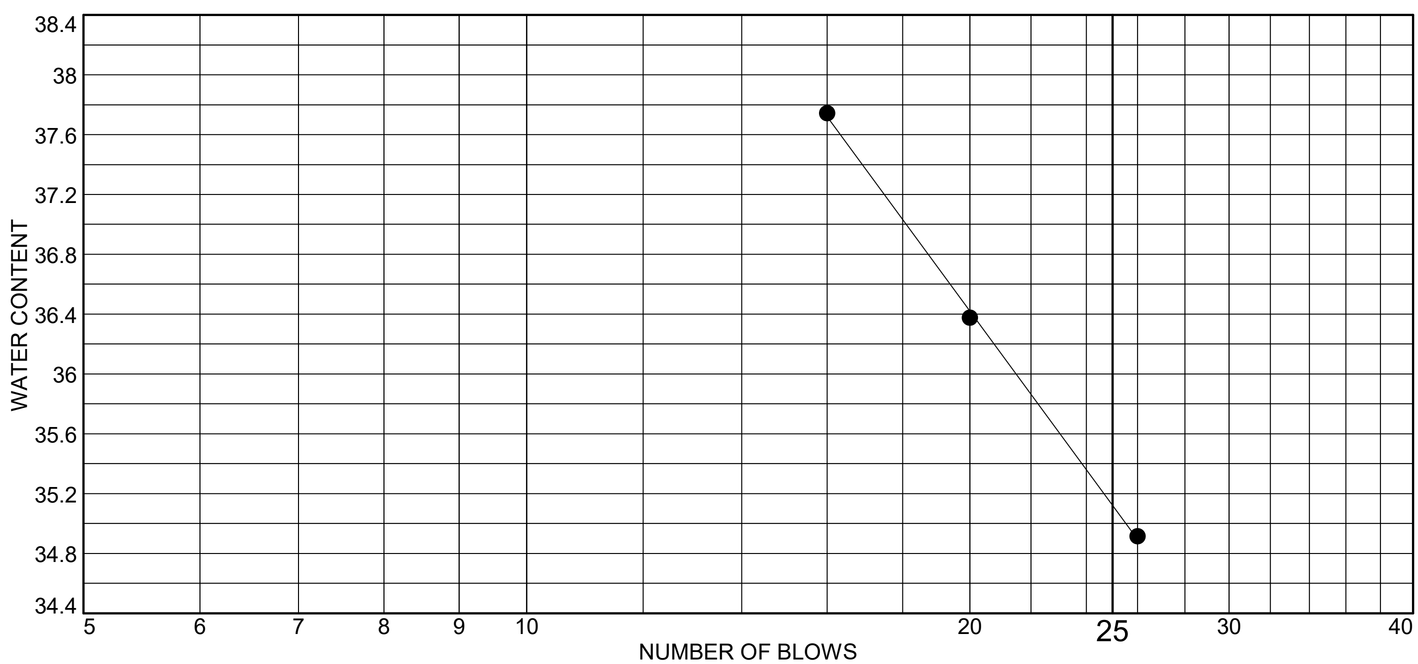
Thousand Oaks, CA

Remarks:

Figure

LIQUID AND PLASTIC LIMITS TEST REPORT





	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	Sandy to Silty CLAY	35	22	13			

Project No. 3191-0-0- **Client:** Palatine Capital

Project: 18618 Oxnard St. Tarzana

Location: B-5
Depth: 30'

Remarks:
● 6/1/21

Gorian & Associates

Thousand Oaks, CA

Figure

Tested By: CA

APPENDIX C

LIQUEFACTION ANALYSIS

CL

ML

SM

Silt Correction:
K=(1-FC)$^{0.75}$

Earthquake & Groundwater Information:
Magnitude = 6.7
Max. Acceleration = 0.861 g
Project GW = 15 ft
Maximum Settlement = 0.33 in
Settl. at Bottom of Footing = 0.33 in

Liquefaction: Boulanger & Idriss (2010-16)
Settl.: [dry] Pradel (1998); [sat] Idriss & Boulanger (2008)
Lateral spreading: Idriss & Boulanger (2008)
M correction: [Sand; Clay] Boulanger & Idriss(2004)
σv correction: Idriss & Boulanger (2008)
Stress reduction: Idriss & Boulanger (2008)

GORIAN & ASSOCIATES, INC.

Seismic Settlement Potential - SPT Data

Project:	Proposed Self-Storage		
Location:	18618 Oxnard St., Tarzana		
Project No.:	3191-0-0-100	Boring No.:	B-1
Figure:	1		

X:\3191-0-0 Palatine Capital Partners Acquisitions, LLC - 18618 Oxnard St. Tarzana\Seismic Settlement\GeoSuite_3191-0-0-100_B-1.csv

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Z_b (ft)	Z_m (ft)	γ (pcf)	N_{60}	FC(%)	CC(%)	USCS	φ (°)	C' (tsf)	σ_{v0} (tsf)	σ_{v0}' (tsf)	C_N	C_s	$(N_1)_{60}$	$(N_1)_{60cs}$	D_R (%)	V_s (ft/s)	G_0 (tsf)	σ_p' (tsf)	OCR_{G0}	S_u/σ_{v0}'	K_0	r_d	MSF	K_σ	K_α	$CSR_{7.5}$	$CRR_{7.5}$	FS	τ_{av} (tsf)	p (tsf)	G/G_0	γ_{max} (%)	ε_v (%)	ΔS_i	ΣS_i (in)
0.50	0.25	115.0	11.4	50.0	0.0	5	0.0	0.0	0.01	0.01	1.7	1.2	19.4	25.0		722.3	932.5	0.07	5.0	0.80	1.0	1.00	1.21	1.10	1.00	0.42	1.30		0.01	0.01	0.0000			0.00	0.33
1.00	0.75	115.0	11.4	50.0	0.0	5	0.0	0.0	0.04	0.04	1.7	1.2	19.4	25.0		718.3	922.0	0.22	5.0	0.80	1.0	1.00	1.21	1.10	1.00	0.42	1.30		0.02	0.04	0.0000			0.00	0.33
1.50	1.25	115.0	11.4	50.0	0.0	5	0.0	0.1	0.07	0.07	1.7	1.2	19.4	25.0		714.4	912.0	0.36	5.0	0.80	1.0	1.00	1.21	1.10	1.00	0.42	1.30		0.04	0.07	0.0000			0.00	0.33
2.00	1.75	115.0	11.4	50.0	0.0	5	0.0	0.1	0.10	0.10	1.7	1.2	19.4	25.0		710.7	902.6	0.50	5.0	0.80	1.0	1.00	1.21	1.10	1.00	0.42	1.30		0.06	0.10	0.0000			0.00	0.33
2.50	2.25	115.0	11.4	50.0	0.0	5	0.0	0.1	0.13	0.13	1.7	1.2	19.4	25.0		707.1	893.6	0.65	5.0	0.80	1.0	0.99	1.21	1.10	1.00	0.42	1.30		0.07	0.13	0.0000			0.00	0.33
3.00	2.75	115.0	11.4	50.0	0.0	5	0.0	0.1	0.16	0.16	1.7	1.2	19.4	25.0		703.7	885.0	0.79	5.0	0.80	1.0	0.99	1.21	1.10	1.00	0.42	1.30		0.09	0.16	0.0000			0.00	0.33
3.50	3.25	105.0	11.4	65.0	0.0	7	34.6	0.0	0.19	0.19	1.7	1.2	19.4	25.0	69.3	733.2	877.2	0.93	5.0		1.1	0.99	1.21	1.10	1.00	0.42	0.29		0.10	0.20	0.0349	0.021	0.0088	0.00	0.33
4.00	3.75	105.0	11.4	65.0	0.0	7	34.6	0.0	0.21	0.21	1.7	1.2	19.4	25.0	69.3	730.2	870.1	1.06	5.0		1.1	0.99	1.21	1.10	1.00	0.42	0.29		0.12	0.22	0.0339	0.026	0.0111	0.00	0.33
4.50	4.25	105.0	11.4	65.0	0.0	7	34.6	0.0	0.24	0.24	1.7	1.2	19.4	25.0	69.3	727.3	863.3	1.19	5.0		1.1	0.99	1.21	1.10	1.00	0.41	0.29		0.13	0.25	0.0380	0.032	0.0139	0.00	0.32
5.00	4.75	105.0	11.4	65.0	0.0	7	34.6	0.0	0.26	0.26	1.7	1.2	19.4	25.0	69.3	724.6	856.7	1.32	5.0		1.1	0.99	1.21	1.10	1.00	0.41	0.29		0.15	0.28	0.0421	0.038	0.0171	0.00	0.32
5.50	5.25	105.0	11.4	65.0	0.0	7	34.6	0.0	0.29	0.29	1.7	1.2	19.4	25.0	69.3	721.9	850.4	1.45	5.0		1.1	0.98	1.21	1.10	1.00	0.41	0.29		0.16	0.31	0.0432	0.045	0.0209	0.00	0.32
6.00	5.75	105.0	11.4	65.0	0.0	7	34.6	0.0	0.32	0.32	1.7	1.2	19.4	25.0	69.3	719.3	844.3	1.55	4.9		1.1	0.98	1.21	1.10	1.00	0.41	0.29		0.17	0.33	0.0441	0.053	0.0254	0.00	0.32
6.50	6.25	105.0	11.4	65.0	0.0	7	34.4	0.0	0.34	0.34	1.7	1.2	18.9	24.5	68.6	716.4	837.4	1.61	4.7		1.0	0.98	1.20	1.10	1.00	0.41	0.28		0.19	0.35	0.0449	0.064	0.0312	0.00	0.32
7.00	6.75	105.0	11.3	65.0	0.0	7	34.2	0.0	0.37	0.37	1.6	1.2	18.3	23.9	67.7	717.8	840.8	1.67	4.5		1.0	0.98	1.19	1.10	1.00	0.42	0.27		0.20	0.38	0.0456	0.072	0.0366	0.00	0.32
7.50	7.25	105.0	11.4	65.0	0.0	7	34.0	0.0	0.40	0.40	1.6	1.2	17.9	23.5	67.2	727.1	862.6	1.74	4.4		1.0	0.98	1.19	1.10	1.00	0.42	0.26		0.22	0.40	0.0464	0.077	0.0392	0.00	0.31
8.00	7.75	105.0	11.6	65.0	0.0	7	34.0	0.0	0.42	0.42	1.5	1.2	17.7	23.3	66.9	736.4	884.8	1.81	4.3		1.0	0.97	1.19	1.10	1.00	0.42	0.25		0.23	0.42	0.0471	0.080	0.0415	0.00	0.31
8.50	8.25	105.0	11.7	65.0	0.0	7	33.9	0.0	0.45	0.45	1.5	1.2	17.5	23.1	66.6	745.0	905.8	1.88	4.2		1.0	0.97	1.18	1.10	1.00	0.42	0.25		0.24	0.44	0.0478	0.084	0.0439	0.00	0.31
9.00	8.75	115.0	11.9	50.0	0.0	5	0.0	0.4	0.48	0.48	1.5	1.2	17.2	22.8		723.4	935.2	1.96	4.1	0.80	1.0	0.97	1.18	1.10	1.00	0.42	1.30		0.26	0.48	0.0000			0.00	0.31
9.50	9.25	115.0	12.0	50.0	0.0	5	0.0	0.4	0.50	0.50	1.4	1.2	17.0	22.6		732.8	959.6	2.03	4.0	0.80	1.0	0.97	1.18	1.10	1.00	0.42	1.30		0.27	0.50	0.0000			0.00	0.31
10.00	9.75	115.0	17.0	65.0	0.0	7	35.7	0.0	0.53	0.53	1.3	1.2	22.6	28.2	73.7	769.9	1,059.3	2.18	4.1		0.9	0.97	1.26	1.10	1.00	0.39	0.39		0.29	0.51	0.0694	0.074	0.0286	0.00	0.31
10.50	10.25	115.0	17.1	65.0	0.0	7	35.6	0.0	0.56	0.56	1.3	1.2	22.4	28.0	73.3	777.1	1,079.3	2.25	4.0		0.9	0.96	1.26	1.10	1.00	0.39	0.38		0.30	0.54	0.0745	0.077	0.0302	0.00	0.31
11.00	10.75	115.0	17.3	65.0	0.0	7	35.5	0.0	0.59	0.59	1.3	1.2	22.1	27.7	73.0	783.9	1,098.2	2.31	3.9		0.9	0.96	1.25	1.09	1.00	0.39	0.37		0.32	0.56	0.0795	0.080	0.0320	0.00	0.30
11.50	11.25	115.0	17.4	65.0	0.0	7	35.4	0.0	0.62	0.62	1.3	1.2	21.9	27.4	72.7	790.3	1,116.3	2.38	3.8		0.9	0.96	1.25	1.08	1.00	0.40	0.36		0.33	0.59	0.0846	0.084	0.0338	0.00	0.30
12.00	11.75	115.0	17.5	65.0	0.0	7	35.3	0.0	0.65	0.65	1.2	1.2	21.6	27.2	72.3	796.4	1,133.6	2.44	3.8		0.9	0.96	1.25	1.08	1.00	0.40	0.35		0.35	0.61	0.0897	0.087	0.0357	0.00	0.30
12.50	12.25	115.0	17.6	65.0	0.0	7	35.2	0.1	0.68	0.68	1.2	1.2	21.4	27.0	72.0	802.3	1,150.2	2.50	3.7		0.9	0.95	1.24	1.07	1.00	0.40	0.35		0.36	0.63	0.0948	0.090	0.0376	0.00	0.30
13.00	12.75	115.0	17.7	65.0	0.0	7	35.2	0.1	0.71	0.71	1.2	1.2	21.1	26.7	71.7	807.8	1,166.2	2.57	3.6		0.9	0.95	1.24	1.06	1.00	0.41	0.34		0.38	0.65	0.1000	0.093	0.0396	0.00	0.29
13.50	13.25	115.0	17.8	65.0	0.0	7	35.1	0.1	0.73	0.73	1.2	1.2	20.9	26.5	71.4	813.1	1,181.6	2.63	3.6		0.9	0.95	1.23	1.06	1.00	0.41	0.33		0.39	0.68	0.1051	0.097	0.0416	0.00	0.29
14.00	13.75	115.0	17.9	65.0	0.0	7	35.0	0.1	0.76	0.76	1.2	1.2	20.7	26.3	71.1	818.2	1,196.4	2.68	3.5		0.9	0.95	1.23	1.05	1.00	0.41	0.32		0.40	0.70	0.1102	0.100	0.0436	0.00	0.29
14.50	14.25	120.0	18.0	65.0	0.0	7	34.9	0.1	0.79	0.79	1.1	1.2	20.4	26.0	70.7	805.8	1,210.9	2.74	3.5		0.9	0.95	1.23	1.04	1.00	0.41	0.32		0.42	0.72	0.1396	0.103	0.0458	0.00	0.29
15.00	14.75	120.0	18.1	65.0	0.0	7	34.8	0.1	0.82	0.82	1.1	1.2	20.2	25.8	70.4	810.5	1,225.2	2.80	3.4		0.9	0.94	1.22	1.04	1.00	0.42	0.31		0.43	0.75	0.1454	0.107	0.0481	0.00	0.28
15.50	15.25	120.0	18.2	65.0	0.0	7	34.8	0.1	0.85	0.84	1.1	1.2	20.1	25.6	70.2	814.1	1,236.0	2.84	3.4		0.9	0.94	1.22	1.03	1.00	0.42	0.31	0.73	0.45	0.76		6.718	0.7075	0.04	0.24
16.00	15.75	120.0	18.3	65.0	0.0	7	34.8	0.1	0.88	0.86	1.1	1.2	20.0	25.6	70.2	816.6	1,243.6	2.87	3.3		0.9	0.94	1.22	1.03	1.00	0.43	0.31	0.71	0.46	0.78		7.023	0.7410	0.04	0.20
16.50	16.25	120.0	18.3	65.0	0.0	7	34.8	0.1	0.91	0.87	1.1	1.2	20.0	25.6	70.1	819.0	1,251.0	2.90	3.3		0.9	0.94	1.22	1.03	1.00	0.44	0.30	0.70	0.48	0.79		7.337	0.7755	0.05	0.15
17.00	16.75	120.0	18.4	65.0	0.0	7	34.7	0.1	0.94	0.89	1.1	1.2	19.9	25.5	70.0	821.4	1,258.3	2.93	3.3		0.8	0.93	1.22	1.03	1.00	0.44	0.30	0.68	0.49	0.80		7.661	0.8113	0.05	0.10
17.50	17.25	120.0	18.5	65.0	0.0	7	34.7	0.1	0.97	0.90	1.1	1.2	19.9	25.4	69.9	823.7	1,265.3	2.96	3.3		0.8	0.93	1.22	1.02	1.00	0.45	0.30	0.67	0.51	0.81		7.995	0.8485	0.05	0.05
18.00	17.75	120.0	18.6	65.0	0.0	7	34.7	0.1	1.00	0.92	1.1	1.2	19.8	25.4	69.9	826.0	1,272.3	2.99	3.3		0.8	0.93	1.22	1.02	1.00	0.46	0.30	0.66	0.52	0.82		8.340	0.8509	0.05	0.00
18.50	18.25	125.0	40.5	50.0	0.0	5	0.0	0.7	1.03	0.93	1.0	1.3	42.0	47.6		934.1	1,694.8	3.45	3.7	0.78	1.0	0.92	1.35	1.04	1.00	0.41	1.30		0.53	0.93				0.00	0.00
19.00	18.75	125.0	40.6	50.0	0.0	5	0.0	0.7	1.06	0.95	1.0	1.3	41.9	47.5		937.2	1,706.1	3.48	3.7	0.77	1.0	0.92	1.35	1.03	1.00	0.42	1.30		0.55	0.95				0.00	0.00
19.50	19.25	125.0	40.8	50.0	0.0	5	0.0	0.7	1.10	0.96	1.0	1.3	41.9	47.5		940.2	1,717.2	3.52	3.7	0.77	1.0	0.92	1.35	1.03	1.00	0.42	1.30		0.56	0.96				0.00	0.00
20.00	19.75	125.0	40.9	50.0	0.0	5	0.0	0.7	1.13	0.98	1.0	1.3	41.9	47.5		943.2	1,728.0	3.55	3.6	0.76	1.0	0.92	1.35	1.02	1.00	0.43	1.30		0.58	0.98				0.00	0.00
20.50	20.25	125.0	41.1	50.0	0.0	5	0.0	0.7	1.16	0.99	1.0	1.3	41.8	47.4		946.1	1,738.7	3.59	3.6	0.75	1.0	0.91	1.35	1.02	1.00	0.43	1.30		0.59	0.99				0.00	0.00
21.00	20.75	125.0	41.2	50.0	0.0	5	0.0	0.8	1.19	1.01	1.0	1.3	41.8	47.4		948.9	1,749.2	3.62	3.6	0.74	1.0	0.91	1.35	1.01	1.00	0.44	1.30		0.61	1.01				0.00	0.00
21.50	21.25	125.0	41.3	50.0	0.0	5	0.0	0.8	1.22	1.03	1.0	1.3	41.7	47.3		951.7	1,759.5	3.65	3.6	0.74	1.0	0.91	1.35	1.01	1.00	0.44	1.30		0.62	1.03				0.00	0.00
22.00	21.75	125.0	41.5	50.0	0.0	5	0.0	0.8	1.25	1.04	1.0	1.3	41.7	47.3		954.5	1,769.6	3.69	3.5	0.73	1.0	0.91	1.35	1.00	1.00	0.45	1.30		0.63	1.04				0.00	0.00
22.50	22.25	125.0	41.6	50.0	0.0	5	0.0	0.8	1.28	1.06	1.0	1.3	41.6	47.2		957.1	1,779.6	3.72	3.5	0.73	1.0	0.90	1.35	1.00	1.00	0.45	1.30		0.65	1.06				0.00	0.00
23.00	22.75	125.0	41.7	50.0	0.0	5	0.0	0.8	1.31	1.07	1.0	1.3	41.5	47.1		959.8	1,789.4	3.75	3.5	0.72	1.0	0.90	1.35	1.00	1.00	0.46	1.30		0.66	1.07				0.00	0.00
23.50	23.25	125.0	41.8	50.0	0.0	5	0.0	0.8	1.35	1.09	1.0	1.3	41.5	47.1		962.3	1,799.0	3.79	3.5	0.71	1.0	0.90	1.35	0.99	1.00	0.46	1.30		0.68	1.09				0.00	0.00
24.00	23.75	125.0	41.9	50.0	0.0	5	0.0	0.8	1.38	1.10	1.0	1.3	41.4	47.0		964.9	1,808.5	3.82	3.5	0.71	1.0	0.89	1.35	0.99	1.00	0.47	1.30		0.69	1.10				0.00	0.00
24.50	24.25	125.0	42.0	50.0	0.0	5	0.0	0.8	1.41	1.12	1.0	1.3	41.3	46.9		967.4	1,817.8	3.85	3.4	0.70	1.0	0.89	1.35	0.98	1.00	0.47	1.30		0.70	1.12				0.00	0.00
25.00	24.75	115.0	33.3	65.0	0.0	7	38.6	0.1	1.44	1.13	1.0	1.3	32.5	38.1	85.6	937.5	1,570.8	3.61	3.2		0.8	0.89	1.35	0.98	1.00	0.47	1.30	2.00	0.72	0.96		0.000	0.0000	0.00	0.00
25.50	25.25	115.0	33.4	65.0	0.0	7	38.6	0.1	1.47	1.15	1.0	1.3	32.5	38.1	85.6	939.1	1,576.2	3.63	3.2		0.8	0.89	1.35	0.98	1.00	0.48	1.30	2.00	0.73	0.97		0.000	0.0000	0.00	0.00
26.00	25.75	115.0	33.5	65.0	0.0	7	38.5	0.1	1.50	1.16	1.0	1.3	32.4	38.0	85.5	940.7	1,581.5	3.66	3.2		0.8	0.88	1.35	0.98	1.00	0.48	1.30	2.00	0.74	0.98		0.000	0.0000	0.00	0.00
26.50	26.25	115.0	33.5	65.0	0.0	7	38.5	0.1	1.52	1.17	1.0	1.3	32.3	37.9	85.4	942.3	1,586.8	3.68	3.1		0.8	0.88	1.35	0.97	1.00	0.49	1.30	2.00	0.75	0.99		0.000	0.0000	0.00	0.00
27.00	26.75	115.0	33.6	65.0	0.0	7	38.5	0.1	1.55	1.19	1.0	1.3	32.3	37.9	85.3	943.8	1,592.0	3.70	3.1		0.8	0.88	1.35	0.97	1.00	0.49	1.30	2.00	0.76	1.00		0.000	0.0000	0.00	0.00
27.50	27.25	115.0	33.7	65.0	0.0	7	38.5	0.1	1.58	1.20	1.0	1.3	32.2	37.8	85.3	945.3	1,597.1	3.73	3.1		0.8	0.87	1.35	0.97	1.00	0.49	1.30	2.00	0.77	1.01		0.000	0.0000	0.00	0.00
28.00	27.75	115.0	33.7	65.0	0.0	7	38.5	0.1	1.61	1.21	1.0	1.3	32.1	37.7	85.2	946.8	1,602.2	3.75	3.1		0.8	0.87	1.35	0.97	1.00	0.50	1.30	2.00	0.79	1.02		0.000	0.0000	0.00	0.00
28.50	28.25	115.0	33.8	65.0	0.0	7	38.4	0.1	1.64	1.23	0.9	1.3	32.1	37.7	85.1	948.3	1,607.2	3.77	3.1		0.8	0.87	1.35	0.96	1.00	0.50	1.30	2.00	0.80	1.03		0.000	0.0000	0.00	0.00
29.00	28.75	115.0	33.8	65.0	0.0	7	38.4	0.1	1.67	1.24	0.9	1.3	32.0	37.6	85.0	949.8	1,612.1	3.79	3.1		0.8	0.87	1.35	0.96	1.00	0.50	1.30	2.00	0.81	1.04		0.000	0.0000	0.00	0.00
29.50	29.25	115.0	33.9	65.0	0.0	7	38.4	0.1	1.70	1.25	0.9	1.3	31.9	37.5	84.9	951.2	1,616.9	3.82	3.0		0.8	0.86	1.35	0.96	1.00	0.50	1.30	2.00	0.82	1.05		0.000	0.0000	0.00	0.00
30.00	29.75	115.0	33.9	65.0	0.0	7	38.4	0.1	1.73	1.27	0.9	1.3	31.8	37.4	84.8	952.6	1,621.7	3.84	3.0		0.8	0.86	1.35	0.96	1.00	0.51	1.30	2.00	0.83	1.06		0.000	0.0000	0.00	0.00
30.50	30.25	115.0	34.0	65.0	0.0	7	38.4	0.1	1.75	1.28	0.9	1.3	31.8	37.4	84.8	953.9	1,626.3	3.86	3.0		0.8	0.86	1.35	0.96	1.00	0.51	1.30	2.00	0.84	1.07		0.000	0.0000	0.00	0.00
31.00	30.75	115.0	34.0	65.0	0.0	7	38.4	0.1	1.78	1.29	0.9	1.3	31.7	37.3	84.7	955.3	1,631.0	3.88	3.0		0.8	0.85	1.35	0.95	1.00	0.51	1.30	2.00	0.85	1.08		0.000	0.0000	0.00	0.00
31.50	31.25	115.0	34.1	65.0	0.0	7	38.3	0.1	1.81	1.30	0.9	1.3	31.6	37.2	84.6	956.6	1,635.6	3.90	3.0		0.7	0.85	1.35	0.95	1.00	0.51	1.30	2.00	0.86	1.09		0.000	0.0000	0.00	0.00
31.75	31.63	115.0	34.1	65.0	0.0	7	38.3	0.1	1.83	1.31	0.9	1.3	31.6	37.2	84.6	957.6	1,639.0	3.92	3.0		0.7	0.85	1.35	0.95	1.00	0.52	1.30	2.00	0.87	1.09		0.000	0.0000	0.00	0.00
32.25	32.00	115.0	70.1	65.0	0.0	7	40.5	0.1	1.86	1.32	0.9	1.3	66.0	71.6	100.0	1,072.1	2,054.0	4.38	3.3		0.8	0.85	1.35	0.93	1.00	0.53	1.30	2.00	0.88	1.12		0.000	0.0000	0.00	0.00
32.75	32.50	115.0	70.2	65.0	0.0	7	40.5	0.1	1.88	1.34	0.9	1.3	66.0	71.5	100.0	1,073.3	2,058.9	4.40	3.3		0.8	0.84	1.35	0.93	1.00	0.53	1.30	2.00	0.89	1.12		0.000	0.0000	0.00	0.00
33.25	33.00	115.0	70.2	65.0	0.0	7	40.5	0.1	1.91	1.35	0.9	1.3	65.9	71.4	100.0	1,074.6	2,063.7	4.43	3.3		0.8	0.84	1.35	0.93	1.00	0.53	1.30	2.00	0.90	1.13		0.000	0.0000	0.00	0.00
33.75	33.50	115.0	70.3	65.0	0.0	7	40.5	0.1	1.94	1.36	0.9	1.3	65.8	71.4	100.0	1,075.8	2,068.5	4.45	3.3		0.8	0.84	1.35	0.92	1.00	0.53	1.30	2.00	0.91	1.14		0.000	0.0000	0.00	0.00
34.25	34.00	115.0	70.4	65.0	0.0	7	40.5	0.1	1.97	1.38	0.9	1.3	65.7	71.3	100.0	1,077.1	2,073.2	4.47	3.2		0.8	0.83	1.35	0.92	1.00	0.54	1.30	2.00	0.92	1.15		0.000	0.0000	0.00	0.00

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SPT Data Interpretation
Boring B-1

Liquefaction: Boulanger Idriss (2010-16)
Settl.: [dry] Pradel (1998); [sat] Idriss Boulanger (2008)

