

**Appendix I:  
Geology and Soils Supporting Information**

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**GEOTECHNICAL INVESTIGATION**  
CAMDEN AVENUE RESIDENTIAL DEVELOPMENT  
BLOSSOM HILL ROAD AND SINGLETREE WAY  
SAN JOSE, CALIFORNIA

for  
Mana Camden Fund, LLC  
September 15, 2023

BGG Project No. G367.01

## **Via E-Mail**

September 15, 2023  
BGG Project No. G367.01

Scott Murray  
Mana Camden Fund, LLC  
5927 Balfour Court, Suite 208  
Carlsbad, California 92008

Subject:     **Geotechnical Investigation**  
              **Camden Avenue Residential Development**  
              Between Blossom Hill Road and Singletree Way  
              San Jose, California

Dear Mr. Murray:

Baez Geotechnical Group (BGG) has completed a geotechnical investigation for the design and construction of a proposed residential development at the subject site in San Jose, California. The irregular shaped site is located on the east side of Camden Avenue, north of Singletree Way, to the north and east of Beacon School, as shown on Plate 1, Vicinity Map. It is our understanding that the approximately 8.3-acre site will be developed with 105 new townhomes constructed within nineteen 3-unit buildings and twelve 4-unit buildings. The site is relatively flat, hence minor grading is anticipated.

### **PURPOSE AND SCOPE OF SERVICES**

The purpose of our investigation was to evaluate the subject site with respect to soil and groundwater conditions, and to provide geotechnical recommendations for the design and construction of the proposed improvements. The scope of our services included a review of available geologic literature covering the site, field exploration, field percolation testing, laboratory testing, engineering analyses, and preparation of this report.

### **FIELD EXPLORATION, PERCOLATION TESTING, AND LABORATORY TESTING**

#### **FIELD EXPLORATION**

Our field exploration was conducted on August 15, 2023, which consisted of drilling borings and excavating test pits in the locations shown on Plate 2, Site Plan. Four borings were drilled to depths of up to 21-feet below the ground surface (bgs) using a truck-mounted drill rig equipped with hollow stem augers. Materials encountered in the borings were visually classified in the field and logs were recorded. Driven Standard Penetration Test (SPT) and Modified California split spoon tube soil samples were obtained for laboratory testing. The borings were backfilled with grout upon completion, per local agency requirements. The boring logs, showing soil classifications and blow counts, are contained in Appendix A.

Three test pits were excavated to depths between 5-feet and 7-feet bgs using a subcompact excavator equipped with a 2-foot-wide bucket. Materials encountered in the test pits were visually classified in the field and logs were recorded. Bulk soil samples were obtained for laboratory testing and the test pits were then backfilled loosely and track-walked upon completion. The test pit logs showing descriptions of the materials encountered are contained in Appendix B.

### FIELD PERCOLATION TESTING

Field percolation testing was performed in the bottom of five additional borings, BP1 through BP5, drilled to depths between 2-feet and 5-feet bgs near the locations of proposed bioretention areas. The locations of the field percolation tests are shown on Plate 2, Site Plan and logs for the percolation test borings are contained in Appendix A. Upon drilling to the testing depth, open-ended PVC pipes were placed in the boreholes, approximately 2-inches of clean pea gravel was placed in the bottom of the holes, and the bottoms of the holes were then saturated. Subsequently, an approximately two-foot-tall column of water was poured into the test pipes and the testing began. The time elapsed for the water level to drop in the pipes was monitored until stabilized rates were observed and recorded. The following is a summary of the stabilized percolation rates recorded for the soils encountered at the specified depths at each test location.

#### SUMMARY OF FIELD PERCOLATION RATES

Test Location and Depth (depth below ground surface)		Soil Type at Test Depth	Infiltration Rate (inches/hour)
BP1	2 feet	SC/GP – Clayey Sand with Gravel and Sandy Gravel with Clay	6.4
BP2	5 feet	GP/GC – Sandy Gravel with Clay and Clayey Gravel with Sand	21.6
BP3	5 feet	GP/GC – Sandy Gravel with Clay and Clayey Gravel with Sand	16.6
BP4	5 feet	GP/GC – Sandy Gravel with Clay and Clayey Gravel with Sand	12.0
BP5	2 feet	SC/GP – Clayey Sand with Gravel and Sandy Gravel with Clay	7.2

The project civil engineer or stormwater management system designer should determine the appropriate infiltration rate to be used for design purposes, based upon these test results. An appropriate safety factor should be applied to the field percolation rates.