W.O. # 3191-0-0-100

Z_b (ft)	Z_m (ft)	γ (pcf)	N_{60}	FC(%)	CC(%)	USCS	φ (°)	C' (tsf)	σ_{v0} (tsf)	σ_{v0}' (tsf)	C_N	C_s	$(N_1)_{60}$	$(N_1)_{60cs}$	D_R (%)	V_s (ft/s)	G_0 (tsf)	σ_p' (tsf)	OCR_{G0}	S_u/σ_{v0}'	K_0	r_d	MSF	K_σ	K_α	$CSR_{7.5}$	$CRR_{7.5}$	FS	τ_{av} (tsf)	p (tsf)	G/G_0	γ_{max} (%)	ε_v (%)	ΔS_i	ΣS_i (in)
34.75	34.50	115.0	70.4	65.0	0.0	7	40.5	0.1	2.00	1.39	0.9	1.3	65.6	71.2	100.0	1,078.3	2,077.8	4.50	3.2		0.8	0.83	1.35	0.92	1.00	0.54	1.30	2.00	0.93	1.16		0.000	0.0000	0.00	0.00
35.25	35.00	115.0	70.5	65.0	0.0	7	40.5	0.1	2.03	1.40	0.9	1.3	65.5	71.1	100.0	1,079.4	2,082.4	4.52	3.2		0.7	0.83	1.35	0.92	1.00	0.54	1.30	2.00	0.94	1.17		0.000	0.0000	0.00	0.00
35.75	35.50	115.0	70.6	65.0	0.0	7	40.5	0.1	2.06	1.42	0.9	1.3	65.4	70.9	100.0	1,080.6	2,086.9	4.54	3.2		0.7	0.83	1.35	0.91	1.00	0.54	1.30	2.00	0.95	1.18		0.000	0.0000	0.00	0.00
36.25	36.00	115.0	70.6	65.0	0.0	7	40.5	0.1	2.09	1.43	0.9	1.3	65.3	70.8	100.0	1,081.8	2,091.3	4.56	3.2		0.7	0.82	1.35	0.91	1.00	0.55	1.30	2.00	0.96	1.19		0.000	0.0000	0.00	0.00
36.75	36.50	115.0	70.7	65.0	0.0	7	40.5	0.1	2.11	1.44	0.9	1.3	65.2	70.7	100.0	1,082.9	2,095.7	4.58	3.2		0.7	0.82	1.35	0.91	1.00	0.55	1.30	2.00	0.97	1.20		0.000	0.0000	0.00	0.00
37.25	37.00	130.0	67.1	50.0	0.0	5	0.0	0.9	2.14	1.46	0.9	1.3	61.7	67.3		1,060.5	2,272.2	4.79	3.3	0.63	1.0	0.82	1.35	0.90	1.00	0.55	1.30		0.98	1.46				0.00	0.00
37.75	37.50	130.0	67.2	50.0	0.0	5	0.0	0.9	2.18	1.47	0.9	1.3	61.6	67.2		1,062.4	2,280.3	4.82	3.3	0.63	1.0	0.81	1.35	0.90	1.00	0.55	1.30		0.99	1.47				0.00	0.00
38.25	38.00	130.0	67.2	50.0	0.0	5	0.0	0.9	2.21	1.49	0.9	1.3	61.4	67.0		1,064.3	2,288.4	4.85	3.3	0.62	1.0	0.81	1.35	0.90	1.00	0.55	1.30		1.00	1.49				0.00	0.00
38.75	38.50	130.0	67.3	50.0	0.0	5	0.0	0.9	2.24	1.51	0.9	1.3	61.3	66.9		1,066.1	2,296.3	4.88	3.2	0.62	1.0	0.81	1.35	0.89	1.00	0.56	1.30		1.01	1.51				0.00	0.00
39.25	39.00	130.0	67.3	50.0	0.0	5	0.0	0.9	2.27	1.53	0.9	1.3	61.1	66.7		1,068.0	2,304.2	4.91	3.2	0.62	1.0	0.80	1.35	0.89	1.00	0.56	1.30		1.02	1.53				0.00	0.00
39.75	39.50	130.0	67.4	50.0	0.0	5	0.0	0.9	2.31	1.54	0.9	1.3	61.0	66.6		1,069.8	2,312.0	4.94	3.2	0.61	1.0	0.80	1.35	0.89	1.00	0.56	1.30		1.03	1.54				0.00	0.00
40.25	40.00	130.0	67.4	50.0	0.0	5	0.0	0.9	2.34	1.56	0.9	1.3	60.9	66.5		1,071.5	2,319.7	4.97	3.2	0.61	1.0	0.80	1.35	0.88	1.00	0.56	1.30		1.05	1.56				0.00	0.00
40.75	40.50	130.0	67.4	50.0	0.0	5	0.0	1.0	2.37	1.58	0.9	1.3	60.7	66.3		1,073.3	2,327.3	5.00	3.2	0.60	1.0	0.80	1.35	0.88	1.00	0.56	1.30		1.06	1.58				0.00	0.00
41.25	41.00	130.0	67.5	50.0	0.0	5	0.0	1.0	2.40	1.59	0.9	1.3	60.6	66.2		1,075.0	2,334.8	5.03	3.2	0.60	1.0	0.79	1.35	0.88	1.00	0.56	1.30		1.07	1.59				0.00	0.00
41.75	41.50	130.0	67.5	50.0	0.0	5	0.0	1.0	2.44	1.61	0.9	1.3	60.4	66.1		1,076.7	2,342.2	5.06	3.1	0.59	1.0	0.79	1.35	0.87	1.00	0.57	1.30		1.08	1.61				0.00	0.00
42.25	42.00	130.0	67.5	50.0	0.0	5	0.0	1.0	2.47	1.63	0.9	1.3	60.3	65.9		1,078.4	2,349.5	5.09	3.1	0.59	1.0	0.79	1.35	0.87	1.00	0.57	1.30		1.09	1.63				0.00	0.00
42.75	42.50	130.0	67.6	50.0	0.0	5	0.0	1.0	2.50	1.64	0.9	1.3	60.2	65.8		1,080.1	2,356.8	5.12	3.1	0.59	1.0	0.78	1.35	0.87	1.00	0.57	1.30		1.10	1.64				0.00	0.00
43.25	43.00	130.0	67.6	50.0	0.0	5	0.0	1.0	2.53	1.66	0.9	1.3	60.0	65.7		1,081.7	2,364.0	5.15	3.1	0.58	1.0	0.78	1.35	0.86	1.00	0.57	1.30		1.11	1.66				0.00	0.00
43.75	43.50	130.0	67.6	50.0	0.0	5	0.0	1.0	2.57	1.68	0.9	1.3	59.9	65.5		1,083.4	2,371.1	5.18	3.1	0.58	1.0	0.78	1.35	0.86	1.00	0.57	1.30		1.12	1.68				0.00	0.00
44.25	44.00	130.0	67.7	50.0	0.0	5	0.0	1.0	2.60	1.69	0.9	1.3	59.8	65.4		1,085.0	2,378.1	5.21	3.1	0.58	1.0	0.77	1.35	0.86	1.00	0.57	1.30		1.13	1.69				0.00	0.00
44.75	44.50	130.0	67.7	50.0	0.0	5	0.0	1.0	2.63	1.71	0.9	1.3	59.6	65.2		1,086.5	2,385.1	5.24	3.1	0.57	1.0	0.77	1.35	0.86	1.00	0.57	1.30		1.14	1.71				0.00	0.00
45.25	45.00	130.0	67.7	50.0	0.0	5	0.0	1.0	2.66	1.73	0.9	1.3	59.5	65.1		1,088.1	2,391.9	5.27	3.0	0.57	1.0	0.77	1.35	0.85	1.00	0.57	1.30		1.15	1.73				0.00	0.00
45.75	45.50	130.0	67.7	50.0	0.0	5	0.0	1.0	2.70	1.75	0.9	1.3	59.4	65.0		1,089.7	2,398.7	5.30	3.0	0.57	1.0	0.77	1.35	0.85	1.00	0.58	1.30		1.16	1.75				0.00	0.00
46.25	46.00	130.0	67.7	50.0	0.0	5	0.0	1.0	2.73	1.76	0.9	1.3	59.2	64.8		1,091.2	2,405.5	5.33	3.0	0.56	1.0	0.76	1.35	0.85	1.00	0.58	1.30		1.16	1.76				0.00	0.00
46.75	46.50	130.0	67.8	50.0	0.0	5	0.0	1.0	2.76	1.78	0.9	1.3	59.1	64.7		1,092.7	2,412.2	5.35	3.0	0.56	1.0	0.76	1.35	0.84	1.00	0.58	1.30		1.17	1.78				0.00	0.00
47.25	47.00	130.0	67.8	50.0	0.0	5	0.0	1.0	2.79	1.80	0.9	1.3	59.0	64.6		1,094.2	2,418.8	5.38	3.0	0.56	1.0	0.76	1.35	0.84	1.00	0.58	1.30		1.18	1.80				0.00	0.00
47.75	47.50	130.0	67.8	50.0	0.0	5	0.0	1.0	2.83	1.81	0.9	1.3	58.8	64.5		1,095.7	2,425.3	5.41	3.0	0.55	1.0	0.75	1.35	0.84	1.00	0.58	1.30		1.19	1.81				0.00	0.00
48.00	47.88	130.0	67.8	50.0	0.0	5	0.0	1.0	2.85	1.83	0.9	1.3	58.7	64.4		1,096.8	2,430.1	5.43	3.0	0.55	1.0	0.75	1.35	0.84	1.00	0.58	1.30		1.20	1.83				0.00	0.00
48.50	48.25	115.0	97.1	12.0	0.0	12	40.5	0.1	2.87	1.84	0.9	1.3	84.0	86.1	100.0	1,129.7	2,280.7	5.28	2.9		0.7	0.75	1.35	0.83	1.00	0.58	1.30	2.00	1.20	1.47		0.000	0.0000	0.00	0.00
49.00	48.75	115.0	97.2	12.0	0.0	12	40.5	0.1	2.90	1.85	0.9	1.3	83.9	86.0	100.0	1,130.4	2,283.6	5.30	2.9		0.7	0.75	1.35	0.83	1.00	0.58	1.30	2.00	1.21	1.47		0.000	0.0000	0.00	0.00
49.50	49.25	115.0	97.2	12.0	0.0	12	40.5	0.1	2.93	1.86	0.9	1.3	83.8	85.8	100.0	1,131.1	2,286.5	5.32	2.9		0.7	0.74	1.35	0.83	1.00	0.58	1.30	2.00	1.22	1.48		0.000	0.0000	0.00	0.00
50.00	49.75	115.0	97.2	12.0	0.0	12	40.5	0.1	2.96	1.88	0.9	1.3	83.6	85.7	100.0	1,131.8	2,289.4	5.34	2.8		0.7	0.74	1.35	0.83	1.00	0.58	1.30	2.00	1.23	1.49		0.000	0.0000	0.00	0.00
50.50	50.25	115.0	97.2	12.0	0.0	12	40.5	0.1	2.99	1.89	0.9	1.3	83.5	85.5	100.0	1,132.5	2,292.2	5.36	2.8		0.7	0.74	1.35	0.83	1.00	0.58	1.30		1.23	1.50		0.000	0.0000	0.00	0.00
51.00	50.75	115.0	97.2	12.0	0.0	12	40.5	0.1	3.02	1.90	0.9	1.3	83.3	85.4	100.0	1,133.2	2,295.0	5.38	2.8		0.7	0.73	1.35	0.82	1.00	0.59	1.30		1.24	1.51		0.000	0.0000	0.00	0.00

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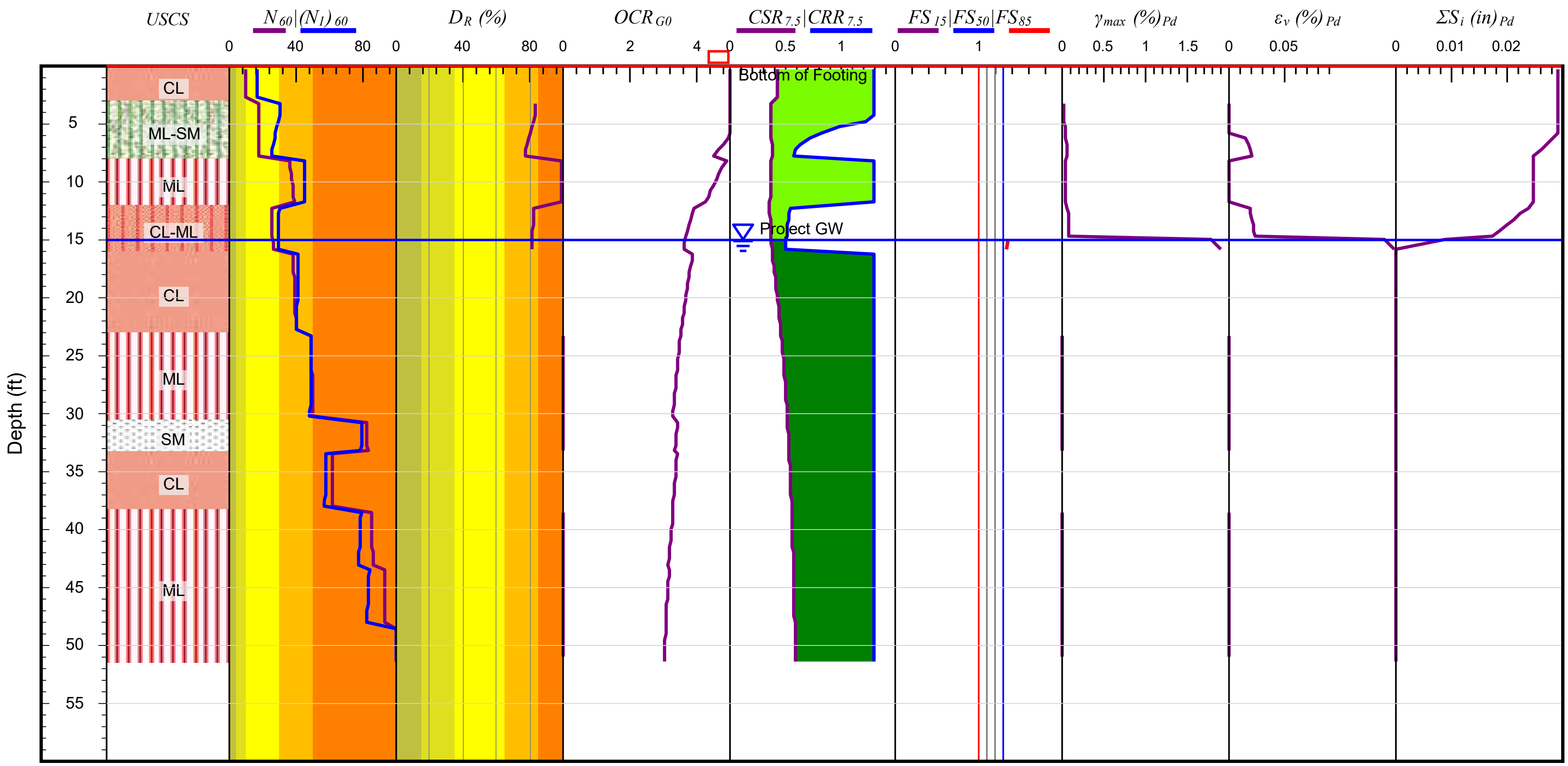

CL	ML	SM
ML-SM	CL-ML	

Silt Correction: $K=(1-FC)^{0.75}$

Earthquake & Groundwater Information:
Magnitude = 6.7
Max. Acceleration = 0.861 g
Project GW = 15 ft
Maximum Settlement = 0.03 in
Settl. at Bottom of Footing = 0.03 in

Liquefaction: Boulanger & Idriss (2010-16)
Settl.: [dry] Pradel (1998); [sat] Idriss & Boulanger (2008)
Lateral spreading: Idriss & Boulanger (2008)
M correction: [Sand; Clay] Boulanger & Idriss(2004)
σv correction: Idriss & Boulanger (2008)
Stress reduction: Idriss & Boulanger (2008)

GORIAN & ASSOCIATES, INC.

Seismic Settlement Potential - SPT Data

Project:	Proposed Self-Storage				
Location:	18618 Oxnard St., Tarzana				
Project No.:	3191-0-0-100	Boring No.:	B-2	Figure:	2

X:\3191-0-0 Palatine Capital Partners Acquisitions, LLC - 18618 Oxnard St. Tarzana\Seismic Settlement\GeoSuite_3191-0-0-100_B-2.csv

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Prepared at 6/11/2021 5:45:48 PM