### LABORATORY TESTING

Laboratory testing was performed on selected samples obtained from our borings, including tests for sieve analysis, hydrometer, Atterberg Limits, consolidation/swell, direct shear, R-Value, and corrosion. Some of the laboratory test results are summarized below and within the boring and test pit logs, and the complete test results are contained in Appendix C.

A bulk sample containing soil obtained from TP1 between depths of 1-foot to 5-feet bgs was found to have a maximum dry density of 129.4 pcf, an optimum moisture content of 10.1 percent, and an R-Value of 61.

**LABORATORY TEST RESULTS – SIEVE, HYDROMETER, ATTERBERG LIMITS**

Location & Depth	% Gravel/Cobbles	% Sand	% Fines <sup>(1)</sup>	PI <sup>(2)</sup>	LL <sup>(3)</sup>
TP1: 1-5 feet	53	33	14	8	26
B2: 7.5-8.5 feet	61	31	8	11	30
B3: 15-16.5 feet	34	48	18	---	---
B4: 20-21.5 feet	49	39	12	---	---

<sup>(1)</sup> % Fines = % Passing No. 200 sieve, percentage of silt and clay sized particles

<sup>(2)</sup> PI = Plasticity Index, <sup>(3)</sup> LL = Liquid Limit

The single-point consolidation/swell test consisted of loading a relatively undisturbed soil sample with an initial seating load approximately equivalent to the in-situ overburden pressure, then recording the amount of long-term consolidation/swell after adding a surcharge load of 1,500 psf and again after saturation.

**LABORATORY TEST RESULTS – CONSOLIDATION/SWELL**

Location and Depth	Soil Type	Percent Moisture In-situ / Saturation	Consolidation or Swell <sup>(1)</sup>	Consolidation or Swell <sup>(2)</sup>
TP1: 1-5 feet Remolded to 90%	SC/GP – Clayey Sand with Gravel and Sandy Gravel with Clay	9.6% / 56%	-0.2%	-0.2%

<sup>(1)</sup> Consolidation or swell percent after adding surcharge load

<sup>(2)</sup> Additional consolidation or swell after saturation

**LABORATORY TEST RESULTS –DIRCT SHEAR**

Location and Depth	Soil Type	Friction Angle	Cohesion
TP1: 1-5 feet Remolded to 90%	SC/GP – Clayey Sand with Gravel and Sandy Gravel with Clay	Peak: 29 degrees Residual: 30 degrees	Peak: 285 psf Residual: 140 psf
B3: 6.5-7.5 feet	GP/GC – Sandy Gravel with Clay and Clayey Gravel with Sand	Peak: 25 degrees Residual: 24 degrees	Peak: 1,161 psf Residual: 1,100 psf

A bulk sample containing soil from test pit TP1 between depths of 1 to 5-feet bgs was submitted to CERCO Analytical, a state-certified analytical laboratory, for corrosion testing. The corrosion test results and a brief evaluation are contained in Appendix D. The soil was found to be moderately corrosive to buried metals and not corrosive to concrete in contact with the ground. The corrosion test results should be forwarded to the civil, structural, and underground utility design engineers.

## **GEOTECHNICAL FINDINGS**

### **SITE DESCRIPTION**

The proposed residential development site is currently in use for recreational sports fields and school recreation areas, to the north and east of Beacon School. The portion of the site east of the school contains four baseball diamonds, a pitching mound area, and several storage buildings. The narrow portion of the site to the north of the school contains a batting cage and recreation areas for the school facility. Occasional small to medium trees line the edges of the site. The site is relatively flat with surface elevations varying between 271 and 278 feet above mean sea level (MSL).

### **SUBSURFACE CONDITIONS**

The site is mantled by the Urban Land-Flaskan complex, according to the United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Web Soil Survey. The upper 5-feet of these soils are reported to contain 22 to 92 percent passing the No. 4 sieve (contain 8 to 72 percent gravel), have 6 to 55 percent passing the No. 200 sieve (silt-sized and clay-sized particles), have a Liquid Limit between 24 and 51, and have a Plasticity Index between 9 and 25 (moderately expansive). These soils are classified in Hydrologic Group C with infiltration rates between 0.2 to 0.6 inches per hour.

The following is a general summary of the subsurface soil conditions encountered in our borings. More detailed descriptions are contained in the boring logs in Appendix A and the test pit logs in Appendix B.