Z_b (ft)	Z_m (ft)	γ (pcf)	N_{60}	FC(%)	CC(%)	USCS	φ (°)	C' (tsf)	σ_{v0} (tsf)	σ_{v0}' (tsf)	C_N	C_s	$(N_1)_{60}$	$(N_1)_{60cs}$	D_R (%)	V_s (ft/s)	G_0 (tsf)	σ_p' (tsf)	OCR_{G0}	S_u/σ_{v0}'	K_0	r_d	MSF	K_σ	K_α	$CSR_{7.5}$	$CRR_{7.5}$	FS	τ_{av} (tsf)	p (tsf)	G/G_0	γ_{max} (%)	ε_v (%)	ΔS_i	ΣS_i (in)
0.50	0.25	110.0	9.9	50.0	0.0	5	0.0	0.0	0.01	0.01	1.7	1.2	16.9	22.5		724.1	896.3	0.07	5.0	0.80	1.0	1.00	1.18	1.10	1.00	0.43	1.30		0.01	0.01	0.0000			0.00	0.03
1.00	0.75	110.0	9.9	50.0	0.0	5	0.0	0.0	0.04	0.04	1.7	1.2	16.9	22.5		720.3	886.8	0.21	5.0	0.80	1.0	1.00	1.18	1.10	1.00	0.43	1.30		0.02	0.04	0.0000			0.00	0.03
1.50	1.25	110.0	9.9	50.0	0.0	5	0.0	0.1	0.07	0.07	1.7	1.2	16.9	22.5		716.6	877.8	0.34	5.0	0.80	1.0	1.00	1.18	1.10	1.00	0.43	1.30		0.04	0.07	0.0000			0.00	0.03
2.00	1.75	110.0	9.9	50.0	0.0	5	0.0	0.1	0.10	0.10	1.7	1.2	16.9	22.5		713.1	869.2	0.48	5.0	0.80	1.0	1.00	1.18	1.10	1.00	0.43	1.30		0.05	0.10	0.0000			0.00	0.03
2.50	2.25	110.0	9.9	50.0	0.0	5	0.0	0.1	0.12	0.12	1.7	1.2	16.9	22.5		709.7	861.1	0.62	5.0	0.80	1.0	0.99	1.18	1.10	1.00	0.43	1.30		0.07	0.12	0.0000			0.00	0.03
3.00	2.75	110.0	9.9	50.0	0.0	5	0.0	0.1	0.15	0.15	1.7	1.2	16.9	22.5		706.5	853.3	0.76	5.0	0.80	1.0	0.99	1.18	1.10	1.00	0.43	1.30		0.08	0.15	0.0000			0.00	0.03
3.50	3.25	110.0	17.9	62.0	0.0	8	38.0	0.0	0.18	0.18	1.7	1.3	30.5	36.1	83.3	765.6	1,002.1	0.89	5.0		1.0	0.99	1.35	1.10	1.00	0.37	1.30		0.10	0.18	0.0495	0.016	0.0000	0.00	0.03
4.00	3.75	110.0	18.0	62.0	0.0	8	38.0	0.0	0.21	0.21	1.7	1.3	30.5	36.1	83.3	762.2	993.1	1.03	5.0		1.0	0.99	1.35	1.10	1.00	0.37	1.30		0.11	0.21	0.0341	0.019	0.0000	0.00	0.03
4.50	4.25	110.0	18.0	62.0	0.0	8	38.0	0.0	0.23	0.23	1.7	1.3	30.5	36.1	83.3	758.8	984.4	1.17	5.0		1.0	0.99	1.35	1.10	1.00	0.37	1.30		0.13	0.24	0.0351	0.024	0.0000	0.00	0.03
5.00	4.75	110.0	17.9	62.0	0.0	8	37.8	0.0	0.26	0.26	1.7	1.3	29.9	35.5	82.6	755.5	975.7	1.31	5.0		1.0	0.99	1.35	1.10	1.00	0.37	1.22		0.14	0.27	0.0391	0.028	0.0000	0.00	0.03
5.50	5.25	110.0	17.8	62.0	0.0	8	37.6	0.0	0.29	0.29	1.6	1.3	28.8	34.4	81.4	751.5	965.4	1.44	5.0		1.0	0.98	1.35	1.10	1.00	0.37	0.99		0.16	0.30	0.0413	0.033	0.0000	0.00	0.03
6.00	5.75	110.0	17.7	62.0	0.0	8	37.3	0.0	0.32	0.32	1.6	1.3	27.9	33.5	80.3	747.7	955.6	1.58	5.0		1.0	0.98	1.35	1.10	1.00	0.37	0.83		0.17	0.33	0.0421	0.039	0.0000	0.00	0.03
6.50	6.25	110.0	17.5	62.0	0.0	8	37.0	0.0	0.34	0.34	1.5	1.3	27.0	32.6	79.2	744.0	946.2	1.71	5.0		1.0	0.98	1.34	1.10	1.00	0.37	0.71		0.19	0.35	0.0429	0.046	0.0154	0.00	0.03
7.00	6.75	110.0	17.4	62.0	0.0	8	36.8	0.0	0.37	0.37	1.5	1.3	26.3	31.8	78.3	746.2	951.8	1.78	4.8		1.0	0.98	1.33	1.10	1.00	0.38	0.63		0.20	0.38	0.0437	0.052	0.0179	0.00	0.03
7.50	7.25	110.0	17.6	62.0	0.0	8	36.7	0.0	0.40	0.40	1.5	1.3	25.8	31.4	77.7	755.8	976.6	1.85	4.7		1.0	0.98	1.32	1.10	1.00	0.38	0.59		0.22	0.40	0.0444	0.055	0.0193	0.00	0.03
8.00	7.75	110.0	17.9	62.0	0.0	8	36.6	0.0	0.43	0.43	1.4	1.3	25.6	31.2	77.4	765.6	1,001.9	1.93	4.5		1.0	0.97	1.31	1.10	1.00	0.38	0.57		0.23	0.42	0.0452	0.057	0.0205	0.00	0.02
8.50	8.25	100.0	36.1	70.0	0.0	7	40.5	0.0	0.45	0.45	1.3	1.3	45.3	50.8	98.9	900.8	1,260.9	2.21	4.9		1.0	0.97	1.35	1.10	1.00	0.37	1.30		0.25	0.45	0.0515	0.037	0.0000	0.00	0.02
9.00	8.75	100.0	36.6	70.0	0.0	7	40.5	0.0	0.48	0.48	1.2	1.3	45.3	50.8	98.9	909.8	1,286.3	2.28	4.8		1.0	0.97	1.35	1.10	1.00	0.37	1.30		0.26	0.47	0.0522	0.038	0.0000	0.00	0.02
9.50	9.25	100.0	37.1	70.0	0.0	7	40.5	0.0	0.50	0.50	1.2	1.3	45.3	50.8	98.9	918.3	1,310.4	2.35	4.7		1.0	0.97	1.35	1.10	1.00	0.36	1.30		0.27	0.49	0.0528	0.040	0.0000	0.00	0.02
10.00	9.75	100.0	37.5	70.0	0.0	7	40.5	0.0	0.53	0.53	1.2	1.3	45.2	50.8	98.8	926.3	1,333.4	2.42	4.6		0.9	0.97	1.35	1.10	1.00	0.36	1.30		0.29	0.51	0.0535	0.041	0.0000	0.00	0.02
10.50	10.25	100.0	37.9	70.0	0.0	7	40.5	0.0	0.55	0.55	1.2	1.3	45.2	50.7	98.8	933.9	1,355.3	2.49	4.5		0.9	0.96	1.35	1.10	1.00	0.36	1.30		0.30	0.53	0.0541	0.043	0.0000	0.00	0.02
11.00	10.75	100.0	38.3	70.0	0.0	7	40.5	0.1	0.58	0.58	1.2	1.3	45.1	50.7	98.7	941.0	1,376.2	2.55	4.4		0.9	0.96	1.35	1.10	1.00	0.36	1.30		0.31	0.55	0.0547	0.044	0.0000	0.00	0.02
11.50	11.25	100.0	38.7	70.0	0.0	7	40.5	0.1	0.60	0.60	1.2	1.3	45.0	50.6	98.6	947.9	1,396.2	2.62	4.3		0.9	0.96	1.35	1.10	1.00	0.36	1.30		0.32	0.57	0.0552	0.046	0.0000	0.00	0.02
12.00	11.75	100.0	39.0	70.0	0.0	7	40.5	0.1	0.63	0.63	1.2	1.3	44.9	50.5	98.6	954.3	1,415.4	2.68	4.3		0.9	0.96	1.35	1.10	1.00	0.36	1.30		0.34	0.59	0.0557	0.047	0.0000	0.00	0.02
12.50	12.25	100.0	25.2	65.0	0.0	6	37.9	0.1	0.65	0.65	1.2	1.3	30.0	35.6	82.8	898.9	1,255.7	2.57	3.9		0.9	0.95	1.35	1.10	1.00	0.36	0.54		0.35	0.61	0.0559	0.067	0.0189	0.00	0.02
13.00	12.75	100.0	25.3	65.0	0.0	6	37.8	0.1	0.68	0.68	1.2	1.3	29.8	35.4	82.5	904.5	1,271.4	2.63	3.9		0.9	0.95	1.35	1.10	1.00	0.36	0.53		0.36	0.63	0.0564	0.069	0.0197	0.00	0.02
13.50	13.25	100.0	25.5	65.0	0.0	6	37.8	0.1	0.70	0.70	1.2	1.3	29.6	35.2	82.3	909.8	1,286.4	2.68	3.8		0.9	0.95	1.35	1.09	1.00	0.36	0.53		0.37	0.65	0.0568	0.071	0.0206	0.00	0.02
14.00	13.75	100.0	25.6	65.0	0.0	6	37.7	0.1	0.73	0.73	1.1	1.3	29.4	35.0	82.0	915.0	1,301.2	2.74	3.8		0.9	0.95	1.35	1.08	1.00	0.36	0.52		0.39	0.67	0.0572	0.073	0.0214	0.00	0.02
14.50	14.25	100.0	25.8	65.0	0.0	6	37.7	0.1	0.75	0.75	1.1	1.3	29.2	34.8	81.8	920.0	1,315.5	2.79	3.7		0.9	0.95	1.35	1.07	1.00	0.36	0.51		0.40	0.69	0.0576	0.075	0.0223	0.00	0.02
15.00	14.75	100.0	25.9	65.0	0.0	6	37.6	0.1	0.78	0.78	1.1	1.3	29.0	34.6	81.6	924.7	1,328.9	2.84	3.7		0.9	0.94	1.35	1.06	1.00	0.37	0.51		0.41	0.70	0.0579	0.077	0.0233	0.00	0.02
15.50	15.25	100.0	26.0	65.0	0.0	6	37.6	0.1	0.80	0.79	1.1	1.3	28.9	34.5	81.5	928.2	1,338.8	2.88	3.6		0.9	0.94	1.35	1.06	1.00	0.37	0.50	1.36	0.42	0.72		1.783	0.1392	0.01	0.01
16.00	15.75	100.0	26.2	65.0	0.0	6	37.6	0.1	0.83	0.80	1.1	1.3	29.0	34.6	81.5	930.4	1,345.2	2.90	3.6		0.9	0.94	1.35	1.06	1.00	0.38	0.50	1.33	0.43	0.73		1.898	0.1481	0.01	0.00
16.50	16.25	125.0	38.1	50.0	0.0	5	0.0	0.7	0.86	0.82	1.1	1.3	41.1	46.7		905.5	1,592.7	3.17	3.9	0.80	1.0	0.94	1.35	1.08	1.00	0.38	1.30		0.45	0.82				0.00	0.00
17.00	16.75	125.0	38.3	50.0	0.0	5	0.0	0.7	0.89	0.83	1.1	1.3	41.1	46.7		909.0	1,605.3	3.20	3.8	0.80	1.0	0.93	1.35	1.07	1.00	0.38	1.30		0.46	0.83				0.00	0.00
17.50	17.25	125.0	38.5	50.0	0.0	5	0.0	0.7	0.92	0.85	1.1	1.3	41.0	46.7		912.5	1,617.6	3.24	3.8	0.80	1.0	0.93	1.35	1.07	1.00	0.39	1.30		0.48	0.85				0.00	0.00
18.00	17.75	125.0	38.6	50.0	0.0	5	0.0	0.7	0.95	0.86	1.1	1.3	41.0	46.6		915.9	1,629.6	3.28	3.8	0.80	1.0	0.93	1.35	1.06	1.00	0.40	1.30		0.49	0.86				0.00	0.00
18.50	18.25	125.0	38.8	50.0	0.0	5	0.0	0.7	0.98	0.88	1.1	1.3	41.0	46.6		919.2	1,641.4	3.31	3.8	0.80	1.0	0.92	1.35	1.06	1.00	0.40	1.30		0.51	0.88				0.00	0.00
19.00	18.75	125.0	38.9	50.0	0.0	5	0.0	0.7	1.01	0.89	1.1	1.3	40.9	46.5		922.5	1,653.0	3.35	3.7	0.79	1.0	0.92	1.35	1.05	1.00	0.41	1.30		0.52	0.89				0.00	0.00
19.50	19.25	125.0	39.1	50.0	0.0	5	0.0	0.7	1.04	0.91	1.0	1.3	40.9	46.5		925.6	1,664.4	3.38	3.7	0.79	1.0	0.92	1.35	1.05	1.00	0.42	1.30		0.54	0.91				0.00	0.00
20.00	19.75	125.0	39.2	50.0	0.0	5	0.0	0.7	1.07	0.93	1.0	1.3	40.8	46.4		928.7	1,675.6	3.42	3.7	0.78	1.0	0.92	1.35	1.04	1.00	0.42	1.30		0.55	0.93				0.00	0.00
20.50	20.25	125.0	39.4	50.0	0.0	5	0.0	0.7	1.11	0.94	1.0	1.3	40.7	46.3		931.8	1,686.5	3.45	3.7	0.77	1.0	0.91	1.35	1.03	1.00	0.43	1.30		0.57	0.94				0.00	0.00
21.00	20.75	125.0	39.5	50.0	0.0	5	0.0	0.7	1.14	0.96	1.0	1.3	40.7	46.3		934.7	1,697.3	3.49	3.6	0.76	1.0	0.91	1.35	1.03	1.00	0.43	1.30		0.58	0.96				0.00	0.00
21.50	21.25	125.0	39.6	50.0	0.0	5	0.0	0.7	1.17	0.97	1.0	1.3	40.6	46.2		937.6	1,707.8	3.52	3.6	0.76	1.0	0.91	1.35	1.03	1.00	0.44	1.30		0.59	0.97				0.00	0.00
22.00	21.75	125.0	39.7	50.0	0.0	5	0.0	0.7	1.20	0.99	1.0	1.3	40.5	46.1		940.5	1,718.2	3.56	3.6	0.75	1.0	0.91	1.35	1.02	1.00	0.45	1.30		0.61	0.99				0.00	0.00
22.50	22.25	125.0	39.9	50.0	0.0	5	0.0	0.7	1.23	1.00	1.0	1.3	40.5	46.1		943.3	1,728.4	3.59	3.6	0.74	1.0	0.90	1.35	1.02	1.00	0.45	1.30		0.62	1.00				0.00	0.00
23.00	22.75	125.0	40.0	50.0	0.0	5	0.0	0.8	1.26	1.02	1.0	1.3	40.4	46.0		946.0	1,738.5	3.62	3.6	0.74	1.0	0.90	1.35	1.01	1.00	0.46	1.30		0.64	1.02				0.00	0.00
23.50	23.25	110.0	48.8	65.0	0.0	7	40.5	0.1	1.29	1.03	1.0	1.3	49.1	54.7	100.0	1,003.7	1,722.1	3.63	3.5		0.8	0.90	1.35	1.01	1.00	0.46	1.30	2.00	0.65	0.89		0.000	0.0000	0.00	0.00
24.00	23.75	110.0	48.9	65.0	0.0	7	40.5	0.1	1.32	1.05	1.0	1.3	49.0	54.6	100.0	1,005.4	1,728.0	3.65	3.5		0.8	0.89	1.35	1.00	1.00	0.47	1.30	2.00	0.66	0.90		0.000	0.0000	0.00	0.00
24.50	24.25	110.0	49.0	65.0	0.0	7	40.5	0.1	1.35	1.06	1.0	1.3	49.0	54.6	100.0	1,007.1	1,733.7	3.68	3.5		0.8	0.89	1.35	1.00	1.00	0.47	1.30	2.00	0.67	0.91		0.000	0.0000	0.00	0.00
25.00	24.75	110.0	49.1	65.0	0.0	7	40.5	0.1	1.37	1.07	1.0	1.3	49.0	54.6	100.0	1,008.7	1,739.3	3.70	3.5		0.8	0.89	1.35	1.00	1.00	0.47	1.30	2.00	0.68	0.92		0.000	0.0000	0.00	0.00
25.50	25.25	110.0	49.2	65.0	0.0	7	40.5	0.1	1.40	1.08	1.0	1.3	48.9	54.5	100.0	1,010.3	1,744.9	3.72	3.4		0.8	0.89	1.35	0.99	1.00	0.48	1.30	2.00	0.70	0.92		0.000	0.0000	0.00	0.00
26.00	25.75	110.0	49.3	65.0	0.0	7	40.5	0.1	1.43	1.09	1.0	1.3	48.9	54.5	100.0	1,011.9	1,750.3	3.74	3.4		0.8	0.88	1.35	0.99	1.00	0.48	1.30	2.00	0.71	0.93		0.000	0.0000	0.00	0.00
26.50	26.25	110.0	49.4	65.0	0.0	7	40.5	0.1	1.46	1.11	1.0	1.3	48.9	54.5	100.0	1,013.4	1,755.6	3.77	3.4		0.8	0.88	1.35	0.99	1.00	0.49	1.30	2.00	0.72	0.94		0.000	0.0000	0.00	0.00
27.00	26.75	110.0	49.5	65.0	0.0	7	40.5	0.1	1.48	1.12	1.0	1.3	48.8	54.4	100.0	1,014.9	1,760.9	3.79	3.4		0.8	0.88	1.35	0.98	1.00	0.49	1.30	2.00	0.73	0.95		0.000	0.0000	0.00	0.00
27.50	27.25	110.0	49.6	65.0	0.0	7	40.5	0.1	1.51	1.13	1.0	1.3	48.8	54.4	100.0	1,016.4	1,766.0	3.81	3.4		0.8	0.87	1.35	0.98	1.00	0.49	1.30	2.00	0.74	0.96		0.000	0.0000	0.00	0.00
28.00	27.75	110.0	49.7	65.0	0.0	7	40.5	0.1	1.54	1.14	1.0	1.3	48.7	54.3	100.0	1,017.9	1,771.1	3.83	3.4		0.8	0.87	1.35	0.98	1.00	0.50	1.30	2.00	0.75	0.97		0.000	0.0000	0.00	0.00
28.50	28.25	110.0	49.8	65.0	0.0	7	40.5	0.1	1.57	1.15	1.0	1.3	48.7	54.3	100.0	1,019.3	1,776.1	3.85	3.3		0.8	0.87	1.35	0.97	1.00	0.50	1.30	2.00	0.76	0.97		0.000	0.0000	0.00	0.00
29.00	28.75	110.0	49.9	65.0	0.0	7	40.5	0.1	1.59	1.16	1.0	1.3	48.6	54.2	100.0	1,020.7	1,781.0	3.88	3.3		0.8	0.87	1.35	0.97	1.00	0.51	1.30	2.00	0.77	0.98		0.000	0.0000	0.00	0.00
29.50	29.25	110.0	49.9	65.0	0.0	7	40.5	0.1	1.62	1.18	1.0	1.3	48.6	54.2	100.0	1,022.1	1,785.8	3.90	3.3		0.8	0.86	1.35	0.97	1.00	0.51	1.30	2.00	0.78	0.99		0.000	0.0000	0.00	0.00
30.00	29.75	110.0	50.0	65.0	0.0	7	40.5	0.1	1.65	1.19	1.0	1.3	48.5	54.1	100.0	1,023.4	1,790.6	3.92	3.3		0.8	0.86	1.35	0.97	1.00	0.51	1.30	2.00	0.79	1.00		0.000	0.0000	0.00	0.00
30.50	30.25	110.0	50.1	65.0	0.0	7	40.5	0.1	1.68	1.20	1.0	1.3	48.4	54.0	100.0	1,024.8	1,795.2	3.94	3.3		0.8	0.86	1.35	0.96	1.00	0.51	1.30	2.00	0.80	1.01		0.000	0.0000	0.00	0.00
31.00	30.75	115.0	82.4	12.0	0.0	12	40.5	0.1	1.70	1.21	1.0	1.3	79.5	81.6	100.0	1,055.9	1,992.6	4.16	3.4		0.8	0.85	1.35	0.96	1.00	0.52	1.30	2.00	0.81	1.04		0.000	0.0000	0.00	0.00
31.50	31.25	115.0	82.5	12.0	0.0	12	40.5	0.1	1.73	1.23	1.0	1.3	79.4	81.4	100.0	1,057.3	1,997.7	4.18	3.4		0.8	0.85	1.35	0.96	1.00	0.52	1.30	2.00	0.83	1.05		0.000	0.0000	0.00	0.00
32.00	31.75	115.0	82.6	12.0	0.0	12	40.5	0.1	1.76	1.24	1.0	1.3	79.2	81.3	100.0	1,058.6	2,002.8	4.21	3.4		0.8	0.85	1.35	0.95	1.00	0.52	1.30	2.00	0.84	1.05		0.000	0.0000	0.00	0.00
32.50	32.25	115.0	82.7	12.0	0.0	12	40.5	0.1	1.79	1.25	1.0	1.3	79.1	81.2	100.0	1,059.9	2,007.8	4.23	3.4		0.8	0.85	1.35	0.95	1.00	0.53	1.30	2.00	0.85	1.06		0.000	0.0000	0.00	0.00
33.00	32.75	115.0	82.8	12.0	0.0	12	40.5	0.1	1.82	1.27	1.0	1.3	79.0	81.1	100.0	1,061.2	2,012.7	4.26	3.4		0.8	0.84	1.35	0.95	1.00	0.53	1.30	2.00	0.86	1.07		0.000	0.0000	0.00	0.00
33.25	33.13	115.0	82.9	12.0	0.0	12	40.5	0.1	1.84	1.28	1.0	1.3	78.9	81.0	100.0	1,062.2	2,016.3	4.27	3.4		0.8	0.84	1.35	0.94	1.00	0.53	1.30	2.00	0.87	1.08		0.000	0.0000	0.00	0.00
33.75	33.50	120.0	61.3	50.0	0.0	5	0.0	0.9	1.86	1.29	0.9	1.3	58.2	63.8		1,068.4	2,128.8	4.40	3.4	0.71	1.0	0.84	1.35	0.94	1.00	0.53	1.30		0.87	1.29				0.00	0.00
34.25	34.00	120.0	61.4	50.0	0.0	5	0.0	0.9	1.89	1.30	0.9	1.3	58.1	63.7		1,070.4	2,136.6	4.43	3.4	0.70	1.0	0.83	1.35	0.94	1.00	0.54	1.30		0.88	1.30				0.00	0.00

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Z_b (ft)	Z_m (ft)	γ (pcf)	N_{60}	FC(%)	CC(%)	USCS	φ (°)	C' (tsf)	σ_{v0} (tsf)	σ_{v0}' (tsf)	C_N	C_s	$(N_1)_{60}$	$(N_1)_{60cs}$	D_R (%)	V_s (ft/s)	G_0 (tsf)	σ_p' (tsf)	OCR_{G0}	S_u/σ_{v0}'	K_0	r_d	MSF	K_σ	K_α	$CSR_{7.5}$	$CRR_{7.5}$	FS	τ_{av} (tsf)	p (tsf)	G/G_0	γ_{max} (%)	ε_v (%)	ΔS_i	ΣS_i (in)
34.75	34.50	120.0	61.4	50.0	0.0	5	0.0	0.9	1.92	1.31	0.9	1.3	58.0	63.6		1,072.3	2,144.3	4.46	3.4	0.70	1.0	0.83	1.35	0.93	1.00	0.54	1.30		0.90	1.31				0.00	0.00
35.25	35.00	120.0	61.5	50.0	0.0	5	0.0	0.9	1.95	1.33	0.9	1.3	57.9	63.5		1,074.2	2,151.9	4.49	3.4	0.69	1.0	0.83	1.35	0.93	1.00	0.54	1.30		0.91	1.33				0.00	0.00
35.75	35.50	120.0	61.5	50.0	0.0	5	0.0	0.9	1.98	1.34	0.9	1.3	57.8	63.4		1,076.1	2,159.4	4.51	3.4	0.69	1.0	0.83	1.35	0.93	1.00	0.54	1.30		0.92	1.34				0.00	0.00
36.25	36.00	120.0	61.6	50.0	0.0	5	0.0	0.9	2.01	1.36	0.9	1.3	57.7	63.3		1,077.9	2,166.8	4.54	3.3	0.68	1.0	0.82	1.35	0.93	1.00	0.55	1.30		0.93	1.36				0.00	0.00
36.75	36.50	120.0	61.6	50.0	0.0	5	0.0	0.9	2.04	1.37	0.9	1.3	57.6	63.2		1,079.7	2,174.1	4.57	3.3	0.68	1.0	0.82	1.35	0.92	1.00	0.55	1.30		0.94	1.37				0.00	0.00
37.25	37.00	120.0	61.7	50.0	0.0	5	0.0	0.9	2.07	1.39	0.9	1.3	57.4	63.1		1,081.5	2,181.4	4.60	3.3	0.67	1.0	0.82	1.35	0.92	1.00	0.55	1.30		0.95	1.39				0.00	0.00
37.75	37.50	120.0	61.7	50.0	0.0	5	0.0	0.9	2.10	1.40	0.9	1.3	57.3	62.9		1,083.3	2,188.5	4.62	3.3	0.67	1.0	0.81	1.35	0.92	1.00	0.55	1.30		0.96	1.40				0.00	0.00
38.25	38.00	120.0	61.8	50.0	0.0	5	0.0	0.9	2.13	1.42	0.9	1.3	57.2	62.8		1,085.1	2,195.6	4.65	3.3	0.67	1.0	0.81	1.35	0.91	1.00	0.55	1.30		0.97	1.42				0.00	0.00
38.75	38.50	120.0	85.4	65.0	0.0	7	40.5	0.1	2.16	1.43	0.9	1.3	78.9	84.5	100.0	1,094.3	2,233.0	4.71	3.3		0.8	0.81	1.35	0.91	1.00	0.56	1.30	2.00	0.98	1.20		0.000	0.0000	0.00	0.00
39.25	39.00	120.0	85.5	65.0	0.0	7	40.5	0.1	2.19	1.44	0.9	1.3	78.8	84.4	100.0	1,095.5	2,237.9	4.73	3.3		0.8	0.80	1.35	0.91	1.00	0.56	1.30	2.00	0.99	1.21		0.000	0.0000	0.00	0.00
39.75	39.50	120.0	85.6	65.0	0.0	7	40.5	0.1	2.22	1.46	0.9	1.3	78.6	84.2	100.0	1,096.6	2,242.6	4.76	3.3		0.8	0.80	1.35	0.90	1.00	0.56	1.30	2.00	1.00	1.22		0.000	0.0000	0.00	0.00
40.25	40.00	120.0	85.6	65.0	0.0	7	40.5	0.1	2.25	1.47	0.9	1.3	78.5	84.1	100.0	1,097.8	2,247.4	4.78	3.2		0.8	0.80	1.35	0.90	1.00	0.56	1.30	2.00	1.01	1.23		0.000	0.0000	0.00	0.00
40.75	40.50	120.0	85.7	65.0	0.0	7	40.5	0.1	2.28	1.49	0.9	1.3	78.3	83.9	100.0	1,098.9	2,252.0	4.81	3.2		0.8	0.80	1.35	0.90	1.00	0.56	1.30	2.00	1.02	1.24		0.000	0.0000	0.00	0.00
41.25	41.00	120.0	85.7	65.0	0.0	7	40.5	0.1	2.31	1.50	0.9	1.3	78.2	83.7	100.0	1,100.0	2,256.6	4.83	3.2		0.7	0.79	1.35	0.89	1.00	0.56	1.30	2.00	1.03	1.25		0.000	0.0000	0.00	0.00
41.75	41.50	120.0	85.7	65.0	0.0	7	40.5	0.1	2.34	1.52	0.9	1.3	78.0	83.6	100.0	1,101.1	2,261.1	4.85	3.2		0.7	0.79	1.35	0.89	1.00	0.57	1.30	2.00	1.04	1.26		0.000	0.0000	0.00	0.00
42.25	42.00	120.0	85.8	65.0	0.0	7	40.5	0.1	2.37	1.53	0.9	1.3	77.8	83.4	100.0	1,102.2	2,265.5	4.88	3.2		0.7	0.79	1.35	0.89	1.00	0.57	1.30	2.00	1.04	1.27		0.000	0.0000	0.00	0.00
42.75	42.50	120.0	85.8	65.0	0.0	7	40.5	0.1	2.40	1.55	0.9	1.3	77.7	83.3	100.0	1,103.3	2,269.9	4.90	3.2		0.7	0.78	1.35	0.89	1.00	0.57	1.30	2.00	1.05	1.28		0.000	0.0000	0.00	0.00
43.25	43.00	120.0	85.9	65.0	0.0	7	40.5	0.1	2.43	1.56	0.9	1.3	77.5	83.1	100.0	1,104.3	2,274.3	4.93	3.2		0.7	0.78	1.35	0.88	1.00	0.57	1.30	2.00	1.06	1.29		0.000	0.0000	0.00	0.00
43.75	43.50	120.0	93.2	65.0	0.0	7	40.5	0.1	2.46	1.57	0.9	1.3	84.0	89.6	100.0	1,121.1	2,343.8	5.02	3.2		0.7	0.78	1.35	0.88	1.00	0.57	1.30	2.00	1.07	1.31		0.000	0.0000	0.00	0.00
44.25	44.00	120.0	93.2	65.0	0.0	7	40.5	0.1	2.49	1.59	0.9	1.3	83.8	89.4	100.0	1,122.1	2,348.1	5.04	3.2		0.7	0.77	1.35	0.88	1.00	0.57	1.30	2.00	1.08	1.32		0.000	0.0000	0.00	0.00
44.75	44.50	120.0	93.3	65.0	0.0	7	40.5	0.1	2.52	1.60	0.9	1.3	83.6	89.2	100.0	1,123.1	2,352.4	5.06	3.2		0.7	0.77	1.35	0.88	1.00	0.57	1.30	2.00	1.09	1.33		0.000	0.0000	0.00	0.00
45.25	45.00	120.0	93.3	65.0	0.0	7	40.5	0.1	2.55	1.62	0.9	1.3	83.5	89.1	100.0	1,124.1	2,356.6	5.09	3.1		0.7	0.77	1.35	0.87	1.00	0.58	1.30	2.00	1.10	1.34		0.000	0.0000	0.00	0.00
45.75	45.50	120.0	93.3	65.0	0.0	7	40.5	0.1	2.58	1.63	0.9	1.3	83.3	88.9	100.0	1,125.1	2,360.7	5.11	3.1		0.7	0.77	1.35	0.87	1.00	0.58	1.30	2.00	1.11	1.34		0.000	0.0000	0.00	0.00
46.25	46.00	120.0	93.4	65.0	0.0	7	40.5	0.1	2.61	1.65	0.9	1.3	83.1	88.7	100.0	1,126.1	2,364.8	5.13	3.1		0.7	0.76	1.35	0.87	1.00	0.58	1.30	2.00	1.12	1.35		0.000	0.0000	0.00	0.00
46.75	46.50	120.0	93.4	65.0	0.0	7	40.5	0.1	2.64	1.66	0.9	1.3	83.0	88.6	100.0	1,127.1	2,368.9	5.16	3.1		0.7	0.76	1.35	0.86	1.00	0.58	1.30	2.00	1.12	1.36		0.000	0.0000	0.00	0.00
47.25	47.00	120.0	93.4	65.0	0.0	7	40.5	0.1	2.67	1.67	0.9	1.3	82.8	88.4	100.0	1,128.0	2,372.8	5.18	3.1		0.7	0.76	1.35	0.86	1.00	0.58	1.30	2.00	1.13	1.37		0.000	0.0000	0.00	0.00
47.75	47.50	120.0	93.5	65.0	0.0	7	40.5	0.1	2.70	1.69	0.9	1.3	82.6	88.2	100.0	1,128.9	2,376.8	5.20	3.1		0.7	0.75	1.35	0.86	1.00	0.58	1.30	2.00	1.14	1.38		0.000	0.0000	0.00	0.00
48.25	48.00	120.0	93.5	65.0	0.0	7	40.5	0.1	2.73	1.70	0.9	1.3	82.5	88.1	100.0	1,129.9	2,380.7	5.22	3.1		0.7	0.75	1.35	0.86	1.00	0.58	1.30	2.00	1.15	1.39		0.000	0.0000	0.00	0.00
48.75	48.50	120.0	100.0	65.0	0.0	7	40.5	0.1	2.76	1.72	0.9	1.3	100.0	105.6	100.0	1,144.0	2,440.7	5.31	3.1		0.7	0.75	1.35	0.85	1.00	0.58	1.30	2.00	1.16	1.41		0.000	0.0000	0.00	0.00
49.25	49.00	120.0	100.0	65.0	0.0	7	40.5	0.1	2.79	1.73	0.9	1.3	100.0	105.6	100.0	1,144.9	2,444.4	5.33	3.1		0.7	0.74	1.35	0.85	1.00	0.58	1.30	2.00	1.16	1.42		0.000	0.0000	0.00	0.00
49.75	49.50	120.0	100.0	65.0	0.0	7	40.5	0.1	2.82	1.75	0.9	1.3	100.0	105.6	100.0	1,145.7	2,448.0	5.35	3.1		0.7	0.74	1.35	0.85	1.00	0.58	1.30	2.00	1.17	1.43		0.000	0.0000	0.00	0.00
50.25	50.00	120.0	100.0	65.0	0.0	7	40.5	0.1	2.85	1.76	0.9	1.3	100.0	105.6	100.0	1,146.6	2,451.7	5.37	3.1		0.7	0.74	1.35	0.85	1.00	0.58	1.30	2.00	1.18	1.44		0.000	0.0000	0.00	0.00
50.75	50.50	120.0	100.0	65.0	0.0	7	40.5	0.1	2.88	1.78	0.9	1.3	100.0	105.6	100.0	1,147.4	2,455.3	5.40	3.0		0.7	0.74	1.35	0.84	1.00	0.59	1.30		1.19	1.45		0.000	0.0000	0.00	0.00
51.25	51.00	120.0	100.0	65.0	0.0	7	40.5	0.1	2.91	1.79	0.9	1.3	100.0	105.6	100.0	1,148.3	2,458.8	5.42	3.0		0.7	0.73	1.35	0.84	1.00	0.59	1.30		1.20	1.46		0.000	0.0000	0.00	0.00
51.50	51.38	120.0	100.0	65.0	0.0	7	40.5	0.1	2.94	1.80	0.9	1.3	100.0	105.6	100.0	1,148.9	2,461.5	5.43	3.0		0.7	0.73	1.35	0.84	1.00	0.59	1.30		1.20	1.46		0.000	0.0000	0.00	0.00

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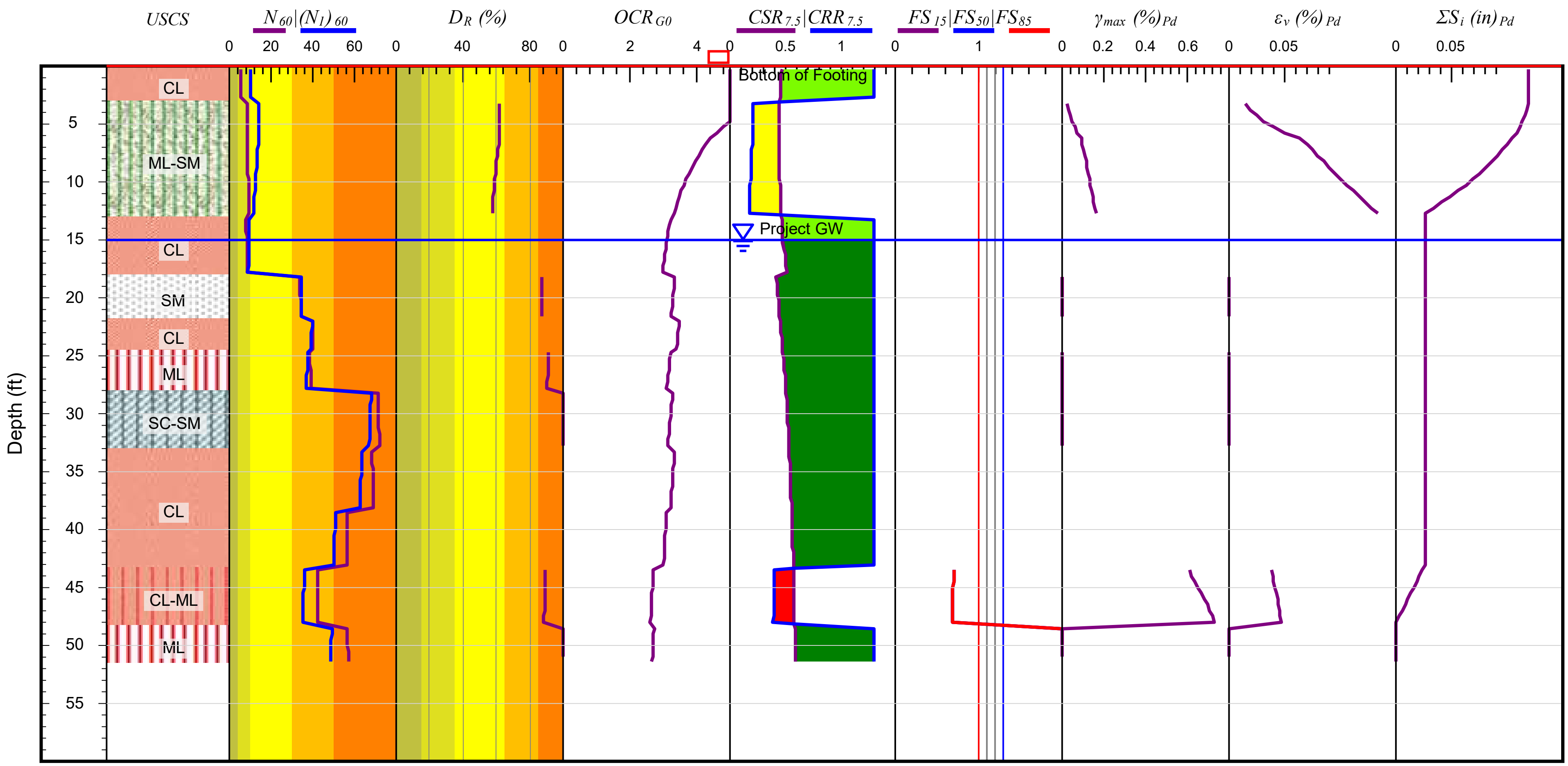

CL | SM | SC-SM
ML-SM | ML | CL-ML

Silt Correction:
$K=(1-FC)^{0.75}$

Earthquake & Groundwater Information:
Magnitude = 6.7
Max. Acceleration = 0.861 g
Project GW = 15 ft
Maximum Settlement = 0.12 in
Settl. at Bottom of Footing = 0.12 in

Liquefaction: Boulanger & Idriss (2010-16)
Settl.: [dry] Pradel (1998); [sat] Idriss & Boulanger (2008)
Lateral spreading: Idriss & Boulanger (2008)
M correction: [Sand; Clay] Boulanger & Idriss(2004)
σv correction: Idriss & Boulanger (2008)
Stress reduction: Idriss & Boulanger (2008)

GORIAN & ASSOCIATES, INC.

Seismic Settlement Potential - SPT Data					
Project:	Proposed Self-Storage				
Location:	18618 Oxnard St., Tarzana				
Project No.:	3191-0-0-100	Boring No.:	B-3	Figure:	3

X:\3191-0-0 Palatine Capital Partners Acquisitions, LLC - 18618 Oxnard St. Tarzana\Seismic Settlement\GeoSuite_3191-0-0-100_B-3.csv

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Z_b (ft)	Z_m (ft)	γ (pcf)	N_{60}	FC(%)	CC(%)	USCS	φ (°)	C' (tsf)	σ_{v0} (tsf)	σ_{v0}' (tsf)	C_N	C_s	$(N_1)_{60}$	$(N_1)_{60cs}$	D_R (%)	V_s (ft/s)	G_0 (tsf)	σ_p' (tsf)	OCR_{G0}	S_u/σ_{v0}'	K_0	r_d	MSF	K_σ	K_α	$CSR_{7.5}$	$CRR_{7.5}$	FS	τ_{av} (tsf)	p (tsf)	G/G_0	γ_{max} (%)	ε_v (%)	ΔS_i	ΣS_i (in)
0.50	0.25	115.0	5.8	50.0	0.0	5	0.0	0.0	0.01	0.01	1.7	1.1	9.9	15.5		659.0	776.2	0.07	5.0	0.80	1.0	1.00	1.10	1.10	1.00	0.46	1.30		0.01	0.01	0.0000			0.00	0.12
1.00	0.75	115.0	5.8	50.0	0.0	5	0.0	0.0	0.04	0.04	1.7	1.1	9.9	15.5		655.7	768.4	0.22	5.0	0.80	1.0	1.00	1.10	1.10	1.00	0.46	1.30		0.02	0.04	0.0000			0.00	0.12
1.50	1.25	115.0	5.8	50.0	0.0	5	0.0	0.1	0.07	0.07	1.7	1.1	9.9	15.5		652.6	761.1	0.36	5.0	0.80	1.0	1.00	1.10	1.10	1.00	0.46	1.30		0.04	0.07	0.0000			0.00	0.12
2.00	1.75	115.0	5.8	50.0	0.0	5	0.0	0.1	0.10	0.10	1.7	1.1	9.9	15.5		649.6	754.2	0.50	5.0	0.80	1.0	1.00	1.10	1.10	1.00	0.46	1.30		0.06	0.10	0.0000			0.00	0.12
2.50	2.25	115.0	5.8	50.0	0.0	5	0.0	0.1	0.13	0.13	1.7	1.1	9.9	15.5		646.8	747.6	0.65	5.0	0.80	1.0	0.99	1.10	1.10	1.00	0.46	1.30		0.07	0.13	0.0000			0.00	0.12
3.00	2.75	115.0	5.8	50.0	0.0	5	0.0	0.1	0.16	0.16	1.7	1.1	9.9	15.5		644.1	741.3	0.79	5.0	0.80	1.0	0.99	1.10	1.10	1.00	0.46	1.30		0.09	0.16	0.0000			0.00	0.12
3.50	3.25	115.0	8.5	62.0	0.0	8	32.7	0.0	0.19	0.19	1.7	1.1	14.5	20.1	62.1	672.9	809.2	0.93	5.0		1.1	0.99	1.15	1.10	1.00	0.44	0.21		0.10	0.20	0.0549	0.025	0.0149	0.00	0.12
4.00	3.75	115.0	8.5	62.0	0.0	8	32.7	0.0	0.22	0.22	1.7	1.1	14.5	20.1	62.1	670.1	802.5	1.08	5.0		1.1	0.99	1.15	1.10	1.00	0.44	0.21		0.12	0.23	0.0385	0.032	0.0195	0.00	0.12
4.50	4.25	115.0	8.5	62.0	0.0	8	32.7	0.0	0.24	0.24	1.7	1.1	14.5	20.1	62.1	667.4	796.0	1.22	5.0		1.1	0.99	1.15	1.10	1.00	0.44	0.21		0.14	0.26	0.0361	0.040	0.0249	0.00	0.12
5.00	4.75	115.0	8.5	62.0	0.0	8	32.7	0.0	0.27	0.27	1.7	1.1	14.5	20.1	62.1	664.8	789.8	1.37	5.0		1.1	0.99	1.15	1.10	1.00	0.44	0.21		0.15	0.29	0.0384	0.049	0.0315	0.00	0.11
5.50	5.25	115.0	8.5	62.0	0.0	8	32.7	0.0	0.30	0.30	1.7	1.1	14.5	20.1	62.1	662.3	783.9	1.46	4.8		1.1	0.98	1.15	1.10	1.00	0.44	0.21		0.17	0.32	0.0393	0.060	0.0399	0.00	0.11
6.00	5.75	115.0	8.5	62.0	0.0	8	32.7	0.0	0.33	0.33	1.7	1.1	14.5	20.1	62.1	659.9	778.2	1.52	4.6		1.0	0.98	1.15	1.10	1.00	0.44	0.21		0.18	0.34	0.0402	0.074	0.0503	0.00	0.11
6.50	6.25	115.0	8.5	62.0	0.0	8	32.7	0.0	0.36	0.36	1.7	1.1	14.5	20.1	62.1	657.6	772.7	1.58	4.4		1.0	0.98	1.15	1.10	1.00	0.44	0.21		0.20	0.37	0.0434	0.090	0.0629	0.00	0.10
7.00	6.75	115.0	8.5	62.0	0.0	8	32.5	0.0	0.39	0.39	1.6	1.1	14.0	19.6	61.3	665.7	791.9	1.66	4.3		1.0	0.98	1.14	1.10	1.00	0.44	0.20		0.21	0.39	0.0489	0.098	0.0700	0.00	0.10
7.50	7.25	115.0	8.6	62.0	0.0	8	32.3	0.0	0.42	0.42	1.6	1.1	13.6	19.2	60.8	674.7	813.5	1.73	4.2		1.0	0.98	1.14	1.10	1.00	0.44	0.20		0.23	0.42	0.0541	0.104	0.0754	0.00	0.10
8.00	7.75	115.0	8.7	62.0	0.0	8	32.2	0.0	0.45	0.45	1.5	1.1	13.4	19.0	60.5	683.6	835.2	1.80	4.0		1.0	0.97	1.13	1.10	1.00	0.44	0.19		0.24	0.44	0.0595	0.109	0.0801	0.00	0.09
8.50	8.25	115.0	8.8	62.0	0.0	8	32.2	0.0	0.47	0.47	1.5	1.1	13.2	18.8	60.1	692.0	855.7	1.87	3.9		1.0	0.97	1.13	1.09	1.00	0.44	0.19		0.26	0.47	0.0648	0.114	0.0850	0.01	0.09
9.00	8.75	115.0	8.9	62.0	0.0	8	32.1	0.0	0.50	0.50	1.5	1.1	13.0	18.6	59.8	699.8	875.3	1.94	3.9		1.0	0.97	1.13	1.09	1.00	0.44	0.19		0.27	0.49	0.0702	0.120	0.0900	0.01	0.08
9.50	9.25	115.0	9.0	62.0	0.0	8	32.0	0.0	0.53	0.53	1.4	1.1	12.8	18.4	59.5	707.3	894.0	2.01	3.8		1.0	0.97	1.13	1.08	1.00	0.45	0.19		0.29	0.51	0.0756	0.125	0.0951	0.01	0.07
10.00	9.75	115.0	9.1	62.0	0.0	8	31.9	0.0	0.56	0.56	1.4	1.1	12.6	18.2	59.1	714.3	911.8	2.07	3.7		0.9	0.97	1.12	1.07	1.00	0.45	0.19		0.30	0.54	0.0810	0.131	0.1004	0.01	0.07
10.50	10.25	115.0	9.2	62.0	0.0	8	31.8	0.0	0.59	0.59	1.4	1.1	12.4	18.0	58.8	721.0	928.9	2.13	3.6		0.9	0.96	1.12	1.07	1.00	0.45	0.18		0.32	0.56	0.0864	0.136	0.1058	0.01	0.06
11.00	10.75	115.0	9.3	62.0	0.0	8	31.7	0.0	0.62	0.62	1.3	1.1	12.2	17.8	58.5	727.3	945.3	2.19	3.6		0.9	0.96	1.12	1.06	1.00	0.45	0.18		0.33	0.59	0.0919	0.141	0.1113	0.01	0.06
11.50	11.25	115.0	9.3	62.0	0.0	8	31.6	0.0	0.65	0.65	1.3	1.1	12.0	17.6	58.2	733.3	961.1	2.25	3.5		0.9	0.96	1.12	1.06	1.00	0.45	0.18		0.35	0.61	0.0973	0.147	0.1169	0.01	0.05
12.00	11.75	115.0	9.4	62.0	0.0	8	31.6	0.0	0.68	0.68	1.3	1.1	11.9	17.5	58.0	739.1	976.3	2.31	3.4		0.9	0.96	1.12	1.05	1.00	0.46	0.18		0.36	0.63	0.1027	0.152	0.1227	0.01	0.04
12.50	12.25	115.0	9.5	62.0	0.0	8	31.5	0.0	0.70	0.70	1.2	1.1	11.7	17.3	57.7	744.6	991.0	2.37	3.4		0.9	0.95	1.11	1.05	1.00	0.46	0.18		0.38	0.66	0.1081	0.158	0.1285	0.01	0.03
13.00	12.75	115.0	9.5	62.0	0.0	8	31.4	0.0	0.73	0.73	1.2	1.1	11.5	17.1	57.4	749.9	1,005.1	2.43	3.3		0.9	0.95	1.11	1.04	1.00	0.46	0.18		0.39	0.68	0.1135	0.163	0.1345	0.01	0.03
13.50	13.25	125.0	8.1	50.0	0.0	5	0.0	0.5	0.76	0.76	1.2	1.1	9.7	15.3		724.3	1,019.1	2.49	3.3	0.68	1.0	0.95	1.10	1.03	1.00	0.47	1.30		0.41	0.76	0.0000			0.00	0.03
14.00	13.75	125.0	8.2	50.0	0.0	5	0.0	0.5	0.79	0.79	1.2	1.1	9.6	15.2		730.4	1,036.4	2.55	3.2	0.66	1.0	0.95	1.09	1.03	1.00	0.47	1.30		0.42	0.79	0.0000			0.00	0.03
14.50	14.25	125.0	8.2	50.0	0.0	5	0.0	0.5	0.83	0.83	1.1	1.1	9.4	15.0		736.3	1,053.1	2.61	3.2	0.65	1.0	0.95	1.09	1.03	1.00	0.47	1.30		0.44	0.83	0.0000			0.00	0.03
15.00	14.75	125.0	8.3	50.0	0.0	5	0.0	0.5	0.86	0.86	1.1	1.1	9.3	14.9		742.0	1,069.4	2.67	3.1	0.64	1.0	0.94	1.09	1.02	1.00	0.47	1.30		0.45	0.86	0.0000			0.00	0.03
15.50	15.25	125.0	8.3	50.0	0.0	5	0.0	0.6	0.89	0.88	1.1	1.1	9.2	14.8		746.2	1,081.7	2.72	3.1	0.63	1.0	0.94	1.09	1.02	1.00	0.48	1.30		0.47	0.88				0.00	0.03
16.00	15.75	125.0	8.4	50.0	0.0	5	0.0	0.6	0.92	0.90	1.1	1.1	9.2	14.8		749.1	1,090.2	2.75	3.1	0.62	1.0	0.94	1.09	1.02	1.00	0.49	1.30		0.48	0.90				0.00	0.03
16.50	16.25	125.0	8.4	50.0	0.0	5	0.0	0.6	0.95	0.91	1.1	1.1	9.1	14.7		752.0	1,098.5	2.78	3.0	0.61	1.0	0.94	1.09	1.02	1.00	0.49	1.30		0.50	0.91				0.00	0.03
17.00	16.75	125.0	8.5	50.0	0.0	5	0.0	0.6	0.98	0.93	1.1	1.1	9.1	14.7		754.8	1,106.7	2.81	3.0	0.61	1.0	0.93	1.09	1.01	1.00	0.50	1.30		0.51	0.93				0.00	0.03
17.50	17.25	125.0	8.5	50.0	0.0	5	0.0	0.6	1.01	0.94	1.1	1.1	9.0	14.7		757.5	1,114.7	2.84	3.0	0.60	1.0	0.93	1.09	1.01	1.00	0.51	1.30		0.53	0.94				0.00	0.03
18.00	17.75	125.0	8.5	50.0	0.0	5	0.0	0.6	1.04	0.96	1.1	1.1	9.0	14.6		760.2	1,122.7	2.86	3.0	0.60	1.0	0.93	1.09	1.01	1.00	0.51	1.30		0.54	0.96				0.00	0.03
18.50	18.25	110.0	33.7	21.0	0.0	12	39.1	0.1	1.07	0.97	1.0	1.3	34.7	39.3	87.0	921.4	1,451.4	3.26	3.4		0.8	0.92	1.35	1.02	1.00	0.41	1.30	2.00	0.56	0.84		0.000	0.0000	0.00	0.03
19.00	18.75	110.0	33.9	21.0	0.0	12	39.1	0.1	1.10	0.98	1.0	1.3	34.7	39.3	87.0	923.4	1,457.5	3.28	3.3		0.8	0.92	1.35	1.02	1.00	0.42	1.30	2.00	0.57	0.85		0.000	0.0000	0.00	0.03
19.50	19.25	110.0	34.0	21.0	0.0	12	39.1	0.1	1.13	1.00	1.0	1.3	34.7	39.3	86.9	925.2	1,463.4	3.30	3.3		0.8	0.92	1.35	1.02	1.00	0.42	1.30	2.00	0.58	0.85		0.000	0.0000	0.00	0.03
20.00	19.75	110.0	34.1	21.0	0.0	12	39.1	0.1	1.16	1.01	1.0	1.3	34.7	39.3	86.9	927.1	1,469.2	3.33	3.3		0.8	0.92	1.35	1.01	1.00	0.43	1.30	2.00	0.59	0.86		0.000	0.0000	0.00	0.03
20.50	20.25	110.0	34.2	21.0	0.0	12	39.1	0.1	1.18	1.02	1.0	1.3	34.7	39.3	86.9	928.9	1,475.0	3.35	3.3		0.8	0.91	1.35	1.01	1.00	0.44	1.30	2.00	0.61	0.87		0.000	0.0000	0.00	0.03
21.00	20.75	110.0	34.3	21.0	0.0	12	39.1	0.1	1.21	1.03	1.0	1.3	34.6	39.3	86.9	930.6	1,480.6	3.37	3.3		0.8	0.91	1.35	1.01	1.00	0.44	1.30	2.00	0.62	0.88		0.000	0.0000	0.00	0.03
21.50	21.25	110.0	34.5	21.0	0.0	12	39.1	0.1	1.24	1.04	1.0	1.3	34.6	39.2	86.9	932.4	1,486.0	3.40	3.3		0.8	0.91	1.35	1.00	1.00	0.44	1.30	2.00	0.63	0.89		0.000	0.0000	0.00	0.03
21.75	21.63	110.0	34.5	21.0	0.0	12	39.1	0.1	1.26	1.05	1.0	1.3	34.6	39.3	86.9	933.6	1,490.0	3.41	3.2		0.8	0.91	1.35	1.00	1.00	0.45	1.30	2.00	0.64	0.89		0.000	0.0000	0.00	0.03
22.25	22.00	125.0	39.8	50.0	0.0	5	0.0	0.8	1.28	1.06	1.0	1.3	39.7	45.3		951.8	1,759.6	3.71	3.5	0.72	1.0	0.90	1.35	1.00	1.00	0.45	1.30		0.65	1.06				0.00	0.03
22.75	22.50	125.0	39.9	50.0	0.0	5	0.0	0.8	1.31	1.08	1.0	1.3	39.7	45.3		954.4	1,769.3	3.74	3.5	0.71	1.0	0.90	1.35	0.99	1.00	0.46	1.30		0.66	1.08				0.00	0.03
23.25	23.00	125.0	40.0	50.0	0.0	5	0.0	0.8	1.34	1.09	1.0	1.3	39.6	45.2		956.9	1,778.8	3.77	3.4	0.71	1.0	0.90	1.35	0.99	1.00	0.46	1.30		0.68	1.09				0.00	0.03
23.75	23.50	125.0	40.1	50.0	0.0	5	0.0	0.8	1.38	1.11	1.0	1.3	39.5	45.1		959.4	1,788.2	3.81	3.4	0.70	1.0	0.90	1.35	0.99	1.00	0.47	1.30		0.69	1.11				0.00	0.03
24.25	24.00	125.0	40.2	50.0	0.0	5	0.0	0.8	1.41	1.13	1.0	1.3	39.5	45.1		961.9	1,797.4	3.84	3.4	0.69	1.0	0.89	1.35	0.98	1.00	0.47	1.30		0.70	1.13				0.00	0.03
24.50	24.38	125.0	40.3	50.0	0.0	5	0.0	0.8	1.43	1.14	1.0	1.3	39.4	45.0		963.7	1,804.2	3.86	3.4	0.69	1.0	0.89	1.35	0.98	1.00	0.47	1.30		0.71	1.14				0.00	0.03
25.00	24.75	125.0	38.6	65.0	0.0	7	39.9	0.1	1.45	1.15	1.0	1.3	37.6	43.2	91.1	918.2	1,637.7	3.70	3.2		0.8	0.89	1.35	0.98	1.00	0.48	1.30	2.00	0.72	0.97		0.000	0.0000	0.00	0.03
25.50	25.25	125.0	38.7	65.0	0.0	7	39.9	0.1	1.49	1.17	1.0	1.3	37.5	43.1	91.0	920.0	1,644.0	3.73	3.2		0.8	0.89	1.35	0.97	1.00	0.48	1.30	2.00	0.74	0.98		0.000	0.0000	0.00	0.03
26.00	25.75	125.0	38.8	65.0	0.0	7	39.8	0.1	1.52	1.18	1.0	1.3	37.4	43.0	91.0	921.7	1,650.3	3.76	3.2		0.8	0.88	1.35	0.97	1.00	0.49	1.30	2.00	0.75	0.99		0.000	0.0000	0.00	0.03
26.50	26.25	125.0	38.8	65.0	0.0	7	39.8	0.1	1.55	1.20	1.0	1.3	37.3	42.9	90.9	923.4	1,656.4	3.79	3.2		0.8	0.88	1.35	0.96	1.00	0.49	1.30	2.00	0.76	1.00		0.000	0.0000	0.00	0.03
27.00	26.75	125.0	38.9	65.0	0.0	7	39.8	0.1	1.58	1.21	1.0	1.3	37.2	42.8	90.8	925.1	1,662.5	3.81	3.1		0.7	0.88	1.35	0.96	1.00	0.49	1.30	2.00	0.78	1.01		0.000	0.0000	0.00	0.03
27.50	27.25	125.0	39.0	65.0	0.0	7	39.8	0.1	1.61	1.23	1.0	1.3	37.2	42.7	90.7	926.8	1,668.5	3.84	3.1		0.7	0.87	1.35	0.96	1.00	0.50	1.30	2.00	0.79	1.02		0.000	0.0000	0.00	0.03
28.00	27.75	125.0	39.0	65.0	0.0	7	39.8	0.1	1.64	1.24	1.0	1.3	37.1	42.7	90.6	928.4	1,674.2	3.87	3.1		0.7	0.87	1.35	0.95	1.00	0.50	1.30	2.00	0.80	1.03		0.000	0.0000	0.00	0.03
28.50	28.25	120.0	71.1	12.0	0.0	10	40.5	0.1	1.67	1.26	1.0	1.3	67.9	70.0	100.0	1,010.3	1,903.5	4.13	3.3		0.8	0.87	1.35	0.95	1.00	0.50	1.30	2.00	0.81	1.06		0.000	0.0000	0.00	0.03
29.00	28.75	120.0	71.2	12.0	0.0	10	40.5	0.1	1.70	1.27	1.0	1.3	67.8	69.9	100.0	1,011.7	1,908.8	4.16	3.3		0.8	0.87	1.35	0.94	1.00	0.51	1.30	2.00	0.82	1.07		0.000	0.0000	0.00	0.03
29.50	29.25	120.0	71.3	12.0	0.0	10	40.5	0.1	1.73	1.29	0.9	1.3	67.8	69.8	100.0	1,013.1	1,914.1	4.18	3.3		0.8	0.86	1.35	0.94	1.00	0.51	1.30	2.00	0.84	1.08		0.000	0.0000	0.00	0.03
30.00	29.75	120.0	71.4	12.0	0.0	10	40.5	0.1	1.76	1.30	0.9	1.3	67.7	69.7	100.0	1,014.5	1,919.2	4.21	3.2		0.8	0.86	1.35	0.94	1.00	0.51	1.30	2.00	0.85	1.09		0.000	0.0000	0.00	0.03
30.50	30.25	120.0	71.5	12.0	0.0	10	40.5	0.1	1.79	1.32	0.9	1.3	67.6	69.6	100.0	1,015.8	1,924.3	4.23	3.2		0.7	0.86	1.35	0.93	1.00	0.52	1.30	2.00	0.86	1.10		0.000	0.0000	0.00	0.03
31.00	30.75	120.0	71.6	12.0	0.0	10	40.5	0.1	1.82	1.33	0.9	1.3	67.5	69.5	100.0	1,017.1	1,929.2	4.26	3.2		0.7	0.85	1.35	0.93	1.00	0.52	1.30	2.00	0.87	1.11		0.000	0.0000	0.00	0.03
31.50	31.25	120.0	71.7	12.0	0.0	10	40.5	0.1	1.85	1.34	0.9	1.3	67.3	69.4	100.0	1,018.4	1,934.1	4.28	3.2		0.7	0.85	1.35	0.93	1.00	0.52	1.30	2.00	0.88	1.12		0.000	0.0000	0.00	0.03
32.00	31.75	120.0	71.8	12.0	0.0	10	40.5	0.1	1.88	1.36	0.9	1.3	67.2	69.3	100.0	1,019.7	1,938.9	4.31	3.2		0.7	0.85	1.35	0.92	1.00	0.53	1.30	2.00	0.89	1.13		0.000	0.0000	0.00	0.03
32.50	32.25	120.0	71.9	12.0	0.0	10	40.5	0.1	1.91	1.37	0.9	1.3	67.1	69.2	100.0	1,020.9	1,943.6	4.33	3.2		0.7	0.85	1.35	0.92	1.00	0.53	1.30	2.00	0.90	1.14		0.000	0.0000	0.00	0.03
33.00	32.75	120.0	72.0	12.0	0.0	10	40.5	0.1	1.94	1.39	0.9	1.3	67.0	69.1	100.0	1,022.1	1,948.3	4.36	3.1		0.7	0.84	1.35	0.92	1.00	0.53	1.30	2.00	0.92	1.14		0.000	0.0000	0.00	0.03
33.50	33.25	120.0	68.5	50.0	0.0	5	0.0	1.0	1.97	1.40	0.9	1.3	63.6	69.2		1,100.9	2,260.4	4.70	3.3	0.68	1.0	0.84	1.35	0.92	1.00	0.53	1.30		0.93	1.40				0.00	0.03
34.00	33.75	120.0	68.5	50.0	0.0	5	0.0	1.0	2.00	1.42	0.9	1.3	63.5	69.1		1,102.8	2,267.9	4.72	3.3	0.68	1.0	0.84	1.35	0.91	1.00	0.54	1.30		0.94	1.42				0.00	0.03