- Upper 2 to 5-feet bgs – Dense clayey sand with gravel to sandy gravel with clay.
- Loose to medium dense undocumented fill was encountered in the northern portion of the site in boring B2 and test pit TP2.
- Between 2 to 5-feet bgs down to 21-feet bgs – very dense sandy gravel with clay to clayey gravel with sand, with cobbles up to 1-foot in diameter.
- The Mobile 53R drill rig equipped with hollow stem augers encountered refusal at a depth of about 20-feet bgs in the two deeper borings.

### **GROUNDWATER**

According to the California Department of Water Resources (DWR) Water Data Library website, two groundwater monitoring wells are located within about ½-mile from the site. Groundwater levels reported for a well north of the site, which has a ground surface elevation of about 230-feet MSL, were more than 50-feet-deep prior to about 1970 and more than 25-feet-deep since circa 1970. A well northeast of the site which has a ground surface elevation of about 215-feet MSL had reported groundwater levels more than 15-feet-deep. The Camden residential development site is at approximately elevation 275-feet MSL and is located closer to the mountains to the south, whereas the reported nearby wells are in the lower alluvial basin north of the site. Hence, it is our opinion that groundwater levels at the Camden site are deeper than reported in these nearby wells.

Groundwater was not encountered in our deepest borings drilled to maximum depths of 20-feet and 21½-feet bgs (both borings met refusal). Numerous factors contribute to groundwater level fluctuations including precipitation, irrigation, and well pumping. A detailed evaluation of these and other factors, which may be responsible for groundwater fluctuations, was beyond the scope of this investigation.

## **RELEVANT GEOLOGIC HAZARDS**

The site is located within a seismically active region and will experience seismic shaking from large earthquakes. According to the ASCE 7 Hazard Tool website (utilizing ASCE7-16), the site modified peak ground acceleration is 0.99g. Alternately, the site modified peak ground acceleration utilizing ASCE7-22 is 0.66g. The site is not located within a seismic hazard zone mapped for earthquake faults by the California Geological Survey. Hence, the likelihood for surface fault rupture to occur at the site is nil.

The site is not mapped to be in a California seismic hazard zone for liquefaction. Liquefaction is the temporary transformation of saturated, loose to medium dense, sandy and silty soils from a solid state to a liquid state due to strong ground shaking during a major earthquake. Groundwater was not encountered in our deepest boring at a depth 21½-feet bgs. It is our opinion that the potential for liquefaction induced differential ground settlement and/or lateral spreading to impact the proposed project are very low since the site is underlain by dense to very dense gravelly and cobbly soils and groundwater levels are relatively deep. The potential for seismically induced dry ground settlement caused by the consolidation of sandy soils above the water table is also low, due to the predominantly gravelly and clayey soils.

## **CONCLUSIONS AND RECOMMENDATIONS**

### **GENERAL**

We conclude, from a geotechnical engineering standpoint, that the proposed residential development can generally be constructed as planned, provided that the conclusions and recommendations contained in this report are incorporated into the project design and during construction. The predominant geotechnical consideration for this project is the presence of soils consisting of dense clayey gravels and sandy gravels with cobbles up to about 1-foot in diameter. This will impact excavations during mass grading, foundation construction, and underground utility installations, as follows:

- We are recommending Post-Tensioned (PT) Slab foundations rather than shallow foundations due to the difficulty for excavating neat foundation cuts in the gravelly and cobbly soils.
- The grading, foundation, and underground utility contractors should be made aware of gravelly and cobbly soil conditions. Cobbles up to about one foot in diameter were encountered in our test pits, which were excavated up to 7-feet-deep.
- Compacting gravelly and cobbly soil may require specifying a performance criteria for assessing compaction since laboratory maximum density test results will not be

representative of the oversized material characteristics. This will likely include determining the number of passes of a compactor required until field density tests show minimal increase in density with additional effort.

- Oversized material, if encountered during grading and utility excavations, will need to be buried in deeper fills or segregated to be used in landscape areas or offhauled.