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Z_b (ft)	Z_m (ft)	γ (pcf)	N_{60}	FC(%)	CC(%)	USCS	φ (°)	C' (tsf)	σ_{v0} (tsf)	σ_{v0}' (tsf)	C_N	C_s	$(N_1)_{60}$	$(N_1)_{60cs}$	D_R (%)	V_s (ft/s)	G_0 (tsf)	σ_p' (tsf)	OCR_{G0}	S_u/σ_{v0}'	K_0	r_d	MSF	K_σ	K_α	$CSR_{7.5}$	$CRR_{7.5}$	FS	τ_{av} (tsf)	p (tsf)	G/G_0	γ_{max} (%)	ε_v (%)	ΔS_i	ΣS_i (in)
34.50	34.25	120.0	68.6	50.0	0.0	5	0.0	1.0	2.03	1.43	0.9	1.3	63.4	69.0		1,104.6	2,275.3	4.75	3.3	0.67	1.0	0.83	1.35	0.91	1.00	0.54	1.30		0.95	1.43				0.00	0.03
35.00	34.75	120.0	68.7	50.0	0.0	5	0.0	1.0	2.06	1.45	0.9	1.3	63.3	68.9		1,106.4	2,282.6	4.78	3.3	0.67	1.0	0.83	1.35	0.91	1.00	0.54	1.30		0.96	1.45				0.00	0.03
35.50	35.25	120.0	68.7	50.0	0.0	5	0.0	1.0	2.09	1.46	0.9	1.3	63.2	68.8		1,108.1	2,289.9	4.81	3.3	0.67	1.0	0.83	1.35	0.90	1.00	0.54	1.30		0.97	1.46				0.00	0.03
36.00	35.75	120.0	68.8	50.0	0.0	5	0.0	1.0	2.12	1.47	0.9	1.3	63.0	68.7		1,109.8	2,297.0	4.83	3.3	0.66	1.0	0.82	1.35	0.90	1.00	0.55	1.30		0.98	1.47				0.00	0.03
36.50	36.25	120.0	68.9	50.0	0.0	5	0.0	1.0	2.15	1.49	0.9	1.3	62.9	68.6		1,111.6	2,304.1	4.86	3.3	0.66	1.0	0.82	1.35	0.90	1.00	0.55	1.30		0.99	1.49				0.00	0.03
37.00	36.75	120.0	68.9	50.0	0.0	5	0.0	1.0	2.18	1.50	0.9	1.3	62.8	68.4		1,113.2	2,311.1	4.89	3.3	0.65	1.0	0.82	1.35	0.89	1.00	0.55	1.30		1.00	1.50				0.00	0.03
37.50	37.25	120.0	69.0	50.0	0.0	5	0.0	1.0	2.21	1.52	0.9	1.3	62.7	68.3		1,114.9	2,318.0	4.91	3.2	0.65	1.0	0.82	1.35	0.89	1.00	0.55	1.30		1.01	1.52				0.00	0.03
38.00	37.75	120.0	69.0	50.0	0.0	5	0.0	1.0	2.24	1.53	0.9	1.3	62.6	68.2		1,116.5	2,324.9	4.94	3.2	0.65	1.0	0.81	1.35	0.89	1.00	0.55	1.30		1.02	1.53				0.00	0.03
38.25	38.13	120.0	69.0	50.0	0.0	5	0.0	1.0	2.26	1.54	0.9	1.3	62.5	68.1		1,117.8	2,330.0	4.96	3.2	0.64	1.0	0.81	1.35	0.89	1.00	0.55	1.30		1.03	1.54				0.00	0.03
38.75	38.50	120.0	56.4	50.0	0.0	5	0.0	1.0	2.29	1.55	0.9	1.3	50.9	56.6		1,084.6	2,193.9	4.83	3.1	0.62	1.0	0.81	1.35	0.88	1.00	0.56	1.30		1.03	1.55				0.00	0.03
39.25	39.00	120.0	56.4	50.0	0.0	5	0.0	1.0	2.32	1.57	0.9	1.3	50.9	56.5		1,086.2	2,200.2	4.86	3.1	0.61	1.0	0.80	1.35	0.88	1.00	0.56	1.30		1.04	1.57				0.00	0.03
39.75	39.50	120.0	56.4	50.0	0.0	5	0.0	1.0	2.35	1.58	0.9	1.3	50.8	56.4		1,087.7	2,206.5	4.88	3.1	0.61	1.0	0.80	1.35	0.88	1.00	0.56	1.30		1.05	1.58				0.00	0.03
40.25	40.00	120.0	56.5	50.0	0.0	5	0.0	1.0	2.38	1.60	0.9	1.3	50.7	56.3		1,089.3	2,212.7	4.91	3.1	0.61	1.0	0.80	1.35	0.88	1.00	0.56	1.30		1.06	1.60				0.00	0.03
40.75	40.50	120.0	56.5	50.0	0.0	5	0.0	1.0	2.41	1.61	0.9	1.3	50.6	56.2		1,090.8	2,218.8	4.93	3.1	0.60	1.0	0.80	1.35	0.87	1.00	0.56	1.30		1.07	1.61				0.00	0.03
41.25	41.00	120.0	56.5	50.0	0.0	5	0.0	1.0	2.44	1.63	0.9	1.3	50.4	56.1		1,092.3	2,224.9	4.96	3.1	0.60	1.0	0.79	1.35	0.87	1.00	0.56	1.30		1.08	1.63				0.00	0.03
41.75	41.50	120.0	56.6	50.0	0.0	5	0.0	1.0	2.47	1.64	0.9	1.3	50.4	56.0		1,093.7	2,230.9	4.98	3.0	0.60	1.0	0.79	1.35	0.87	1.00	0.57	1.30		1.09	1.64				0.00	0.03
42.25	42.00	120.0	56.6	50.0	0.0	5	0.0	1.0	2.50	1.65	0.9	1.3	50.3	55.9		1,095.2	2,236.8	5.01	3.0	0.59	1.0	0.79	1.35	0.87	1.00	0.57	1.30		1.10	1.65				0.00	0.03
42.75	42.50	120.0	56.6	50.0	0.0	5	0.0	1.0	2.53	1.67	0.9	1.3	50.2	55.8		1,096.6	2,242.7	5.03	3.0	0.59	1.0	0.78	1.35	0.86	1.00	0.57	1.30		1.11	1.67				0.00	0.03
43.25	43.00	120.0	56.6	50.0	0.0	5	0.0	1.0	2.56	1.68	0.9	1.3	50.1	55.7		1,098.1	2,248.5	5.06	3.0	0.59	1.0	0.78	1.35	0.86	1.00	0.57	1.30		1.12	1.68				0.00	0.03
43.75	43.50	120.0	42.0	65.0	0.0	6	39.5	0.1	2.59	1.70	0.9	1.3	36.1	41.6	89.5	991.9	1,834.8	4.61	2.7		0.7	0.78	1.35	0.86	1.00	0.57	0.40	0.70	1.13	1.34		0.609	0.0384	0.00	0.02
44.25	44.00	120.0	42.1	65.0	0.0	6	39.5	0.1	2.62	1.71	0.9	1.3	36.0	41.5	89.4	992.9	1,838.5	4.63	2.7		0.7	0.77	1.35	0.86	1.00	0.57	0.40	0.70	1.13	1.35		0.623	0.0394	0.00	0.02
44.75	44.50	120.0	42.1	65.0	0.0	6	39.4	0.1	2.65	1.73	0.9	1.3	35.9	41.5	89.3	993.9	1,842.2	4.65	2.7		0.7	0.77	1.35	0.86	1.00	0.57	0.40	0.70	1.14	1.36		0.637	0.0404	0.00	0.02
45.25	45.00	120.0	42.1	65.0	0.0	6	39.4	0.1	2.68	1.74	0.9	1.3	35.8	41.4	89.2	994.9	1,845.9	4.67	2.7		0.7	0.77	1.35	0.86	1.00	0.57	0.40	0.69	1.15	1.37		0.651	0.0414	0.00	0.02
45.75	45.50	120.0	42.1	65.0	0.0	6	39.4	0.1	2.71	1.76	0.8	1.3	35.7	41.3	89.1	995.9	1,849.5	4.69	2.7		0.7	0.77	1.35	0.85	1.00	0.57	0.40	0.69	1.16	1.38		0.665	0.0424	0.00	0.01
46.25	46.00	120.0	42.1	65.0	0.0	6	39.4	0.1	2.74	1.77	0.8	1.3	35.6	41.2	89.0	996.9	1,853.1	4.71	2.7		0.7	0.76	1.35	0.85	1.00	0.57	0.39	0.69	1.17	1.39		0.680	0.0435	0.00	0.01
46.75	46.50	120.0	42.1	65.0	0.0	6	39.3	0.1	2.77	1.78	0.8	1.3	35.5	41.1	88.9	997.8	1,856.7	4.73	2.7		0.7	0.76	1.35	0.85	1.00	0.57	0.39	0.69	1.18	1.40		0.694	0.0445	0.00	0.01
47.25	47.00	120.0	42.1	65.0	0.0	6	39.3	0.1	2.80	1.80	0.8	1.3	35.4	41.0	88.8	998.8	1,860.2	4.75	2.6		0.7	0.76	1.35	0.85	1.00	0.57	0.39	0.68	1.18	1.41		0.709	0.0456	0.00	0.01
47.75	47.50	120.0	42.1	65.0	0.0	6	39.3	0.1	2.83	1.81	0.8	1.3	35.3	40.9	88.7	999.7	1,863.6	4.77	2.6		0.7	0.75	1.35	0.85	1.00	0.57	0.39	0.68	1.19	1.42		0.718	0.0463	0.00	0.00
48.25	48.00	120.0	42.2	65.0	0.0	6	39.3	0.1	2.86	1.83	0.8	1.3	35.2	40.8	88.6	1,000.6	1,867.0	4.79	2.6		0.7	0.75	1.35	0.85	1.00	0.57	0.39	0.68	1.20	1.43		0.733	0.0474	0.00	0.00
48.75	48.50	120.0	56.8	65.0	0.0	7	40.5	0.1	2.89	1.84	0.9	1.3	49.1	54.7	100.0	1,046.3	2,041.6	5.02	2.7		0.7	0.75	1.35	0.83	1.00	0.58	1.30	2.00	1.21	1.44		0.000	0.0000	0.00	0.00
49.25	49.00	120.0	56.8	65.0	0.0	7	40.5	0.1	2.92	1.86	0.9	1.3	49.0	54.6	100.0	1,047.1	2,044.8	5.04	2.7		0.7	0.74	1.35	0.83	1.00	0.58	1.30	2.00	1.22	1.45		0.000	0.0000	0.00	0.00
49.75	49.50	120.0	56.9	65.0	0.0	7	40.5	0.1	2.95	1.87	0.9	1.3	48.9	54.5	100.0	1,047.9	2,047.9	5.06	2.7		0.7	0.74	1.35	0.83	1.00	0.58	1.30	2.00	1.22	1.46		0.000	0.0000	0.00	0.00
50.25	50.00	120.0	56.9	65.0	0.0	7	40.5	0.1	2.98	1.88	0.9	1.3	48.8	54.4	100.0	1,048.7	2,051.0	5.08	2.7		0.7	0.74	1.35	0.83	1.00	0.58	1.30	2.00	1.23	1.47		0.000	0.0000	0.00	0.00
50.75	50.50	120.0	56.9	65.0	0.0	7	40.5	0.1	3.01	1.90	0.9	1.3	48.8	54.3	100.0	1,049.5	2,054.1	5.10	2.7		0.7	0.74	1.35	0.82	1.00	0.58	1.30		1.24	1.48		0.000	0.0000	0.00	0.00
51.25	51.00	120.0	56.9	65.0	0.0	7	40.5	0.1	3.04	1.91	0.9	1.3	48.7	54.3	100.0	1,050.3	2,057.1	5.12	2.7		0.7	0.73	1.35	0.82	1.00	0.59	1.30		1.25	1.49		0.000	0.0000	0.00	0.00
51.50	51.38	120.0	56.9	65.0	0.0	7	40.5	0.1	3.06	1.92	0.9	1.3	48.6	54.2	100.0	1,050.9	2,059.4	5.13	2.7		0.7	0.73	1.35	0.82	1.00	0.59	1.30		1.25	1.49		0.000	0.0000	0.00	0.00

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CL
SM-ML
ML
ML-SM
SM

Silt Correction:
$K=(1-FC)^{0.75}$

Earthquake & Groundwater Information:
Magnitude = 6.7
Max. Acceleration = 0.861 g
Project GW = 15 ft
Maximum Settlement = 0.08 in
Settl. at Bottom of Footing = 0.08 in

Liquefaction: Boulanger & Idriss (2010-16)
Settl.: [dry] Pradel (1998); [sat] Idriss & Boulanger (2008)
Lateral spreading: Idriss & Boulanger (2008)
M correction: [Sand; Clay] Boulanger & Idriss(2004)
σv correction: Idriss & Boulanger (2008)
Stress reduction: Idriss & Boulanger (2008)

GORIAN & ASSOCIATES, INC.

Seismic Settlement Potential - SPT Data

Project:	Proposed Self-Storage		
Location:	18618 Oxnard St., Tarzana		
Project No.:	3191-0-0-100	Boring No.:	B-4
Figure:	4		

X:\3191-0-0 Palatine Capital Partners Acquisitions, LLC - 18618 Oxnard St. Tarzana\Seismic Settlement\GeoSuite_3191-0-0-100_B-4.csv

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Z_b (ft)	Z_m (ft)	γ (pcf)	N_{60}	FC(%)	CC(%)	USCS	φ (°)	C' (tsf)	σ_{v0} (tsf)	σ_{v0}' (tsf)	C_N	C_s	$(N_1)_{60}$	$(N_1)_{60cs}$	D_R (%)	V_s (ft/s)	G_0 (tsf)	σ_p' (tsf)	OCR_{G0}	S_u/σ_{v0}'	K_0	r_d	MSF	K_σ	K_α	$CSR_{7.5}$	$CRR_{7.5}$	FS	τ_{av} (tsf)	p (tsf)	G/G_0	γ_{max} (%)	ε_v (%)	ΔS_i	ΣS_i (in)
0.50	0.25	115.0	4.7	50.0	0.0	5	0.0	0.0	0.01	0.01	1.7	1.1	7.9	13.6		640.9	734.2	0.07	5.0	0.80	1.0	1.00	1.08	1.10	1.00	0.47	1.30		0.01	0.01	0.0000			0.00	0.08
1.00	0.75	115.0	4.7	50.0	0.0	5	0.0	0.0	0.04	0.04	1.7	1.1	7.9	13.6		637.9	727.2	0.22	5.0	0.80	1.0	1.00	1.08	1.10	1.00	0.47	1.30		0.02	0.04	0.0000			0.00	0.08
1.50	1.25	115.0	4.7	50.0	0.0	5	0.0	0.1	0.07	0.07	1.7	1.1	7.9	13.6		635.0	720.7	0.36	5.0	0.80	1.0	1.00	1.08	1.10	1.00	0.47	1.30		0.04	0.07	0.0000			0.00	0.08
2.00	1.75	115.0	4.7	50.0	0.0	5	0.0	0.1	0.10	0.10	1.7	1.1	7.9	13.6		632.3	714.5	0.50	5.0	0.80	1.0	1.00	1.08	1.10	1.00	0.47	1.30		0.06	0.10	0.0000			0.00	0.08
2.50	2.25	115.0	4.7	50.0	0.0	5	0.0	0.1	0.13	0.13	1.7	1.1	7.9	13.6		629.7	708.6	0.65	5.0	0.80	1.0	0.99	1.08	1.10	1.00	0.47	1.30		0.07	0.13	0.0000			0.00	0.08
3.00	2.75	115.0	4.7	50.0	0.0	5	0.0	0.1	0.16	0.16	1.7	1.1	7.9	13.6		627.2	703.0	0.79	5.0	0.80	1.0	0.99	1.08	1.10	1.00	0.47	1.30		0.09	0.16	0.0000			0.00	0.08
3.50	3.25	115.0	4.7	50.0	0.0	5	0.0	0.1	0.19	0.19	1.7	1.1	7.9	13.6		624.8	697.8	0.93	5.0	0.80	1.0	0.99	1.08	1.10	1.00	0.47	1.30		0.10	0.19	0.0000			0.00	0.08
4.00	3.75	115.0	4.7	50.0	0.0	5	0.0	0.2	0.22	0.22	1.7	1.1	7.9	13.6		622.6	692.7	1.08	5.0	0.80	1.0	0.99	1.08	1.10	1.00	0.47	1.30		0.12	0.22	0.0000			0.00	0.08
4.50	4.25	115.0	4.7	50.0	0.0	5	0.0	0.2	0.24	0.24	1.7	1.1	7.9	13.6		620.4	688.0	1.22	5.0	0.80	1.0	0.99	1.08	1.10	1.00	0.46	1.30		0.14	0.24	0.0000			0.00	0.08
5.00	4.75	115.0	4.7	62.0	0.0	8	29.6	0.0	0.27	0.27	1.7	1.1	7.9	13.5	51.0	618.4	683.4	1.29	4.7		1.1	0.99	1.08	1.10	1.00	0.46	0.14		0.15	0.29	0.0386	0.076	0.0822	0.00	0.08
5.50	5.25	115.0	4.7	62.0	0.0	8	29.6	0.0	0.30	0.30	1.7	1.1	7.9	13.5	51.0	616.4	679.0	1.36	4.5		1.1	0.98	1.08	1.10	1.00	0.46	0.14		0.17	0.31	0.0395	0.097	0.1070	0.01	0.07
6.00	5.75	115.0	4.7	62.0	0.0	8	29.6	0.0	0.33	0.33	1.7	1.1	7.9	13.5	51.0	614.5	674.9	1.42	4.3		1.0	0.98	1.08	1.10	1.00	0.46	0.14		0.18	0.34	0.0404	0.122	0.1379	0.01	0.06
6.50	6.25	115.0	4.7	62.0	0.0	8	29.6	0.0	0.36	0.36	1.7	1.1	7.9	13.5	51.0	612.7	670.9	1.48	4.1		1.0	0.98	1.08	1.10	1.00	0.46	0.14		0.20	0.36	0.0453	0.152	0.1760	0.01	0.05
6.75	6.63	115.0	4.7	62.0	0.0	8	29.6	0.0	0.38	0.38	1.7	1.1	7.9	13.5	51.0	618.2	683.0	1.53	4.0		1.0	0.98	1.08	1.10	1.00	0.46	0.14		0.21	0.38	0.0493	0.163	0.1913	0.01	0.04
7.25	7.00	120.0	11.3	48.0	0.0	11	33.9	0.0	0.40	0.40	1.6	1.2	17.6	23.2	66.8	681.2	865.3	1.76	4.4		1.0	0.98	1.19	1.10	1.00	0.42	0.25		0.22	0.40	0.0590	0.079	0.0555	0.00	0.04
7.75	7.50	120.0	11.5	48.0	0.0	11	33.8	0.0	0.43	0.43	1.5	1.2	17.3	23.0	66.4	690.8	889.8	1.84	4.2		1.0	0.98	1.18	1.10	1.00	0.42	0.25		0.24	0.43	0.0650	0.084	0.0593	0.00	0.04
8.25	8.00	120.0	11.6	48.0	0.0	11	33.7	0.0	0.46	0.46	1.5	1.2	17.1	22.7	66.1	699.7	912.9	1.91	4.1		1.0	0.97	1.18	1.10	1.00	0.42	0.24		0.25	0.46	0.0710	0.088	0.0633	0.00	0.03
8.75	8.50	120.0	11.8	48.0	0.0	11	33.6	0.0	0.49	0.49	1.4	1.2	16.8	22.4	65.7	708.0	934.8	1.99	4.0		1.0	0.97	1.18	1.10	1.00	0.42	0.24		0.27	0.48	0.0770	0.093	0.0674	0.00	0.03
9.25	9.00	120.0	11.9	48.0	0.0	11	33.5	0.0	0.52	0.52	1.4	1.2	16.6	22.2	65.3	715.8	955.6	2.06	3.9		1.0	0.97	1.17	1.09	1.00	0.42	0.24		0.28	0.51	0.0830	0.097	0.0716	0.00	0.03
9.75	9.50	120.0	12.0	48.0	0.0	11	33.4	0.0	0.55	0.55	1.4	1.2	16.3	21.9	65.0	723.2	975.3	2.13	3.8		0.9	0.97	1.17	1.08	1.00	0.43	0.23		0.30	0.53	0.0890	0.102	0.0760	0.00	0.02
10.25	10.00	120.0	12.1	48.0	0.0	11	33.3	0.0	0.58	0.58	1.3	1.2	16.1	21.7	64.6	730.2	994.2	2.19	3.8		0.9	0.96	1.17	1.08	1.00	0.43	0.23		0.31	0.56	0.0950	0.106	0.0805	0.00	0.02
10.75	10.50	120.0	12.2	48.0	0.0	11	33.3	0.0	0.61	0.61	1.3	1.2	15.9	21.5	64.3	736.8	1,012.3	2.26	3.7		0.9	0.96	1.16	1.07	1.00	0.43	0.23		0.33	0.58	0.1010	0.111	0.0851	0.01	0.01
11.25	11.00	120.0	12.3	48.0	0.0	11	33.2	0.0	0.64	0.64	1.3	1.2	15.7	21.3	64.0	743.0	1,029.5	2.32	3.6		0.9	0.96	1.16	1.06	1.00	0.44	0.22		0.35	0.61	0.1070	0.116	0.0898	0.01	0.01
11.75	11.50	120.0	12.4	48.0	0.0	11	33.1	0.0	0.67	0.67	1.2	1.2	15.5	21.1	63.6	749.0	1,046.1	2.39	3.5		0.9	0.96	1.16	1.06	1.00	0.44	0.22		0.36	0.63	0.1129	0.120	0.0947	0.01	0.00
12.25	12.00	120.0	36.1	12.0	0.0	12	40.5	0.1	0.70	0.70	1.1	1.3	40.7	42.7	90.6	839.2	1,313.5	2.71	3.9		0.8	0.96	1.35	1.10	1.00	0.36	1.30		0.38	0.63	0.0563	0.070	0.0000	0.00	0.00
12.75	12.50	120.0	36.3	12.0	0.0	12	40.5	0.1	0.73	0.73	1.1	1.3	40.5	42.6	90.5	844.7	1,330.6	2.78	3.8		0.8	0.95	1.35	1.10	1.00	0.36	1.30		0.39	0.65	0.0595	0.073	0.0000	0.00	0.00
13.25	13.00	120.0	36.6	12.0	0.0	12	40.5	0.1	0.76	0.76	1.1	1.3	40.4	42.4	90.3	849.9	1,347.1	2.84	3.7		0.8	0.95	1.35	1.10	1.00	0.36	1.30		0.41	0.67	0.0627	0.075	0.0000	0.00	0.00
13.75	13.50	120.0	36.9	12.0	0.0	12	40.5	0.1	0.79	0.79	1.1	1.3	40.2	42.3	90.2	854.9	1,362.9	2.90	3.7		0.8	0.95	1.35	1.09	1.00	0.36	1.30		0.42	0.70	0.0660	0.078	0.0000	0.00	0.00
14.25	14.00	120.0	37.1	12.0	0.0	12	40.5	0.1	0.82	0.82	1.1	1.3	40.0	42.1	90.0	859.6	1,378.0	2.96	3.6		0.8	0.95	1.35	1.08	1.00	0.36	1.30		0.44	0.72	0.0692	0.081	0.0000	0.00	0.00
14.75	14.50	120.0	37.4	12.0	0.0	12	40.4	0.1	0.85	0.85	1.1	1.3	39.9	41.9	89.8	864.2	1,392.9	3.02	3.5		0.8	0.94	1.35	1.06	1.00	0.37	1.30		0.45	0.74	0.0727	0.084	0.0000	0.00	0.00
15.00	14.88	120.0	37.5	12.0	0.0	12	40.4	0.1	0.88	0.88	1.1	1.3	39.7	41.8	89.7	867.6	1,403.8	3.07	3.5		0.8	0.94	1.35	1.06	1.00	0.37	1.30		0.46	0.75	0.0754	0.086	0.0000	0.00	0.00
15.50	15.25	120.0	37.7	12.0	0.0	12	40.4	0.1	0.90	0.89	1.1	1.3	39.7	41.8	89.6	869.9	1,411.3	3.10	3.5		0.8	0.94	1.35	1.05	1.00	0.37	1.30	2.00	0.47	0.77		0.000	0.0000	0.00	0.00
16.00	15.75	110.0	29.7	65.0	0.0	7	38.3	0.1	0.93	0.90	1.1	1.3	31.3	36.9	84.3	916.7	1,436.4	3.14	3.5		0.8	0.94	1.35	1.04	1.00	0.38	1.30	2.00	0.49	0.80		0.000	0.0000	0.00	0.00
16.50	16.25	110.0	29.8	65.0	0.0	7	38.3	0.1	0.95	0.92	1.1	1.3	31.4	37.0	84.3	918.9	1,443.3	3.17	3.5		0.8	0.94	1.35	1.03	1.00	0.39	1.30	2.00	0.50	0.81		0.000	0.0000	0.00	0.00
17.00	16.75	110.0	30.0	65.0	0.0	7	38.3	0.1	0.98	0.93	1.0	1.3	31.4	37.0	84.3	921.0	1,450.1	3.19	3.4		0.8	0.93	1.35	1.03	1.00	0.40	1.30	2.00	0.51	0.82		0.000	0.0000	0.00	0.00
17.50	17.25	110.0	30.1	65.0	0.0	7	38.3	0.1	1.01	0.94	1.0	1.3	31.4	37.0	84.3	923.1	1,456.8	3.22	3.4		0.8	0.93	1.35	1.03	1.00	0.40	1.30	2.00	0.53	0.82		0.000	0.0000	0.00	0.00
18.00	17.75	110.0	30.2	65.0	0.0	7	38.3	0.1	1.04	0.95	1.0	1.3	31.4	37.0	84.3	925.2	1,463.3	3.24	3.4		0.8	0.93	1.35	1.02	1.00	0.41	1.30	2.00	0.54	0.83		0.000	0.0000	0.00	0.00
18.50	18.25	110.0	30.4	65.0	0.0	7	38.3	0.1	1.06	0.96	1.0	1.3	31.4	37.0	84.3	927.2	1,469.7	3.26	3.4		0.8	0.92	1.35	1.02	1.00	0.41	1.30	2.00	0.55	0.84		0.000	0.0000	0.00	0.00
19.00	18.75	110.0	30.5	65.0	0.0	7	38.3	0.1	1.09	0.97	1.0	1.3	31.4	37.0	84.3	929.2	1,476.0	3.29	3.4		0.8	0.92	1.35	1.02	1.00	0.42	1.30	2.00	0.56	0.85		0.000	0.0000	0.00	0.00
19.50	19.25	110.0	30.6	65.0	0.0	7	38.3	0.1	1.12	0.99	1.0	1.3	31.4	36.9	84.3	931.1	1,482.1	3.31	3.4		0.8	0.92	1.35	1.02	1.00	0.42	1.30	2.00	0.58	0.86		0.000	0.0000	0.00	0.00
20.00	19.75	110.0	30.7	65.0	0.0	7	38.3	0.1	1.15	1.00	1.0	1.3	31.3	36.9	84.3	933.0	1,488.1	3.34	3.3		0.8	0.92	1.35	1.01	1.00	0.43	1.30	2.00	0.59	0.87		0.000	0.0000	0.00	0.00
20.50	20.25	110.0	30.8	65.0	0.0	7	38.2	0.1	1.17	1.01	1.0	1.3	31.3	36.9	84.2	934.9	1,494.1	3.36	3.3		0.8	0.91	1.35	1.01	1.00	0.44	1.30	2.00	0.60	0.88		0.000	0.0000	0.00	0.00
21.00	20.75	110.0	30.9	65.0	0.0	7	38.2	0.1	1.20	1.02	1.0	1.3	31.3	36.9	84.2	936.7	1,499.9	3.38	3.3		0.8	0.91	1.35	1.01	1.00	0.44	1.30	2.00	0.61	0.89		0.000	0.0000	0.00	0.00
21.50	21.25	110.0	31.0	65.0	0.0	7	38.2	0.1	1.23	1.03	1.0	1.3	31.3	36.8	84.2	938.5	1,505.6	3.40	3.3		0.8	0.91	1.35	1.01	1.00	0.44	1.30	2.00	0.63	0.89		0.000	0.0000	0.00	0.00
22.00	21.75	110.0	31.1	65.0	0.0	7	38.2	0.1	1.26	1.05	1.0	1.3	31.2	36.8	84.1	940.2	1,511.2	3.43	3.3		0.8	0.91	1.35	1.00	1.00	0.45	1.30	2.00	0.64	0.90		0.000	0.0000	0.00	0.00
22.50	22.25	110.0	31.2	65.0	0.0	7	38.2	0.1	1.28	1.06	1.0	1.3	31.2	36.8	84.1	941.9	1,516.7	3.45	3.3		0.8	0.90	1.35	1.00	1.00	0.45	1.30	2.00	0.65	0.91		0.000	0.0000	0.00	0.00
23.00	22.75	110.0	31.3	65.0	0.0	7	38.2	0.1	1.31	1.07	1.0	1.3	31.1	36.7	84.1	943.6	1,522.1	3.47	3.2		0.8	0.90	1.35	1.00	1.00	0.46	1.30	2.00	0.66	0.92		0.000	0.0000	0.00	0.00
23.50	23.25	130.0	40.1	50.0	0.0	5	0.0	0.8	1.34	1.08	1.0	1.3	39.8	45.4		937.1	1,774.2	3.76	3.5	0.69	1.0	0.90	1.35	0.99	1.00	0.46	1.30		0.67	1.08				0.00	0.00
24.00	23.75	130.0	40.2	50.0	0.0	5	0.0	0.8	1.37	1.10	1.0	1.3	39.7	45.3		939.8	1,784.2	3.79	3.4	0.69	1.0	0.89	1.35	0.99	1.00	0.47	1.30		0.69	1.10				0.00	0.00
24.50	24.25	130.0	40.3	50.0	0.0	5	0.0	0.8	1.41	1.12	1.0	1.3	39.6	45.2		942.4	1,794.1	3.82	3.4	0.68	1.0	0.89	1.35	0.98	1.00	0.47	1.30		0.70	1.12				0.00	0.00
25.00	24.75	130.0	40.3	50.0	0.0	5	0.0	0.8	1.44	1.14	1.0	1.3	39.5	45.1		944.9	1,803.8	3.86	3.4	0.67	1.0	0.89	1.35	0.98	1.00	0.48	1.30		0.72	1.14				0.00	0.00
25.50	25.25	130.0	40.4	50.0	0.0	5	0.0	0.8	1.47	1.15	1.0	1.3	39.4	45.0		947.4	1,813.4	3.89	3.4	0.67	1.0	0.89	1.35	0.97	1.00	0.48	1.30		0.73	1.15				0.00	0.00
26.00	25.75	130.0	40.5	50.0	0.0	5	0.0	0.8	1.50	1.17	1.0	1.3	39.3	44.9		949.9	1,822.8	3.93	3.4	0.66	1.0	0.88	1.35	0.97	1.00	0.49	1.30		0.74	1.17				0.00	0.00
26.50	26.25	130.0	40.6	50.0	0.0	5	0.0	0.8	1.54	1.19	1.0	1.3	39.2	44.8		952.3	1,832.1	3.96	3.3	0.66	1.0	0.88	1.35	0.97	1.00	0.49	1.30		0.76	1.19				0.00	0.00
27.00	26.75	130.0	40.7	50.0	0.0	5	0.0	0.8	1.57	1.20	1.0	1.3	39.1	44.7		954.7	1,841.2	3.99	3.3	0.65	1.0	0.88	1.35	0.96	1.00	0.49	1.30		0.77	1.20				0.00	0.00
27.50	27.25	130.0	40.8	50.0	0.0	5	0.0	0.8	1.60	1.22	1.0	1.3	39.0	44.6		957.0	1,850.2	4.03	3.3	0.65	1.0	0.87	1.35	0.96	1.00	0.50	1.30		0.78	1.22				0.00	0.00
28.00	27.75	130.0	40.8	50.0	0.0	5	0.0	0.8	1.63	1.24	1.0	1.3	38.9	44.5		959.3	1,859.1	4.06	3.3	0.64	1.0	0.87	1.35	0.95	1.00	0.50	1.30		0.80	1.24				0.00	0.00
28.50	28.25	130.0	40.9	50.0	0.0	5	0.0	0.8	1.67	1.25	0.9	1.3	38.8	44.4		961.5	1,867.8	4.09	3.3	0.64	1.0	0.87	1.35	0.95	1.00	0.50	1.30		0.81	1.25				0.00	0.00
29.00	28.75	130.0	41.0	50.0	0.0	5	0.0	0.8	1.70	1.27	0.9	1.3	38.7	44.3		963.8	1,876.5	4.12	3.2	0.63	1.0	0.87	1.35	0.95	1.00	0.51	1.30		0.82	1.27				0.00	0.00
29.50	29.25	130.0	41.0	50.0	0.0	5	0.0	0.8	1.73	1.29	0.9	1.3	38.6	44.2		965.9	1,885.0	4.15	3.2	0.63	1.0	0.86	1.35	0.94	1.00	0.51	1.30		0.84	1.29				0.00	0.00
30.00	29.75	115.0	51.8	65.0	0.0	7	40.5	0.1	1.76	1.30	0.9	1.3	49.0	54.6	100.0	1,016.7	1,847.2	4.13	3.2		0.7	0.86	1.35	0.94	1.00	0.51	1.30	2.00	0.85	1.08		0.000	0.0000	0.00	0.00
30.50	30.25	115.0	51.9	65.0	0.0	7	40.5	0.1	1.79	1.32	0.9	1.3	49.0	54.6	100.0	1,018.0	1,851.9	4.16	3.2		0.7	0.86	1.35	0.93	1.00	0.52	1.30	2.00	0.86	1.09		0.000	0.0000	0.00	0.00
31.00	30.75	115.0	51.9	65.0	0.0	7	40.5	0.1	1.82	1.33	0.9	1.3	48.9	54.5	100.0	1,019.2	1,856.6	4.18	3.1		0.7	0.85	1.35	0.93	1.00	0.52	1.30	2.00	0.87	1.10		0.000	0.0000	0.00	0.00
31.50	31.25	115.0	52.0	65.0	0.0	7	40.5	0.1	1.85	1.34	0.9	1.3	48.9	54.4	100.0	1,020.5	1,861.2	4.20	3.1		0.7	0.85	1.35	0.93	1.00	0.52	1.30	2.00	0.88	1.11		0.000	0.0000	0.00	0.00
32.00	31.75	115.0	52.1	65.0	0.0	7	40.5	0.1	1.88	1.35	0.9	1.3	48.8	54.4	100.0	1,021.8	1,865.8	4.22	3.1		0.7	0.85	1.35	0.93	1.00	0.53	1.30	2.00	0.89	1.11		0.000	0.0000	0.00	0.00
32.50	32.25	115.0	52.1	65.0	0.0	7	40.5	0.1	1.91	1.37	0.9	1.3	48.7	54.3	100.0	1,023.0	1,870.2	4.25	3.1		0.7	0.85	1.35	0.92	1.00	0.53	1.30	2.00	0.90	1.12		0.000	0.0000	0.00	0.00
33.00	32.75	115.0	52.2	65.0	0.0	7	40.5	0.1	1.94	1.38	0.9	1.3	48.6	54.2	100.0	1,024.2	1,874.6	4.27	3.1		0.7	0.84	1.35	0.92	1.00	0.53	1.30	2.00	0.91	1.13		0.000	0.0000	0.00	0.00
33.50	33.25	115.0	52.3	65.0	0.0	7	40.5	0.1	1.96	1.39	0.9	1.3	48.6	54.1	100.0	1,025.4	1,879.0	4.29	3.1		0.7	0.84	1.35	0.92	1.00	0.53	1.30	2.00	0.92	1.14		0.000	0.0000	0.00	0.00
34.00	33.75	115.0	52.3	65.0	0.0	7	40.5	0.1	1.99	1.41	0.9	1.3	48.5	54.1	100.0	1,026.5	1,883.3	4.31	3.1		0.7	0.84	1.35	0.91	1.00	0.54	1.30	2.00	0.93	1.15		0.000	0.0000	0.00	0.00

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Z_b (ft)	Z_m (ft)	γ (pcf)	N_{60}	FC(%)	CC(%)	USCS	φ (°)	C' (tsf)	σ_{v0} (tsf)	σ_{v0}' (tsf)	C_N	C_s	$(N_1)_{60}$	$(N_1)_{60cs}$	D_R (%)	V_s (ft/s)	G_0 (tsf)	σ_p' (tsf)	OCR_{G0}	S_u/σ_{v0}'	K_0	r_d	MSF	K_σ	K_α	$CSR_{7.5}$	$CRR_{7.5}$	FS	τ_{av} (tsf)	p (tsf)	G/G_0	γ_{max} (%)	ε_v (%)	ΔS_i	ΣS_i (in)
34.50	34.25	110.0	81.2	12.0	0.0	12	40.5	0.1	2.02	1.42	0.9	1.3	75.2	77.3	100.0	1,093.3	2,043.3	4.50	3.2		0.7	0.83	1.35	0.91	1.00	0.54	1.30	2.00	0.94	1.18		0.000	0.0000	0.00	0.00
35.00	34.75	110.0	81.3	12.0	0.0	12	40.5	0.1	2.05	1.43	0.9	1.3	75.1	77.2	100.0	1,094.3	2,047.2	4.52	3.2		0.7	0.83	1.35	0.91	1.00	0.54	1.30	2.00	0.95	1.18		0.000	0.0000	0.00	0.00
35.50	35.25	110.0	81.4	12.0	0.0	12	40.5	0.1	2.08	1.44	0.9	1.3	75.0	77.1	100.0	1,095.4	2,051.1	4.54	3.1		0.7	0.83	1.35	0.91	1.00	0.54	1.30	2.00	0.96	1.19		0.000	0.0000	0.00	0.00
36.00	35.75	110.0	38.0	65.0	0.0	7	39.0	0.1	2.10	1.46	0.9	1.3	34.2	39.7	87.4	1,005.0	1,726.7	4.19	2.9		0.7	0.82	1.35	0.92	1.00	0.54	1.30	2.00	0.97	1.19		0.000	0.0000	0.00	0.00
36.50	36.25	110.0	38.1	65.0	0.0	7	39.0	0.1	2.13	1.47	0.9	1.3	34.1	39.7	87.3	1,006.1	1,730.4	4.21	2.9		0.7	0.82	1.35	0.91	1.00	0.54	1.30	2.00	0.98	1.19		0.000	0.0000	0.00	0.00
36.75	36.63	110.0	38.1	65.0	0.0	7	39.0	0.1	2.15	1.48	0.9	1.3	34.0	39.6	87.3	1,006.9	1,733.1	4.23	2.9		0.7	0.82	1.35	0.91	1.00	0.54	1.30	2.00	0.99	1.20		0.000	0.0000	0.00	0.00
37.25	37.00	110.0	100.0	12.0	0.0	12	40.5	0.1	2.17	1.49	0.9	1.3	100.0	102.1	100.0	1,139.7	2,220.3	4.77	3.2		0.7	0.82	1.35	0.90	1.00	0.55	1.30	2.00	0.99	1.24		0.000	0.0000	0.00	0.00
37.75	37.50	110.0	100.0	12.0	0.0	12	40.5	0.1	2.20	1.50	0.9	1.3	100.0	102.1	100.0	1,140.5	2,223.5	4.79	3.2		0.7	0.81	1.35	0.90	1.00	0.55	1.30	2.00	1.00	1.24		0.000	0.0000	0.00	0.00
38.25	38.00	110.0	100.0	12.0	0.0	12	40.5	0.1	2.23	1.51	0.9	1.3	100.0	102.1	100.0	1,141.3	2,226.7	4.81	3.2		0.7	0.81	1.35	0.89	1.00	0.55	1.30	2.00	1.01	1.25		0.000	0.0000	0.00	0.00
38.75	38.50	110.0	100.0	12.0	0.0	12	40.5	0.1	2.25	1.52	0.9	1.3	100.0	102.1	100.0	1,142.1	2,229.8	4.83	3.2		0.7	0.81	1.35	0.89	1.00	0.56	1.30	2.00	1.02	1.26		0.000	0.0000	0.00	0.00
39.25	39.00	110.0	100.0	12.0	0.0	12	40.5	0.1	2.28	1.53	0.9	1.3	100.0	102.1	100.0	1,142.9	2,233.0	4.85	3.2		0.7	0.80	1.35	0.89	1.00	0.56	1.30	2.00	1.03	1.27		0.000	0.0000	0.00	0.00
39.75	39.50	110.0	100.0	12.0	0.0	12	40.5	0.1	2.31	1.54	0.9	1.3	100.0	102.1	100.0	1,143.7	2,236.1	4.87	3.1		0.7	0.80	1.35	0.89	1.00	0.56	1.30	2.00	1.04	1.28		0.000	0.0000	0.00	0.00
40.25	40.00	110.0	100.0	12.0	0.0	12	40.5	0.1	2.34	1.56	0.9	1.3	100.0	102.1	100.0	1,144.5	2,239.1	4.89	3.1		0.7	0.80	1.35	0.88	1.00	0.56	1.30	2.00	1.04	1.28		0.000	0.0000	0.00	0.00
40.50	40.38	110.0	100.0	12.0	0.0	12	40.5	0.1	2.36	1.57	0.9	1.3	100.0	102.1	100.0	1,145.1	2,241.4	4.90	3.1		0.7	0.80	1.35	0.88	1.00	0.56	1.30	2.00	1.05	1.29		0.000	0.0000	0.00	0.00
41.00	40.75	130.0	41.9	50.0	0.0	5	0.0	0.9	2.38	1.58	0.9	1.3	36.9	42.5		999.2	2,017.0	4.67	3.0	0.55	1.0	0.79	1.35	0.88	1.00	0.56	1.30		1.06	1.58				0.00	0.00
41.50	41.25	130.0	42.0	50.0	0.0	5	0.0	0.9	2.41	1.59	0.9	1.3	36.8	42.4		1,000.9	2,023.7	4.70	2.9	0.55	1.0	0.79	1.35	0.88	1.00	0.57	1.30		1.07	1.59				0.00	0.00
42.00	41.75	130.0	42.0	50.0	0.0	5	0.0	0.9	2.45	1.61	0.9	1.3	36.7	42.3		1,002.5	2,030.3	4.73	2.9	0.55	1.0	0.79	1.35	0.87	1.00	0.57	1.30		1.08	1.61				0.00	0.00
42.50	42.25	130.0	42.0	50.0	0.0	5	0.0	0.9	2.48	1.63	0.9	1.3	36.6	42.2		1,004.1	2,036.9	4.76	2.9	0.54	1.0	0.78	1.35	0.87	1.00	0.57	1.30		1.09	1.63				0.00	0.00
43.00	42.75	130.0	42.0	50.0	0.0	5	0.0	0.9	2.51	1.64	0.9	1.3	36.4	42.1		1,005.7	2,043.4	4.79	2.9	0.54	1.0	0.78	1.35	0.87	1.00	0.57	1.30		1.10	1.64				0.00	0.00
43.50	43.25	130.0	42.0	50.0	0.0	5	0.0	0.9	2.54	1.66	0.9	1.3	36.3	41.9		1,007.3	2,049.8	4.81	2.9	0.54	1.0	0.78	1.35	0.87	1.00	0.57	1.30		1.11	1.66				0.00	0.00
44.00	43.75	130.0	42.0	50.0	0.0	5	0.0	0.9	2.58	1.68	0.9	1.3	36.2	41.8		1,008.8	2,056.1	4.84	2.9	0.53	1.0	0.78	1.35	0.86	1.00	0.57	1.30		1.12	1.68				0.00	0.00
44.50	44.25	130.0	42.1	50.0	0.0	5	0.0	0.9	2.61	1.70	0.9	1.3	36.1	41.7		1,010.4	2,062.4	4.87	2.9	0.53	1.0	0.77	1.35	0.86	1.00	0.57	1.30		1.13	1.70				0.00	0.00
45.00	44.75	130.0	42.1	50.0	0.0	5	0.0	0.9	2.64	1.71	0.9	1.3	36.0	41.6		1,011.9	2,068.6	4.90	2.9	0.53	1.0	0.77	1.35	0.86	1.00	0.57	1.30		1.14	1.71				0.00	0.00
45.50	45.25	130.0	65.9	50.0	0.0	5	0.0	1.0	2.67	1.73	0.9	1.3	57.9	63.5		1,083.7	2,372.5	5.25	3.0	0.57	1.0	0.77	1.35	0.85	1.00	0.58	1.30		1.15	1.73				0.00	0.00
46.00	45.75	130.0	65.9	50.0	0.0	5	0.0	1.0	2.71	1.75	0.9	1.3	57.8	63.4		1,085.2	2,379.2	5.28	3.0	0.56	1.0	0.76	1.35	0.85	1.00	0.58	1.30		1.16	1.75				0.00	0.00
46.50	46.25	130.0	65.9	50.0	0.0	5	0.0	1.0	2.74	1.76	0.9	1.3	57.6	63.2		1,086.7	2,385.9	5.31	3.0	0.56	1.0	0.76	1.35	0.85	1.00	0.58	1.30		1.17	1.76				0.00	0.00
47.00	46.75	130.0	65.9	50.0	0.0	5	0.0	1.0	2.77	1.78	0.9	1.3	57.5	63.1		1,088.2	2,392.5	5.33	3.0	0.56	1.0	0.76	1.35	0.84	1.00	0.58	1.30		1.18	1.78				0.00	0.00
47.50	47.25	130.0	66.0	50.0	0.0	5	0.0	1.0	2.80	1.80	0.9	1.3	57.4	63.0		1,089.7	2,399.0	5.36	3.0	0.55	1.0	0.76	1.35	0.84	1.00	0.58	1.30		1.18	1.80				0.00	0.00
48.00	47.75	130.0	66.0	50.0	0.0	5	0.0	1.0	2.84	1.81	0.9	1.3	57.3	62.9		1,091.2	2,405.5	5.39	3.0	0.55	1.0	0.75	1.35	0.84	1.00	0.58	1.30		1.19	1.81				0.00	0.00
48.50	48.25	130.0	66.0	50.0	0.0	5	0.0	1.0	2.87	1.83	0.9	1.3	57.1	62.7		1,092.6	2,411.9	5.42	3.0	0.55	1.0	0.75	1.35	0.84	1.00	0.58	1.30		1.20	1.83				0.00	0.00
49.00	48.75	130.0	66.0	50.0	0.0	5	0.0	1.0	2.90	1.85	0.9	1.3	57.0	62.6		1,094.1	2,418.3	5.45	2.9	0.54	1.0	0.75	1.35	0.83	1.00	0.58	1.30		1.21	1.85				0.00	0.00
49.50	49.25	130.0	66.0	50.0	0.0	5	0.0	1.0	2.93	1.86	0.9	1.3	56.9	62.5		1,095.5	2,424.6	5.47	2.9	0.54	1.0	0.74	1.35	0.83	1.00	0.58	1.30		1.22	1.86				0.00	0.00
50.00	49.75	130.0	66.0	50.0	0.0	5	0.0	1.0	2.97	1.88	0.9	1.3	56.7	62.4		1,096.9	2,430.8	5.50	2.9	0.54	1.0	0.74	1.35	0.83	1.00	0.58	1.30		1.23	1.88				0.00	0.00
50.50	50.25	130.0	66.0	50.0	0.0	5	0.0	1.0	3.00	1.90	0.9	1.3	56.6	62.2		1,098.3	2,437.0	5.53	2.9	0.53	1.0	0.74	1.35	0.82	1.00	0.58	1.30		1.24	1.90				0.00	0.00
51.00	50.75	130.0	66.0	50.0	0.0	5	0.0	1.0	3.03	1.92	0.9	1.3	56.5	62.1		1,099.7	2,443.1	5.56	2.9	0.53	1.0	0.73	1.35	0.82	1.00	0.59	1.30		1.25	1.92				0.00	0.00

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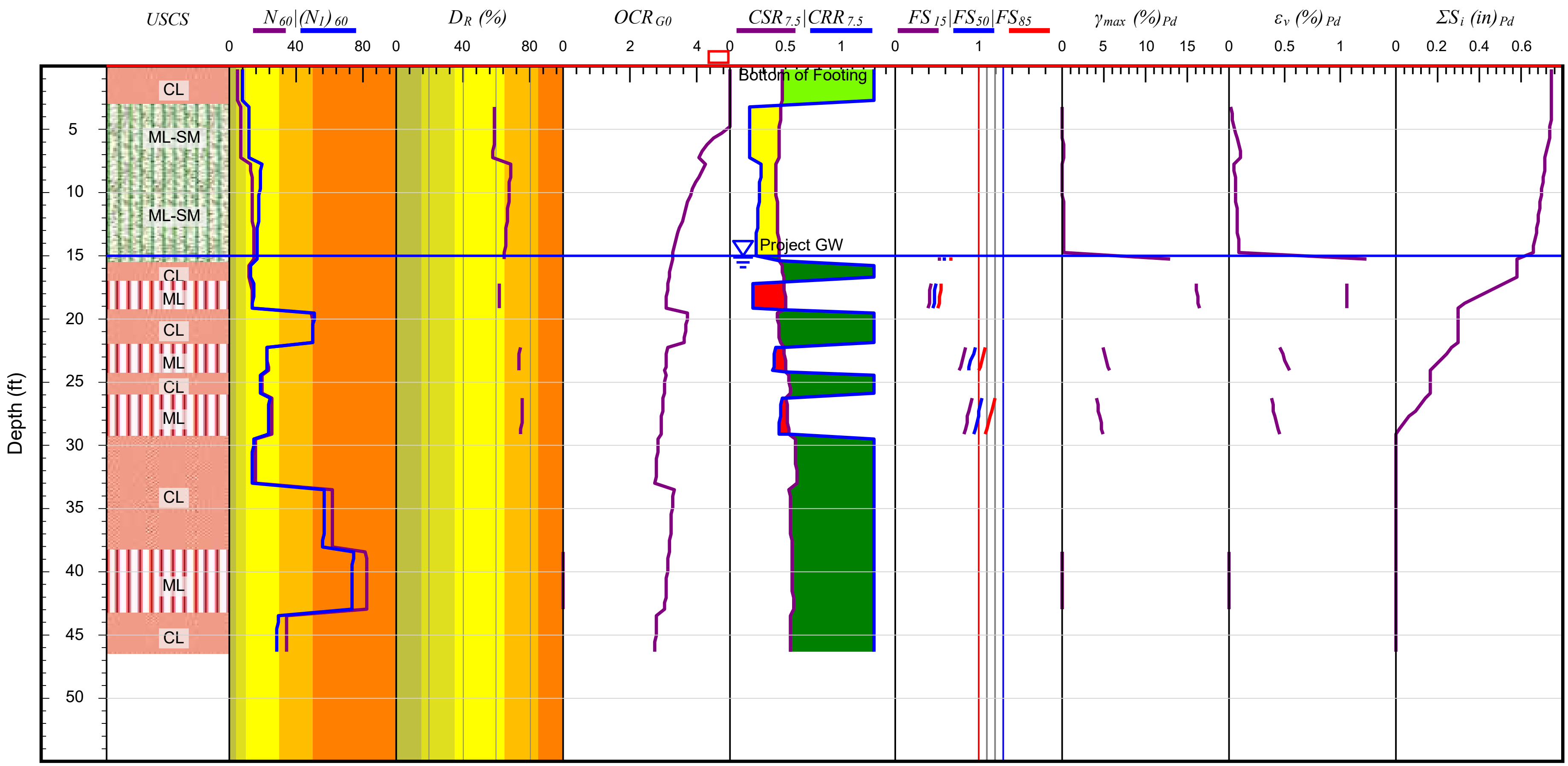

CL

ML

ML-SM

Silt Correction:
$K=(1-FC)^{0.75}$

Earthquake & Groundwater Information:
Magnitude = 6.7
Max. Acceleration = 0.8614 g
Project GW = 15 ft
Maximum Settlement = 0.75 in
Settl. at Bottom of Footing = 0.75 in

Liquefaction: Boulanger & Idriss (2010-16)
Settl.: [dry] Pradel (1998); [sat] Idriss & Boulanger (2008)
Lateral spreading: Idriss & Boulanger (2008)
M correction: [Sand; Clay] Boulanger & Idriss(2004)
σv correction: Idriss & Boulanger (2008)
Stress reduction: Idriss & Boulanger (2008)

GORIAN & ASSOCIATES, INC.

Seismic Settlement Potential - SPT Data			
Project:	Proposed Self=Storage		
Location:	18618 Oxnard St., Tarzana		
Project No.: 3191-0-0-100	Boring No.: B-5	Figure: 5	

X:\3191-0-0 Palatine Capital Partners Acquisitions, LLC - 18618 Oxnard St. Tarzana\Seismic Settlement\GeoSuite\GeoSuite_3191-0-0-100_B-5.csv

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Z_b (ft)	Z_m (ft)	γ (pcf)	N_{60}	FC(%)	CC(%)	USCS	φ (°)	C' (tsf)	σ_{v0} (tsf)	σ_{v0}' (tsf)	C_N	C_s	$(N_1)_{60}$	$(N_1)_{60cs}$	D_R (%)	V_s (ft/s)	G_0 (tsf)	σ_p' (tsf)	OCR_{G0}	S_u/σ_{v0}'	K_0	r_d	MSF	K_σ	K_α	$CSR_{7.5}$	$CRR_{7.5}$	FS	τ_{av} (tsf)	p (tsf)	G/G_0	γ_{max} (%)	ε_v (%)	ΔS_i	ΣS_i (in)
0.50	0.25	110.0	4.7	50.0	0.0	5	0.0	0.0	0.01	0.01	1.7	1.1	7.9	13.6		655.4	734.3	0.07	5.0	0.80	1.0	1.00	1.08	1.10	1.00	0.47	1.30		0.01	0.01	0.0000			0.00	0.75
1.00	0.75	110.0	4.7	50.0	0.0	5	0.0	0.0	0.04	0.04	1.7	1.1	7.9	13.6		652.4	727.7	0.21	5.0	0.80	1.0	1.00	1.08	1.10	1.00	0.47	1.30		0.02	0.04	0.0000			0.00	0.75
1.50	1.25	110.0	4.7	50.0	0.0	5	0.0	0.1	0.07	0.07	1.7	1.1	7.9	13.6		649.6	721.4	0.34	5.0	0.80	1.0	1.00	1.08	1.10	1.00	0.47	1.30		0.04	0.07	0.0000			0.00	0.75
2.00	1.75	110.0	4.7	50.0	0.0	5	0.0	0.1	0.10	0.10	1.7	1.1	7.9	13.6		646.9	715.4	0.48	5.0	0.80	1.0	1.00	1.08	1.10	1.00	0.47	1.30		0.05	0.10	0.0000			0.00	0.75
2.50	2.25	110.0	4.7	50.0	0.0	5	0.0	0.1	0.12	0.12	1.7	1.1	7.9	13.6		644.3	709.7	0.62	5.0	0.80	1.0	0.99	1.08	1.10	1.00	0.47	1.30		0.07	0.12	0.0000			0.00	0.75
3.00	2.75	110.0	4.7	50.0	0.0	5	0.0	0.1	0.15	0.15	1.7	1.1	7.9	13.6		641.9	704.3	0.76	5.0	0.80	1.0	0.99	1.08	1.10	1.00	0.47	1.30		0.08	0.15	0.0000			0.00	0.75
3.50	3.25	120.0	7.1	62.0	0.0	8	31.7	0.0	0.18	0.18	1.7	1.1	12.2	17.7	58.4	644.6	774.8	0.90	5.0		1.1	0.99	1.12	1.10	1.00	0.45	0.18		0.10	0.19	0.0729	0.026	0.0181	0.00	0.75
4.00	3.75	120.0	7.1	62.0	0.0	8	31.7	0.0	0.21	0.21	1.7	1.1	12.2	17.8	58.4	641.9	768.3	1.05	5.0		1.1	0.99	1.12	1.10	1.00	0.45	0.18		0.12	0.22	0.0512	0.034	0.0242	0.00	0.75
4.50	4.25	120.0	7.1	62.0	0.0	8	31.7	0.0	0.24	0.24	1.7	1.1	12.2	17.8	58.4	639.2	762.0	1.20	5.0		1.1	0.99	1.12	1.10	1.00	0.45	0.18		0.13	0.26	0.0367	0.043	0.0316	0.00	0.74
5.00	4.75	120.0	7.1	62.0	0.0	8	31.7	0.0	0.27	0.27	1.7	1.1	12.2	17.8	58.4	636.7	756.0	1.35	5.0		1.1	0.99	1.12	1.10	1.00	0.45	0.18		0.15	0.29	0.0366	0.054	0.0407	0.00	0.74
5.50	5.25	120.0	7.1	62.0	0.0	8	31.7	0.0	0.30	0.30	1.7	1.1	12.2	17.8	58.4	634.3	750.3	1.42	4.7		1.1	0.98	1.12	1.10	1.00	0.45	0.18		0.17	0.31	0.0434	0.068	0.0527	0.00	0.74
6.00	5.75	120.0	7.1	62.0	0.0	8	31.7	0.0	0.33	0.33	1.7	1.1	12.2	17.8	58.4	632.0	744.8	1.49	4.5		1.0	0.98	1.12	1.10	1.00	0.45	0.18		0.18	0.34	0.0503	0.085	0.0677	0.00	0.73
6.50	6.25	120.0	7.1	62.0	0.0	8	31.7	0.0	0.36	0.36	1.7	1.1	12.2	17.8	58.4	629.8	739.6	1.55	4.3		1.0	0.98	1.12	1.10	1.00	0.45	0.18		0.20	0.37	0.0574	0.106	0.0861	0.01	0.73
7.00	6.75	120.0	7.1	62.0	0.0	8	31.6	0.0	0.39	0.39	1.7	1.1	12.0	17.6	58.1	638.2	759.6	1.63	4.2		1.0	0.98	1.12	1.10	1.00	0.45	0.18		0.21	0.39	0.0638	0.115	0.0959	0.01	0.72
7.50	7.25	120.0	7.2	62.0	0.0	8	31.5	0.0	0.42	0.42	1.6	1.1	11.7	17.3	57.6	647.2	781.2	1.70	4.1		1.0	0.98	1.11	1.10	1.00	0.45	0.18		0.23	0.42	0.0704	0.122	0.1035	0.01	0.72
8.00	7.75	110.0	13.0	52.0	0.0	8	34.5	0.0	0.45	0.45	1.5	1.2	19.1	24.7	69.0	738.5	932.2	1.91	4.2		1.0	0.97	1.21	1.10	1.00	0.41	0.28		0.24	0.44	0.0461	0.078	0.0465	0.00	0.71
8.50	8.25	110.0	13.2	52.0	0.0	8	34.4	0.0	0.48	0.48	1.4	1.2	18.9	24.5	68.7	747.0	953.8	1.98	4.1		1.0	0.97	1.20	1.10	1.00	0.41	0.28		0.26	0.47	0.0468	0.081	0.0491	0.00	0.71
9.00	8.75	110.0	13.4	52.0	0.0	8	34.3	0.0	0.50	0.50	1.4	1.2	18.7	24.3	68.4	754.9	974.3	2.04	4.1		1.0	0.97	1.20	1.10	1.00	0.41	0.27		0.27	0.49	0.0481	0.085	0.0519	0.00	0.71
9.50	9.25	110.0	13.5	52.0	0.0	8	34.2	0.0	0.53	0.53	1.4	1.2	18.5	24.1	68.1	762.5	993.8	2.11	4.0		1.0	0.97	1.20	1.10	1.00	0.41	0.27		0.29	0.51	0.0520	0.089	0.0547	0.00	0.70
10.00	9.75	110.0	13.7	52.0	0.0	8	34.2	0.0	0.56	0.56	1.3	1.2	18.3	23.9	67.8	769.6	1,012.4	2.17	3.9		0.9	0.97	1.19	1.09	1.00	0.42	0.27		0.30	0.54	0.0560	0.092	0.0577	0.00	0.70
10.50	10.25	110.0	13.8	52.0	0.0	8	34.1	0.0	0.59	0.59	1.3	1.2	18.1	23.7	67.5	776.3	1,030.2	2.24	3.8		0.9	0.96	1.19	1.08	1.00	0.42	0.26		0.32	0.56	0.0601	0.096	0.0607	0.00	0.70
11.00	10.75	110.0	13.9	52.0	0.0	8	34.0	0.0	0.61	0.61	1.3	1.2	17.8	23.5	67.2	782.7	1,047.2	2.30	3.7		0.9	0.96	1.19	1.07	1.00	0.42	0.26		0.33	0.58	0.0642	0.100	0.0638	0.00	0.69
11.50	11.25	110.0	14.0	52.0	0.0	8	33.9	0.0	0.64	0.64	1.3	1.2	17.6	23.3	66.9	788.8	1,063.6	2.36	3.7		0.9	0.96	1.19	1.07	1.00	0.42	0.25		0.34	0.60	0.0683	0.103	0.0670	0.00	0.69
12.00	11.75	110.0	14.1	52.0	0.0	8	33.9	0.0	0.67	0.67	1.2	1.2	17.4	23.1	66.6	794.6	1,079.3	2.42	3.6		0.9	0.96	1.18	1.06	1.00	0.43	0.25		0.36	0.63	0.0725	0.107	0.0702	0.00	0.69
12.50	12.25	110.0	14.2	52.0	0.0	8	33.8	0.0	0.70	0.70	1.2	1.2	17.2	22.9	66.3	800.1	1,094.4	2.47	3.6		0.9	0.95	1.18	1.06	1.00	0.43	0.25		0.37	0.65	0.0767	0.111	0.0736	0.00	0.68
13.00	12.75	110.0	14.3	52.0	0.0	8	33.7	0.1	0.72	0.72	1.2	1.2	17.1	22.7	66.0	805.5	1,109.0	2.53	3.5		0.9	0.95	1.18	1.05	1.00	0.43	0.24		0.39	0.67	0.0809	0.114	0.0770	0.00	0.68
13.50	13.25	110.0	14.4	52.0	0.0	8	33.6	0.1	0.75	0.75	1.2	1.2	16.9	22.5	65.8	810.6	1,123.1	2.59	3.4		0.9	0.95	1.18	1.05	1.00	0.43	0.24		0.40	0.69	0.0852	0.118	0.0805	0.00	0.67
14.00	13.75	110.0	14.4	52.0	0.0	8	33.6	0.1	0.78	0.78	1.2	1.2	16.7	22.3	65.5	815.4	1,136.7	2.64	3.4		0.9	0.95	1.17	1.04	1.00	0.43	0.24		0.41	0.72	0.0895	0.122	0.0840	0.01	0.67
14.50	14.25	110.0	14.5	52.0	0.0	8	33.5	0.1	0.81	0.81	1.1	1.2	16.5	22.1	65.2	820.2	1,149.9	2.69	3.3		0.9	0.95	1.17	1.04	1.00	0.44	0.23		0.43	0.74	0.0938	0.125	0.0877	0.01	0.66
15.00	14.75	110.0	14.6	52.0	0.0	8	33.4	0.1	0.83	0.83	1.1	1.2	16.3	21.9	65.0	824.7	1,162.6	2.75	3.3		0.9	0.94	1.17	1.03	1.00	0.44	0.23		0.44	0.76	0.0981	0.129	0.0914	0.01	0.66
15.50	15.25	110.0	14.7	52.0	0.0	8	33.4	0.1	0.86	0.85	1.1	1.2	16.2	21.9	64.8	828.1	1,172.3	2.79	3.3		0.9	0.94	1.17	1.03	1.00	0.44	0.23	0.52	0.45	0.77		12.884	1.2331	0.07	0.58
16.00	15.75	115.0	11.4	50.0	0.0	5	0.0	0.6	0.89	0.87	1.1	1.1	12.7	18.3		805.6	1,159.8	2.79	3.2	0.69	1.0	0.94	1.13	1.02	1.00	0.47	1.30		0.47	0.87				0.00	0.58
16.50	16.25	115.0	11.5	50.0	0.0	5	0.0	0.6	0.92	0.88	1.1	1.1	12.6	18.2		808.2	1,167.4	2.81	3.2	0.69	1.0	0.94	1.12	1.02	1.00	0.48	1.30		0.48	0.88				0.00	0.58
17.00	16.75	115.0	11.5	50.0	0.0	5	0.0	0.6	0.95	0.89	1.1	1.1	12.6	18.2		810.8	1,175.0	2.84	3.2	0.68	1.0	0.93	1.12	1.02	1.00	0.48	1.30		0.49	0.89				0.00	0.58
17.50	17.25	115.0	13.2	65.0	0.0	7	32.6	0.1	0.98	0.91	1.1	1.1	14.3	19.9	61.8	806.4	1,162.0	2.84	3.1		0.9	0.93	1.14	1.02	1.00	0.48	0.20	0.42	0.51	0.82		16.124	1.0538	0.06	0.52
18.00	17.75	115.0	13.3	65.0	0.0	7	32.6	0.1	1.00	0.92	1.1	1.1	14.3	19.9	61.8	808.5	1,168.2	2.87	3.1		0.9	0.93	1.14	1.02	1.00	0.49	0.20	0.42	0.52	0.83		16.168	1.0549	0.06	0.46
18.50	18.25	115.0	13.3	65.0	0.0	7	32.6	0.1	1.03	0.93	1.1	1.1	14.2	19.8	61.7	810.6	1,174.3	2.89	3.1		0.8	0.92	1.14	1.02	1.00	0.49	0.20	0.41	0.54	0.84		16.250	1.0568	0.06	0.39
19.00	18.75	115.0	13.4	65.0	0.0	7	32.6	0.1	1.06	0.94	1.1	1.1	14.2	19.8	61.6	812.6	1,180.2	2.92	3.1		0.8	0.92	1.14	1.01	1.00	0.50	0.20	0.40	0.55	0.85		16.339	1.0590	0.06	0.33
19.25	19.13	115.0	13.4	65.0	0.0	7	32.6	0.1	1.08	0.95	1.1	1.1	14.1	19.7	61.6	814.1	1,184.5	2.93	3.1		0.8	0.92	1.14	1.01	1.00	0.51	0.20	0.40	0.56	0.86		16.410	1.0607	0.03	0.30
19.75	19.50	130.0	49.4	50.0	0.0	5	0.0	0.7	1.11	0.97	1.0	1.3	50.6	56.2		949.8	1,822.5	3.62	3.7	0.77	1.0	0.92	1.35	1.03	1.00	0.42	1.30		0.57	0.97				0.00	0.30
20.25	20.00	130.0	49.6	50.0	0.0	5	0.0	0.8	1.14	0.98	1.0	1.3	50.5	56.1		953.0	1,834.6	3.66	3.7	0.76	1.0	0.92	1.35	1.02	1.00	0.43	1.30		0.58	0.98				0.00	0.30
20.75	20.50	130.0	49.7	50.0	0.0	5	0.0	0.8	1.17	1.00	1.0	1.3	50.5	56.1		956.0	1,846.6	3.70	3.7	0.76	1.0	0.91	1.35	1.02	1.00	0.44	1.30		0.60	1.00				0.00	0.30
21.25	21.00	130.0	49.9	50.0	0.0	5	0.0	0.8	1.20	1.02	1.0	1.3	50.4	56.0		959.1	1,858.3	3.74	3.7	0.75	1.0	0.91	1.35	1.01	1.00	0.44	1.30		0.61	1.02				0.00	0.30
21.75	21.50	130.0	50.0	50.0	0.0	5	0.0	0.8	1.24	1.03	1.0	1.3	50.3	55.9		962.0	1,869.7	3.77	3.7	0.74	1.0	0.91	1.35	1.01	1.00	0.45	1.30		0.63	1.03				0.00	0.30
22.00	21.88	130.0	50.1	50.0	0.0	5	0.0	0.8	1.26	1.05	1.0	1.3	50.3	55.9		964.2	1,878.2	3.80	3.6	0.74	1.0	0.91	1.35	1.00	1.00	0.45	1.30		0.64	1.05				0.00	0.30
22.50	22.25	130.0	22.9	65.0	0.0	7	35.8	0.1	1.29	1.06	1.0	1.2	22.9	28.5	74.1	832.2	1,399.0	3.32	3.1		0.8	0.90	1.27	1.00	1.00	0.48	0.41	0.84	0.65	0.93		4.859	0.4622	0.03	0.27
23.00	22.75	130.0	23.0	65.0	0.0	7	35.7	0.1	1.32	1.08	1.0	1.2	22.8	28.4	73.9	834.1	1,405.4	3.35	3.1		0.8	0.90	1.26	1.00	1.00	0.49	0.40	0.82	0.66	0.94		5.069	0.4842	0.03	0.24
23.50	23.25	130.0	23.0	65.0	0.0	7	35.7	0.1	1.35	1.09	1.0	1.2	22.7	28.3	73.8	835.9	1,411.8	3.38	3.1		0.8	0.90	1.26	0.99	1.00	0.49	0.40	0.80	0.68	0.95		5.277	0.5061	0.03	0.21
24.00	23.75	130.0	23.0	65.0	0.0	7	35.6	0.1	1.38	1.11	1.0	1.2	22.6	28.2	73.6	837.8	1,418.0	3.41	3.1		0.8	0.89	1.26	0.99	1.00	0.50	0.39	0.78	0.69	0.96		5.489	0.5285	0.03	0.18
24.25	24.13	130.0	23.1	65.0	0.0	7	35.6	0.1	1.41	1.12	1.0	1.2	22.5	28.1	73.5	839.1	1,422.6	3.43	3.1		0.8	0.89	1.26	0.99	1.00	0.50	0.39	0.77	0.70	0.97		5.651	0.5458	0.02	0.16
24.75	24.50	130.0	19.2	50.0	0.0	5	0.0	0.7	1.43	1.14	1.0	1.2	18.6	24.2		849.6	1,458.4	3.49	3.1	0.60	1.0	0.89	1.20	0.99	1.00	0.53	1.30		0.71	1.14				0.00	0.16
25.25	25.00	130.0	19.2	50.0	0.0	5	0.0	0.7	1.46	1.15	1.0	1.2	18.5	24.1		851.7	1,465.6	3.52	3.1	0.59	1.0	0.89	1.20	0.99	1.00	0.53	1.30		0.73	1.15				0.00	0.16
25.75	25.50	130.0	19.2	50.0	0.0	5	0.0	0.7	1.50	1.17	1.0	1.2	18.4	24.0		853.9	1,473.1	3.55	3.0	0.59	1.0	0.89	1.20	0.99	1.00	0.54	1.30		0.74	1.17				0.00	0.16
26.00	25.88	130.0	19.2	50.0	0.0	5	0.0	0.7	1.52	1.18	1.0	1.2	18.3	23.9		855.5	1,478.7	3.57	3.0	0.58	1.0	0.88	1.20	0.98	1.00	0.54	1.30		0.75	1.18				0.00	0.16
26.50	26.25	115.0	25.3	65.0	0.0	7	36.1	0.1	1.54	1.19	1.0	1.2	24.1	29.6	75.5	910.0	1,479.8	3.58	3.0		0.8	0.88	1.29	0.98	1.00	0.51	0.46	0.92	0.76	1.02		4.127	0.3778	0.02	0.14
27.00	26.75	115.0	25.3	65.0	0.0	7	36.1	0.1	1.57	1.21	0.9	1.2	24.0	29.6	75.4	911.4	1,484.5	3.61	3.0		0.8	0.88	1.28	0.98	1.00	0.51	0.46	0.90	0.77	1.03		4.253	0.3904	0.02	0.12
27.50	27.25	115.0	25.3	65.0	0.0	7	36.1	0.1	1.60	1.22	0.9	1.2	23.9	29.5	75.3	912.8	1,489.1	3.63	3.0		0.8	0.87	1.28	0.98	1.00	0.51	0.45	0.88	0.78	1.04		4.382	0.4033	0.02	0.09
28.00	27.75	115.0	25.3	65.0	0.0	7	36.0	0.1	1.63	1.23	0.9	1.2	23.8	29.4	75.2	914.2	1,493.6	3.65	3.0		0.8	0.87	1.28	0.97	1.00	0.52	0.45	0.87	0.80	1.05		4.513	0.4165	0.02	0.07
28.50	28.25	115.0	25.4	65.0	0.0	7	36.0	0.1	1.66	1.25	0.9	1.2	23.7	29.3	75.1	915.6	1,498.1	3.67	2.9		0.8	0.87	1.28	0.97	1.00	0.52	0.45	0.86	0.81	1.06		4.645	0.4300	0.03	0.04
29.00	28.75	115.0	25.4	65.0	0.0	7	36.0	0.1	1.69	1.26	0.9	1.2	23.6	29.2	75.0	916.9	1,502.5	3.69	2.9		0.8	0.87	1.28	0.97	1.00	0.52	0.44	0.84	0.82	1.07		4.779	0.4436	0.03	0.01
29.25	29.13	115.0	25.4	65.0	0.0	7	36.0	0.1	1.71	1.27	0.9	1.2	23.6	29.2	74.9	917.9	1,505.7	3.71	2.9		0.8	0.86	1.28	0.97	1.00	0.53	0.44	0.83	0.83	1.08		4.880	0.4540	0.01	0.00
29.75	29.50	115.0	15.7	50.0	37.0	5	0.0	0.7	1.73	1.28	0.9	1.1	14.3	19.9		897.3	1,439.1	3.64	2.8	0.58	1.0	0.86	1.14	0.98	1.00	0.58	1.30		0.84	1.28				0.00	0.00
30.25	30.00	115.0	15.7	50.0	37.0	5	0.0	0.7	1.76	1.29	0.9	1.1	14.2	19.8		899.0	1,444.2	3.66	2.8	0.57	1.0	0.86	1.14	0.98	1.00	0.59	1.30		0.85	1.29				0.00	0.00
30.75	30.50	115.0	15.7	50.0	37.0	5	0.0	0.7	1.79	1.30	0.9	1.1	14.2	19.8		900.6	1,449.7	3.68	2.8	0.57	1.0	0.86	1.14	0.97	1.00	0.59	1.30		0.86	1.30				0.00	0.00
31.25	31.00	115.0	15.7	50.0	37.0	5	0.0	0.7	1.82	1.32	0.9	1.1	14.1	19.7		902.2	1,454.8	3.71	2.8	0.57	1.0	0.85	1.14	0.97	1.00	0.59	1.30		0.87	1.32				0.00	0.00
31.75	31.50	115.0	15.8	50.0	37.0	5	0.0	0.8	1.85	1.33	0.9	1.1	14.0	19.7		903.8	1,459.9	3.73	2.8	0.56	1.0	0.85	1.14	0.97	1.00	0.60	1.30		0.88	1.33				0.00	0.00
32.25	32.00	115.0	15.8	50.0	37.0	5	0.0	0.8	1.87	1.34	0.9	1.1	14.0	19.6		905.4	1,465.0	3.75	2.8	0.56	1.0	0.85	1.14	0.97	1.00	0.60	1.30		0.89	1.34				0.00	0.00
32.75	32.50	115.0	15.8	50.0	37.0	5	0.0	0.8	1.90	1.36	0.9	1.1	13.9	19.5		906.9	1,470.0	3.77	2.8	0.56	1.0	0.84	1.14	0.97	1.00	0.60	1.30		0.90	1.36				0.00	0.00
33.25	33.00	115.0	15.8	50.0	37.0	5	0.0	0.8	1.93	1.37	0.9	1.1	13.9	19.5		908.5	1,475.0	3.79	2.8	0.55	1.0	0.84	1.14	0.97	1.00	0.60	1.30		0.91	1.37				0.00	0.00

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Z_b (ft)	Z_m (ft)	γ (pcf)	N_{60}	FC(%)	CC(%)	USCS	φ (°)	C' (tsf)	σ_{v0} (tsf)	σ_{v0}' (tsf)	C_N	C_s	$(N_1)_{60}$	$(N_1)_{60cs}$	D_R (%)	V_s (ft/s)	G_0 (tsf)	σ_p' (tsf)	OCR_{G0}	S_u/σ_{v0}'	K_0	r_d	MSF	K_σ	K_α	$CSR_{7.5}$	$CRR_{7.5}$	FS	τ_{av} (tsf)	p (tsf)	G/G_0	γ_{max} (%)	ε_v (%)	ΔS_i	ΣS_i (in)
33.75	33.50	120.0	61.3	50.0	0.0	5	0.0	0.9	1.96	1.38	0.9	1.3	57.1	62.7		1,080.2	2,175.9	4.59	3.3	0.67	1.0	0.84	1.35	0.92	1.00	0.53	1.30		0.92	1.38				0.00	0.00
34.25	34.00	120.0	61.4	50.0	0.0	5	0.0	0.9	1.99	1.40	0.9	1.3	57.0	62.6		1,082.0	2,183.3	4.61	3.3	0.67	1.0	0.83	1.35	0.92	1.00	0.54	1.30		0.93	1.40				0.00	0.00
34.75	34.50	120.0	61.4	50.0	0.0	5	0.0	0.9	2.02	1.41	0.9	1.3	56.9	62.5		1,083.8	2,190.5	4.64	3.3	0.67	1.0	0.83	1.35	0.91	1.00	0.54	1.30		0.94	1.41				0.00	0.00
35.25	35.00	120.0	61.5	50.0	0.0	5	0.0	0.9	2.05	1.43	0.9	1.3	56.8	62.4		1,085.6	2,197.7	4.67	3.3	0.66	1.0	0.83	1.35	0.91	1.00	0.54	1.30		0.95	1.43				0.00	0.00
35.75	35.50	120.0	61.5	50.0	0.0	5	0.0	0.9	2.08	1.44	0.9	1.3	56.7	62.3		1,087.3	2,204.8	4.70	3.3	0.66	1.0	0.83	1.35	0.91	1.00	0.54	1.30		0.96	1.44				0.00	0.00
36.25	36.00	120.0	61.6	50.0	0.0	5	0.0	1.0	2.11	1.46	0.9	1.3	56.6	62.2		1,089.1	2,211.8	4.72	3.2	0.65	1.0	0.82	1.35	0.90	1.00	0.55	1.30		0.97	1.46				0.00	0.00
36.75	36.50	120.0	61.6	50.0	0.0	5	0.0	1.0	2.14	1.47	0.9	1.3	56.5	62.1		1,090.8	2,218.7	4.75	3.2	0.65	1.0	0.82	1.35	0.90	1.00	0.55	1.30		0.98	1.47				0.00	0.00
37.25	37.00	120.0	61.7	50.0	0.0	5	0.0	1.0	2.17	1.48	0.9	1.3	56.4	62.0		1,092.4	2,225.6	4.78	3.2	0.65	1.0	0.82	1.35	0.90	1.00	0.55	1.30		0.99	1.48				0.00	0.00
37.75	37.50	120.0	61.7	50.0	0.0	5	0.0	1.0	2.20	1.50	0.9	1.3	56.3	61.9		1,094.1	2,232.4	4.80	3.2	0.64	1.0	0.81	1.35	0.90	1.00	0.55	1.30		1.00	1.50				0.00	0.00
38.25	38.00	120.0	61.8	50.0	0.0	5	0.0	1.0	2.23	1.51	0.9	1.3	56.2	61.8		1,095.7	2,239.1	4.83	3.2	0.64	1.0	0.81	1.35	0.89	1.00	0.55	1.30		1.01	1.51				0.00	0.00
38.75	38.50	120.0	81.8	65.0	0.0	7	40.5	0.1	2.26	1.53	0.9	1.3	74.3	79.9	100.0	1,093.0	2,228.0	4.84	3.2		0.7	0.81	1.35	0.89	1.00	0.56	1.30	2.00	1.02	1.26		0.000	0.0000	0.00	0.00
39.25	39.00	120.0	81.9	65.0	0.0	7	40.5	0.1	2.29	1.54	0.9	1.3	74.1	79.7	100.0	1,094.1	2,232.5	4.86	3.2		0.7	0.80	1.35	0.89	1.00	0.56	1.30	2.00	1.03	1.27		0.000	0.0000	0.00	0.00
39.75	39.50	120.0	81.9	65.0	0.0	7	40.5	0.1	2.32	1.56	0.9	1.3	74.0	79.6	100.0	1,095.2	2,236.9	4.88	3.1		0.7	0.80	1.35	0.88	1.00	0.56	1.30	2.00	1.04	1.28		0.000	0.0000	0.00	0.00
40.25	40.00	120.0	82.0	65.0	0.0	7	40.5	0.1	2.35	1.57	0.9	1.3	73.9	79.5	100.0	1,096.3	2,241.3	4.91	3.1		0.7	0.80	1.35	0.88	1.00	0.56	1.30	2.00	1.05	1.29		0.000	0.0000	0.00	0.00
40.75	40.50	120.0	82.0	65.0	0.0	7	40.5	0.1	2.38	1.59	0.9	1.3	73.7	79.3	100.0	1,097.3	2,245.6	4.93	3.1		0.7	0.80	1.35	0.88	1.00	0.56	1.30	2.00	1.06	1.30		0.000	0.0000	0.00	0.00
41.25	41.00	120.0	82.1	65.0	0.0	7	40.5	0.1	2.41	1.60	0.9	1.3	73.6	79.2	100.0	1,098.4	2,249.9	4.95	3.1		0.7	0.79	1.35	0.88	1.00	0.56	1.30	2.00	1.07	1.31		0.000	0.0000	0.00	0.00
41.75	41.50	120.0	82.1	65.0	0.0	7	40.5	0.1	2.44	1.61	0.9	1.3	73.5	79.0	100.0	1,099.4	2,254.1	4.98	3.1		0.7	0.79	1.35	0.87	1.00	0.57	1.30	2.00	1.08	1.32		0.000	0.0000	0.00	0.00
42.25	42.00	120.0	82.1	65.0	0.0	7	40.5	0.1	2.47	1.63	0.9	1.3	73.3	78.9	100.0	1,100.4	2,258.2	5.00	3.1		0.7	0.79	1.35	0.87	1.00	0.57	1.30	2.00	1.09	1.33		0.000	0.0000	0.00	0.00
42.75	42.50	120.0	82.2	65.0	0.0	7	40.5	0.1	2.50	1.64	0.9	1.3	73.2	78.8	100.0	1,101.4	2,262.3	5.02	3.1		0.7	0.78	1.35	0.87	1.00	0.57	1.30	2.00	1.10	1.34		0.000	0.0000	0.00	0.00
43.25	43.00	120.0	82.2	65.0	0.0	7	40.5	0.1	2.53	1.66	0.9	1.3	73.1	78.6	100.0	1,102.4	2,266.3	5.04	3.0		0.7	0.78	1.35	0.87	1.00	0.57	1.30	2.00	1.11	1.35		0.000	0.0000	0.00	0.00
43.75	43.50	120.0	34.5	50.0	0.0	5	0.0	0.9	2.56	1.67	0.8	1.3	29.1	34.7		1,019.8	1,939.3	4.70	2.8	0.54	1.0	0.78	1.35	0.90	1.00	0.55	1.30		1.11	1.67				0.00	0.00
44.25	44.00	120.0	34.5	50.0	0.0	5	0.0	0.9	2.59	1.69	0.8	1.3	29.0	34.6		1,021.0	1,943.9	4.72	2.8	0.54	1.0	0.77	1.35	0.90	1.00	0.55	1.30		1.12	1.69				0.00	0.00
44.75	44.50	120.0	34.4	50.0	0.0	5	0.0	0.9	2.62	1.70	0.8	1.3	28.9	34.5		1,022.2	1,948.6	4.74	2.8	0.54	1.0	0.77	1.35	0.90	1.00	0.55	1.30		1.13	1.70				0.00	0.00
45.25	45.00	120.0	34.4	50.0	0.0	5	0.0	0.9	2.65	1.72	0.8	1.3	28.8	34.4		1,023.4	1,953.1	4.77	2.8	0.53	1.0	0.77	1.35	0.90	1.00	0.55	1.30		1.14	1.72				0.00	0.00
45.75	45.50	120.0	34.4	50.0	0.0	5	0.0	0.9	2.68	1.73	0.8	1.3	28.6	34.2		1,024.6	1,957.7	4.79	2.8	0.53	1.0	0.77	1.35	0.90	1.00	0.55	1.30		1.15	1.73				0.00	0.00
46.25	46.00	120.0	34.4	50.0	0.0	5	0.0	0.9	2.71	1.74	0.8	1.3	28.5	34.1		1,025.8	1,962.2	4.81	2.8	0.53	1.0	0.76	1.35	0.90	1.00	0.55	1.30		1.16	1.74				0.00	0.00
46.50	46.38	120.0	34.4	50.0	0.0	5	0.0	0.9	2.73	1.75	0.8	1.3	28.4	34.0		1,026.6	1,965.5	4.83	2.8	0.53	1.0	0.76	1.35	0.90	1.00	0.55	1.30		1.16	1.75				0.00	0.00

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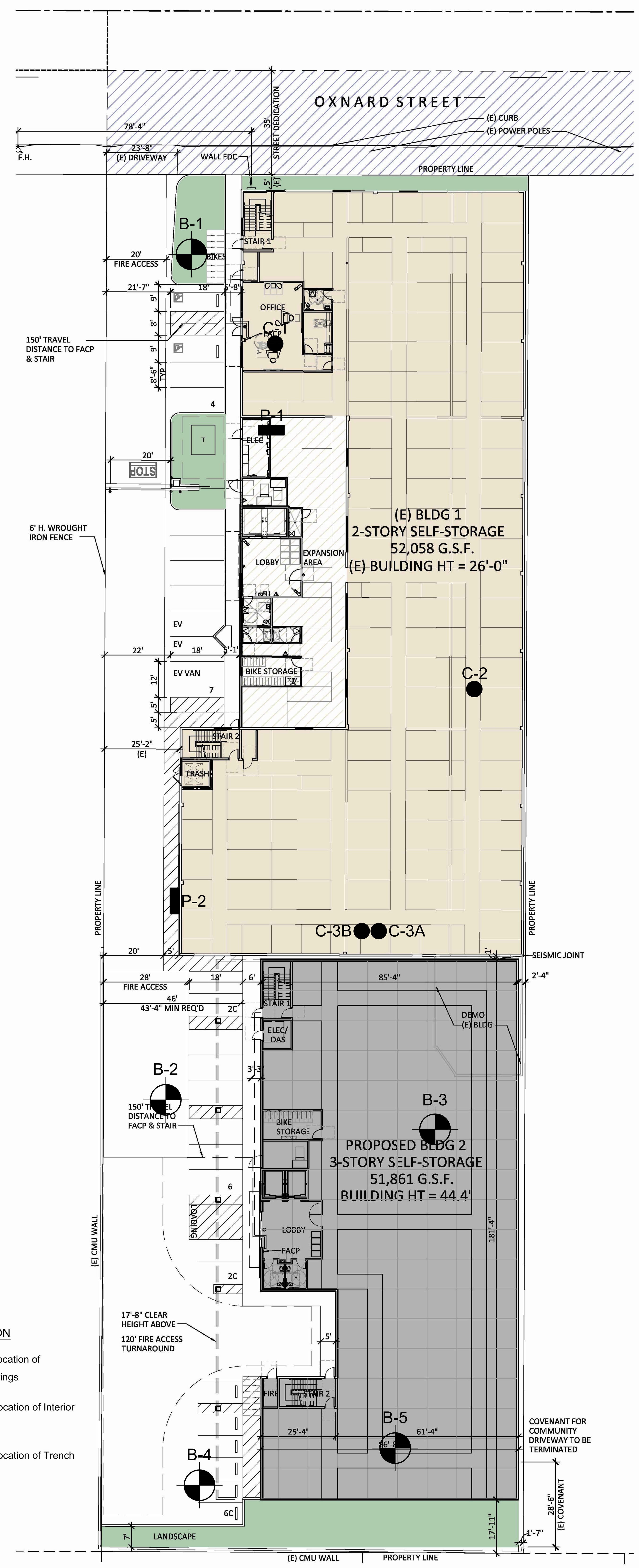


EXPLANATION

- B-5 — Approximate Location of Exploration Borings
- C-3B — Approximate Location of Interior Core
- P-2 — Approximate Location of Trench Pits

PROJECT DESCRIPTION

EXISTING 2-STORY BUILDING FOOTPRINT TO REMAIN WITH PROPOSED EXPANSION AT COURTYARD.
SELF-STORAGE FACILITY WILL HAVE A RENTAL OFFICE AND SECURED PARKING.
CONSTRUCTION OF A 3-STORY AT THE SOUTH OF EXISTING BUILDING.

PROJECT INFORMATION

PROJECT ADDRESS:	18618 OXNARD STREET, TARZANA, CA	
SITE APN:	2156-006-018	
LEGAL DESCRIPTION:	PARCEL "A", IN THE CITY OF LOS ANGELES, COUNTY OF LOS ANGELES, STATE OF CA, AS SHOWN ON A PARCEL MAP L.A. 802, FILED IN BOOK 7, PAGE 66 OF MAPS, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY	
SITE AREA GROSS:	65,495 S.F.	OR 1.50 ACRES
EXISTING ZONE:	M1-1	(AT NORTHERN PART OF SITE)
	(Q)MR1-1, P-1	(AT SOUTHERN PORTION OF SITE)
PROPOSED ZONE:	REQUEST FOR A VESTING ZONE CHANGE TO REMOVE THE 'Q' QUALIFIED CLASSIFICATION AND CHANGE THE MR1-1 ZONE DESIGNATION TO M1-1 ZONE	
USE (PROPOSED):	SELF-STORAGE	
FAR ALLOWED:	1.5	(65,495 S.F. x 1.5 = 98,243 S.F.)
FAR PROPOSED:	1.5	(98,174 S.F. / 65,495 GROSS SITE AREA)
SETBACKS: FRONT:	0'	IN M1 ZONE
SIDES:	0'	IN M1 ZONE
REAR:	0'	IN M1 ZONE
BUILDING HEIGHT MAX:	NONE	IN M1-1 ZONE
	37'	FOR SELF STORAGE
BUILDING HEIGHT PROPOSED:	37' x 20% = 44.4'	
ROOF TOP EQUIPMENT:	MECH EQUIPMENT; STAIR & ELEVATOR TOWERS CAN EXCEED BUILDING HEIGHT BY 10'	
LANDSCAPE FOR VEHICULAR AREA:		
PER LA LANDSCAPE DESIGN	LANDSCAPE BUFFER TO RESIDENTIAL = 7'	
GUIDELINES:	LANDSCAPE BUFFER TO ST. (50'-150' FRONTAGE) = 10'	
PER LADOT GUIDELINES:	LANDSCAPE BETWEEN PROPERTY LINE & PARK'G = 20'	

BUILDING AREA

EXISTING BUILDING 1 (GROSS SQUARE FOOTAGE):	
EXISTING 2-STORY BLDG TO REMAIN:	
GROUND FLOOR:	23,562 S.F.
SECOND FLOOR:	23,562 S.F.
TOTAL:	47,124 S.F.
BUILDING EXPANSION:	
COURTYARD x 2 FLOORS:	7,244 S.F.
TOTAL:	7,244 S.F.
EXISTING BLDG DEMOLITION (x2 FLRS):	-2,310 S.F.
TOTAL:	52,058 S.F.
BUILDING 2 (GROSS SQUARE FOOTAGE):	
GROUND FLOOR:	14,989 S.F.
2ND FLOOR:	18,436 S.F.
3RD FLOOR:	18,436 S.F.
TOTAL:	51,861 S.F.
GRAND TOTAL BUILDINGS 1 & 2:	103,919 S.F.
DEDUCTIBLE SQUARE FOOTAGE:	
EXISTING BUILDING 1:	
STAIR SHAFT (x2 QUANTITY) x 2 FLOORS:	-800 S.F.
1 SET OF ELEVATORS (x2 FLOORS):	-242 S.F.
ELEVATOR MACHINE ROOM:	-142 S.F.
FIRE RISER ROOM:	-50 S.F.
ELECTRICAL ROOM:	-200 S.F.
DAS ROOM:	-50 S.F.
BICYCLE PARKING :	-200 S.F.
EXTERIOR WALLS BLDG 1:	-866 S.F.
BUILDING 2:	
STAIR SHAFT (x2 QUANTITY) x 3 FLOORS:	-1,200 S.F.
1 SET OF ELEVATORS (x3 FLOORS):	-362 S.F.
ELEVATOR MACHINE ROOM:	-142 S.F.
FIRE RISER ROOM:	-50 S.F.
ELECTRICAL ROOM/ DAS ROOM:	-100 S.F.
BICYCLE PARKING :	-200 S.F.
EXTERIOR WALLS BLDG 2:	-1,141 S.F.
SUBTOTAL:	-5,745 S.F.
BUILDING (FLOOR AREA) :	**98,174 S.F.**
	98,174 S.F. < 98,243 S.F. FAR

CAR & BIKE PARKING ANALYSIS

PARKING REQUIREMENTS:	1 SP/500 SF FOR THE FIRST 10,000 S.F.	
(WAREHOUSE)	1/SP FOR EVERY 5,000 S.F. > 10,000 S.F.	
PARKING REQUIRED:	20 SP	(FIRST 10,000 S.F.)
	18 SP	(98,174 S.F. - 10,000 = 88,174 S.F.)
		88,174 S.F. / 5,000 S.F. = 18
	38 SP	TOTAL
* **PARKING REDUCTION:**	27 SP	38 x 30% = 11
		(38 SP - 11 SP = 27 SP)
	REPLACE PARKING SPACES WITH 4 REQUIRED OR NON-REQUIRED BIKE PARKING FOR EVERY PARKING SPACE UP TO 30% (*WITHIN 1500 FT OF A TRANSIT STOP)	
PARKING PROVIDED:	27 SP	11 SP SUBSTITUTED WITH BIKES
BIKE PARKING REQUIREMENTS:	1 SHORT TERM/ 10,000 S.F. & 1 LONG TERM/ 10,000 S.F.	
BIKE PARKING REQUIRED:	10 SP	SHORT TERM
	10 SP	LONG TERM
	20 SP	TOTAL MINIMUM
VEHICULAR SPACE SUBSTITUTION:	11 SP	4 BIKES FOR EVERY VEHICULAR SP (11)
TOTAL BIKE PARKING:	44 SP	
TOTAL BIKE PARK'G PROVIDED:	22 SP	LONG TERM
	22 SP	SHORT TERM

* **NOTE:** WHEN THE APPLICATION OF THESE REGULATIONS RESULTS IN THE REQUIREMENT OF A FRACTIONAL AUTOMOBILE SPACE, ANY FRACTION UP TO AND INCLUDING ONE-HALF MAY BE DISREGARDED AND ANY FRACTION OVER ONE-HALF SHALL BE CONSTRUED AS REQUIRING ONE AUTOMOBILE PARKING SPACE. LAMC 12.21-A4(K)

GEOTECHNICAL MAP

Gorian & Associates, Inc.
Applied Earth Sciences

Job No: 3191-0-0-100	Date: June 2021
Scale: 1 = 20'	Drawn by: / Approved by:	PLATE 1

NORTH

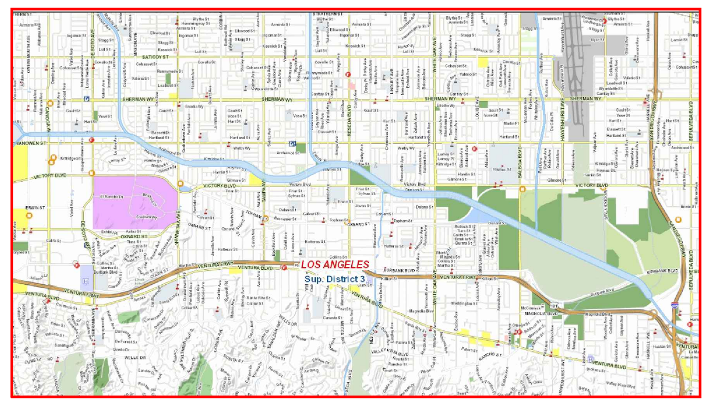
PALATINE CAPITAL PARTNERS

18618 OXNARD STREET | TARZANA, CA

PLOT PLAN
06.14.21

0 5' 10' 20' 40'
scale: 1" = 20'-0"

KSP STUDIO
architecture + engineering
23 ORCHARD ROAD, SUITE 200
LAKE FOREST, CA 92630
T 949.380.3970 F 949.380.3771



VICINITY MAP

NO SCALE

PRELIMINARY TITLE REPORT PREPARED BY:

CHICAGO TITLE COMPANY,

2365 NORTHSIDE DRIVE, SUITE 600, SAN DIEGO, CALIFORNIA 92108

TITLE OFFICER: KEN CYR & MARK FRANKLIN TEL: (619) 521-3673

ITEMS PER SCHEDULE B OF P.T.R. NO. 00149773-004-RL1-TVA, DATED 03-30-2021

NOTE: THIS CONDENSATION OF SCHEDULE B EXCEPTIONS ITEMS IN THE P.T.R. IS PREPARED FOR THE CONVENIENCE OF THOSE PERSONS USING THIS SURVEY. FOR FULL DETAILS OF TITLE ITEMS, REFER TO THE COMPLETE REPORT AND TO THOSE DOCUMENTS REFERRED TO THEREIN.

ITEM NO.	FOR	RECORDED DATA
A.	PROPERTY TAXES, WHICH ARE A LIEN NOT YET DUE AND PAYABLE	
B.	THE LIEN OF SUPPLEMENTAL OR ESCAPED ASSESSMENTS OF PROPERTY TAXES	
1.	COVENANTS, CONDITIONS, RESTRICTIONS AND EASEMENTS	BOOK 6254, PAGE 275 OF DEEDS BOOK 5728, PAGE 86 OF DEEDS
2.	COVENANTS, CONDITIONS, RESTRICTIONS AND EASEMENTS	BOOK 4539, PAGE 369 O.R.
3.	COVENANTS, CONDITIONS, RESTRICTIONS AND EASEMENTS	JUNE 26, 1979, INST. NO. 1979-697737 O.R.
4.	COVENANTS, CONDITIONS, RESTRICTIONS AND EASEMENTS	SEPTEMBER 12, 1997, INST. NO.1997-1411934 O.R.
5.	MASTER COVENANT AND AGREEMENT FOR CITY OF LOS ANGELES	JUNE 09, 2008, INST. NO. 2008-1013327 O.R.
6.	AN INSTRUMENT ENTITLED COVENANT AND AGREEMENT REGARDING MAINTENANCE OF BUILDING OF CITY OF LOS ANGELES	MARCH 31, 2009. INST. NO. 2009-457030 O.R.
7.	DEED OF TRUST	OCTOBER 15, 2010, INST. NO: 2010-1477358 O.R.
8.	AN INSTRUMENT ENTITLED COVENANT AND AGREEMENT REGARDING MAINTENANCE OF BUILDING OF CITY OF LOS ANGELES	JANUARY 31. 2011, INST. NO. 2011-166287 O.R.
9.	AN INSTRUMENT ENTITLED COVENANT AND AGREEMENT FOR COMMUNITY DRIVEWAY OVER TWO OR MORE PARCELS	JANUARY 31, 2011, INST. NO. 2011-166843 O.R.
10.	A DEED OF TRUST	JULY 28, 2017 INST. NO. 2017-849535 O.R.
11.	A DEED OF TRUST	MAY 18, 2020, INST. NO. 20200540045, O.R.
12.	WATER RIGHTS, CLAIMS OR TITLE TO WATER, WHETHER OR NOT DISCLOSED BY THE PUBLIC RECORDS.	
13.	MATTERS WHICH MAY BE DISCLOSED BY AN INSPECTION AND/OR BY A CORRECT ALTA/NSPS LAND TITLE SURVEY OF SAID LAND THAT IS SATISFACTORY TO THE COMPANY, AND/OR BY INQUIRY OF THE PARTIES IN POSSESSION THEREOF.	
14.	ANY RIGHTS OF THE PARTIES IN POSSESSION OF A PORTION OF, OR ALL OF, SAID LAND, WHICH RIGHTS ARE NOT DISCLOSED BY THE PUBLIC RECORDS.	

△ = INDICATES PLOTTED ITEM

NOTE:

1. BOUNDARIES SHOWN HEREON ARE PER FOUND MONUMENTS AND RECORD INFORMATION.
2. LANDSCAPING AND LANDSCAPE IRRIGATION DEVICES EXIST WITHIN THE PROPERTY AND ARE NOT SHOWN.
3. TREELINE CANOPIES ARE PICTORIAL, AND MAY NOT REFLECT TRUE DRIPLINES.
4. IF RETAINING WALLS OR SIMILAR STRUCTURES ARE TO BE DESIGNED FROM TOPOGRAPHY SHOWN HEREON, THE ELEVATIONS OF CRITICAL POINTS CONTROLLING THE DESIGN MUST BE VERIFIED PRIOR TO ADOPTION OF FINAL DESIGN.
5. THIS ALTA SURVEY SHOWN HEREON REFLECTS EXISTING IMPROVEMENTS AND THE BUILDING AS SHOWN ON GROUND LEVEL AND DOES NOT REFLECT ANY BELOW SURFACE.

ATTENTION:

IF THIS MAP IS PROVIDED IN AN ELECTRONIC FORMAT (IE: CAD) AS A COURTESY TO THE CLIENT, THE DELIVERY OF THE ELECTRONIC FILE DOES NOT CONSTITUTE THE DELIVERY OF OUR PROFESSIONAL WORK PRODUCT. ONLY THE SURVEYOR'S SIGNED AND SEALED PAPER PRINT OR PDF FORMATTED DRAWING CONSTITUTES OUR PROFESSIONAL WORK PRODUCT. IN THE EVENT THAT THE ELECTRONIC FILE IS ALTERED, THE SURVEYOR'S SIGNED AND SEALED PRINT OR PDF FORMATTED DRAWING MUST BE REFERRED TO FOR THE ORIGINAL AND CORRECT SURVEY INFORMATION. CHRIS NELSON AND ASSOCIATES, INC. SHALL NOT BE RESPONSIBLE FOR ANY MODIFICATIONS MADE TO THE PROVIDED CAD FILE OR FOR ANY PRODUCTS THAT HAVE BEEN DERIVED FROM THE CAD FILE, WHICH ARE NOT REVIEWED, SIGNED AND SEALED BY US.

SURVEYOR'S NOTE:

CHRIS NELSON & ASSOCIATES HAS RELIED SOLELY ON THE ABOVE-MENTIONED TITLE REPORT NO. 00149773-004-RL1-TVA, DATED MARCH 30, 2021, PREPARED BY CHICAGO TITLE COMPANY TO LOCATE TITLE MATTERS SHOWN HEREON UNLESS NOTED OTHERWISE. CHRIS NELSON & ASSOCIATES, INC. MAKES NO STATEMENT AS TO THE ACCURACY OR COMPLETENESS OF THE HEREON REFERENCED TITLED REPORT.

FURTHER ALL INTERESTED PARTIES ARE ADVISED THAT LIENS, TAXES, C.C. & R'S, TRUST DEEDS, COUNTY CONDITIONS, ORDINANCES, REGULATIONS, STANDARDS OR POLICIES HAVE NOT BEEN ADDRESSED BY THIS SURVEY OTHER THAN AS NOTED HEREON, AND THEN ONLY TO THE EXTENT ADDRESSED HEREON.

NOTES OF SPECIFIC INTEREST

1) MINOR IRRIGATION DEVICES, I.E. SPRINKLERS, PIPING, CONTROLLERS, LANDSCAPE, LOCAL AREA DRAINS AND TIMERS, VALVE BOXES, ETC. MAY EXIST ABOUT THE PROPERTY. SUCH ITEMS MAY OR MAY NOT HAVE BEEN SURVEYED AND NO REPRESENTATIONS IS MADE TO THEIR LOCATION OR RELATION TO PROPERTY LINES.

2) ZONING REPORT WAS NOT PROVIDED BY CLIENT (ITEM NO 6(a), 6(b))

3) THERE WAS NO EVIDENCE OF RECENT EARTH MOVING WORK, BUILDING CONSTRUCTION, OR ADDITIONS WAS OBSERVED IN THE PROCESS OF CONDUCTING FIELDWORK. (ITEM NO 16)

4)THERE WAS NO EVIDENCE OF RECENT STRET OR SIDEWALK CONSTRUCTION OR REPAIRS OBSERVED IN PROCESS OF CONDUCTING THE FIELDWORK (ITEM NO 17)

SURVEYOR'S STATEMENT:

TO CHICAGO TITLE COMPANY AND PALATINE CAPITAL PARTNERS ACQUISITIONS, LLC:

THIS IS TO CERTIFY THAT THIS MAP OR PLAT AND THE SURVEY ON WHICH IT IS BASED WERE MADE IN ACCORDANCE WITH THE 2021 MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/NSPS LAND TITLE SURVEYS, JOINTLY ESTABLISHED AND ADOPTED BY ALTA AND NSPS IN 2021, AND INCLUDES ITEMS 2, 3, 4, 5, 6(a), 6(b), 7(a), 7(b1), 7(b2), 7(c), 8, 9, 10, 11(a), 11(b), 13, 14, 15, 18 AND 19 OF TABLE A THEREOF. THE FIELD WORK WAS COMPLETED ON APRIL 26 2021.

CHRIS NELSON & ASSOCIATES, INC

Chris Nelson

CHRIS NELSON

PROFESSIONAL LAND SURVEYOR CHRIS D. NELSON NO. 6385 STATE OF CALIFORNIA

DATED: MAY 06, 2021

LEGAL DESCRIPTION:

THE LAND REFERRED TO HEREIN BELOW IS SITUATED IN THE CITY OF LOS ANGELES, IN THE COUNTY OF LOS ANGELES, STATE OF CALIFORNIA, AND IS DESCRIBED AS FOLLOWS:

PARCEL "A", IN THE CITY OF LOS ANGELES, COUNTY OF LOS ANGELES, STATE OF CALIFORNIA, AS SHOWN ON A PARCEL MAP L.A. 802, FILED IN BOOK 7, PAGE 66 OF MAPS, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY.

EXCEPT FROM THAT PORTION OF SAID LAND LYING WITHIN THE LINES OF LOT 68 OF TRACT NO. 7209, AS PER MAP RECORDED IN BOOK 83, PAGES 7 AND 8 OF MAPS, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY. ALL OIL, GAS, MINERAL AND OTHER HYDROCARBON SUBSTANCES THAT MAY BE PRODUCED IN AND UNDER SAID LOT 68, BUT WITHOUT RIGHT OF SURFACE ENTRY THERETO, BELOW A DEPTH OF 500 FEET FROM THE SURFACE THEREOF, AS EXCEPTED AND RESERVED BY EDWARD B. GUILD, AN UNMARRIED MAN AND DAVID V. KARNEY, AN UNMARRIED MAN, IN DEED RECORDED OCTOBER 28, 1963 AS INSTRUMENT NO. 1963-4974, IN BOOK D-3097, PAGE 732 OF OFFICIAL RECORDS.

ALSO EXCEPT FROM THAT PORTION OF SAID LAND LYING WITHIN THE LINES OF LOT 69 OF TRACT NO. 7209, IN THE CITY OF LOS ANGELES, COUNTY OF LOS ANGELES, STATE OF CALIFORNIA, AS PER MAP RECORDED IN BOOK 83, PAGES 7 AND 8 OF MAPS, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY, ALL OIL, GAS, MINERAL AND OTHER HYDROCARBON SUBSTANCES THAT MAY BE PRODUCED IN AND UNDER SAID LOT 69, BUT WITHOUT RIGHT OF SURFACE ENTRY THERETO, BELOW A DEPTH OF 500 FEET FROM THE SURFACE THEREOF, AS EXCEPTED AND RESERVED BY FANNIE E. TUFTS, A MARRIED WOMAN, WHO ACQUIRED TITLE AS FANNIE E. NICHOLS, A SINGLE WOMAN, IN DEED RECORDED MARCH 25, 1965 AS INSTRUMENT NO. 2482, IN BOOK D-2844, PAGE 854 OF OFFICIAL RECORDS.

APN: 2156-006-018

LEGEND:

- MAIL BOX
- ELECTRICAL PULL BOX
- TREE
- FIRE HYDRANT
- GAS METER
- GAS VALVE
- SIGN
- POWER POLE
- MONITORING WELL
- STORM DRAIN MANHOLE
- SEWER MAN HOLE
- WATER METER
- WATER VALVE
- BUILDING LINE
- CHAINLINK FENCE
- METAL FENCE
- WALL
- CENTERLINE
- PROPERTY LINE
- LOT LINE
- ROW

BENCH MARK:

B M NO 07-10854 NAVD 1988 CITY OF LOS ANGELES DATUM

FD WIRE SPIKE IN EAST CURB YOLANDA VENUE; 2 FEET SOUTH OF BC CURB RETURN SOUTH OF OXNARD STREET

ELEVATION = 757.247 FEET (ADJUSTMENT OF 2000)

FLOOD ZONE:

FLOOD ZONE X: AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN PER F.I.R.M COMMUNITY PANEL NO. 06037C1295F DATED 09-22-2008

BASIS OF BEARINGS:

BASIS OF BEARING FOR THIS SURVEY IS THE CENTERLINE OF OXNARD STREET (FORMERLY TOPHAM STREET) AS SHOWN ON THE PARCEL MAP LA NO 802, PMB 07-66, AS N 89° 53' 59" E

SITE AREA:

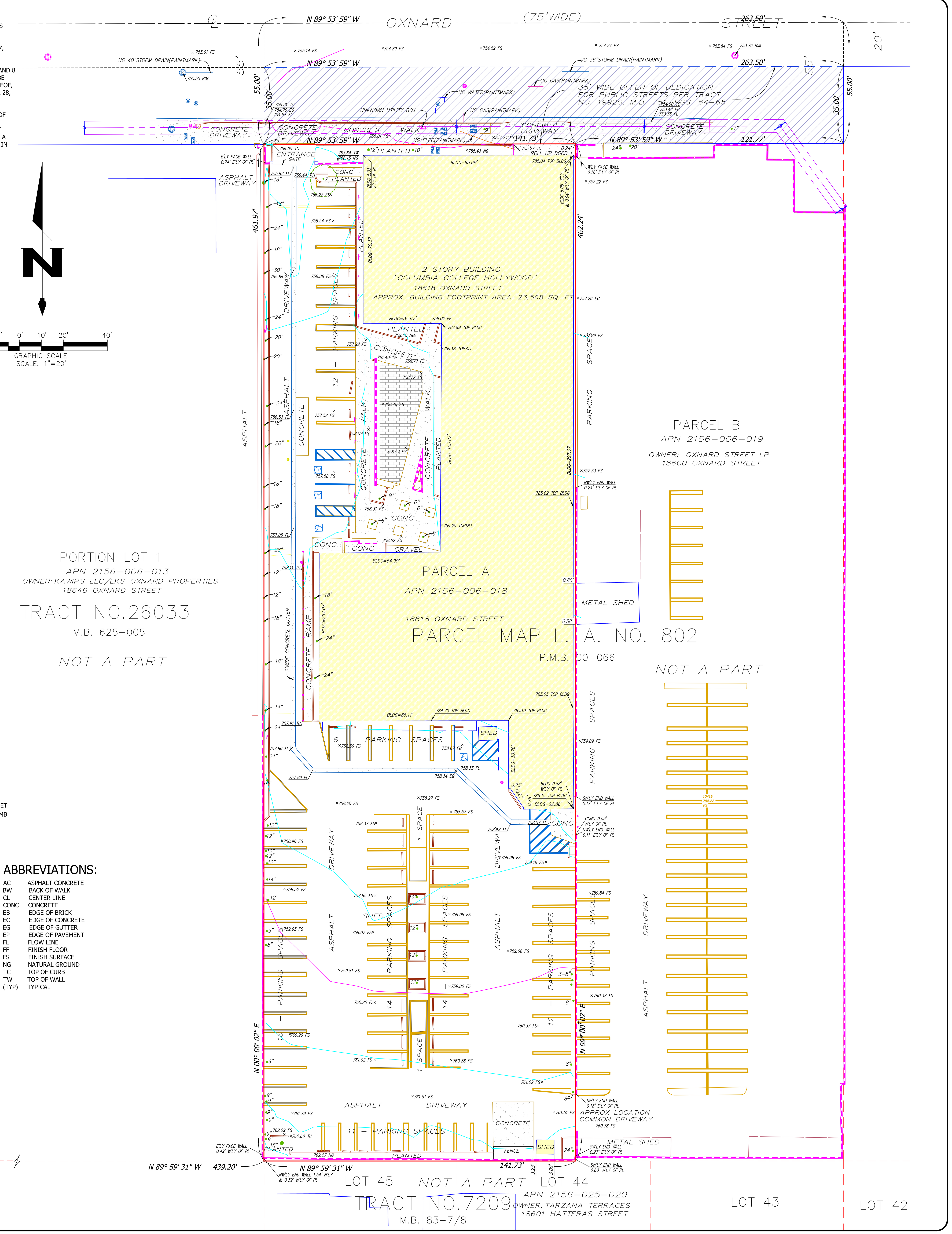
NET AREA= ± 65,494.48 SQ. FT OR ± 1.50 ACRES

PARKING SPACES:

4 HANDICAP SPACES
13 COMPACT SPACES
74 REGUKAR PARKING SPACES

ABBREVIATIONS:

AC	ASPHALT CONCRETE
BW	BACK OF WALK
CL	CENTER LINE
CONC	CONCRETE
EB	EDGE OF BRICK
EC	EDGE OF CONCRETE
EG	EDGE OF GUTTER
EP	EDGE OF PAVEMENT
FL	FLOW LINE
FF	FINISH FLOOR
FS	FINISH SURFACE
NG	NATURAL GROUND
TC	TOP OF CURB
TW	TOP OF WALL
(TYP)	TYPICAL



YOLANDA AVE

30.00'

FD L & TAG, RCE 19335 1' WLY OF R/W

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Gorian & Associates, Inc.
Applied Earth Sciences
Job No: 3191-0-0-100
Scale: 1" = 20'
Drawn by:
Approved by:
Date: June 2021
Plate 2

ALTA/NSPS LAND TITLE SURVEY
PARCEL A, PARCEL MAP L.A. NO. 802, PMB 07-66
18618 OXNARD STREET, CITY OF LOS ANGELES, COUNTY OF LOS ANGELES

JOB NO. 21-5765

SCALE: 1" = 20'

DATE: APR 26, 2021

DRAFTED: SDN

SHEET NO.
1
OF 1 SHEET