## **SITE PREPARATION AND GRADING**

Our general site preparation and grading recommendations are as follows:

1. Existing grass, weeds, trees, underground utilities, and structures should be removed. The excavations from the removal of tree roots, foundations, and underground utility lines will need to be backfilled with engineered fill.
2. Existing undocumented fill in the northern portion of the site will need to be removed and replaced with engineered fill.
3. Building pad and fill areas should be scarified to a depth of 1-foot and compacted as prescribed below.
4. Gravel and cobbles more than 4-inches is largest dimension should be buried in deeper fills in building pad areas, segregated to be utilized in landscape areas, or removed from the site.
5. If zones of soft or loose soil are encountered during grading or soil processing operations, additional overexcavation of the loose soils may be required to expose deeper, firm soils. This should be determined in the field by the soils engineer.
6. Engineered fill soils should be compacted to not less than 90 percent relative compaction at moisture contents a minimum of 3 percent over the optimum moisture.
7. A performance specification will need to be developed in the field to assess adequate compaction/processing for material with excessive gravel and cobble content.
8. Relative compaction refers to the in-place dry density of soil expressed as a percentage of its maximum dry density as determined by ASTM D1557 maximum density test procedure. Optimum moisture is the water content (percentage by dry weight) corresponding to the maximum dry density.
9. Fill should be properly moisture conditioned and placed in thin lifts (normally 6 to 8 inches, depending on the compaction equipment used) and compacted as prescribed above.
10. The onsite soils are generally suitable for use as engineered fill, provided they are free of debris, significant vegetation, rocks greater than 4 inches in largest dimension, and other deleterious matter. Debris, if encountered during grading, will need to be removed from the site.
11. Import fill, if required, should be subject to the evaluation of the soil engineer prior to its use. Import fill should have a Plasticity Index less than 12, contain no deleterious matter, and contain no rocks greater than 6 inches in largest dimension. Imported soil should be evaluated for potential environmental contamination prior to importing to the site.

12. Observation and soil density tests should be performed during site preparation and grading to assist the contractor in obtaining the required degree of compaction and proper moisture content. Where the compaction and moisture content are outside the range required, additional effort and adjustments to the moisture content should be made until the specified compaction and moisture conditioning is achieved.
13. The soil engineer should be notified at least 48 hours prior to the start of any grading operations. The procedure and methods of grading may then be discussed between the contractor and the soils engineer.

### **UTILITY TRENCH EXCAVATION AND BACKFILL**

Excavations should conform to applicable State and Federal industrial safety requirements. Temporary trench sidewalls more than 4-feet deep may have to be laid back to 1H:1V or flatter to have stable sidewalls.

Materials quality, placement procedures, and compaction operations for utility line bedding and shading materials should meet local agency and/or other applicable agency requirements. Utility trench backfill above the shading materials may be comprised of the onsite soils, provided they are processed to remove gravel larger than 4-inches in largest dimension, rubbish, vegetation, and other undesirable substances. Backfill materials should be placed in level lifts about 8 to 10 inches in loose thickness, moisture conditioned, and mechanically compacted according to the requirements contained in the “Site Preparation and Grading” section.

The underground utility contractor should be made aware of the gravelly and cobbly soil conditions at the site. Gravel and cobbles up to 1-foot in diameter are present at the site. During construction, the gravel and cobble-sized particles may be susceptible to caving/falling from the excavation sidewalls.

### **CALIFORNIA BUILDING CODE (CBC) SEISMIC DESIGN PARAMETERS**

The subject site is located at approximately 37.2352 degrees north latitude and -121.9016 degrees west longitude. The site is located in a deep alluvial valley; hence the structural engineer should utilize Site Class D – Stiff Soil for determining seismic response spectra parameters. According to the ASCE 7 Hazard Tool website (utilizing ASCE7-16), the site modified peak ground acceleration is 0.98g. Alternately, the site modified peak ground acceleration utilizing ASCE7-22 is 0.76g.

### **FOUNDATIONS**

We recommend utilizing post-tensioned (PT) slab-on-grade foundations for the proposed townhome residences. The design criteria contained in the third edition of the PTI design manual was utilized to develop the following parameters.

**PT SLAB DESIGN PARAMETERS**

Allowable Bearing Capacity (may be increased by 1/3 for temporary seismic and wind loads, at the discretion of the structural engineer)	2,000 psf overall 2,500 psf isolated
Passive Equivalent Fluid Pressure (neglect the upper foot if the ground surface is not confined by slabs or pavement)	300 pcf
Base Friction Coefficient	0.30
<u>Edge Moisture Variation Distance</u> Center Lift Edge Lift	9.0 feet 5.5 feet
<u>Differential Swell</u> Center Lift Edge Lift	0.80 inches 1.20 inches

PT slab foundations can be constructed directly on properly prepared subgrade soils. The upper foot of the building pad subgrades should be presoaked to at least 3% over the optimum moisture content and the subgrade soils should not be permitted to dry out before placement of the vapor retarder. Where moisture vapor through the slabs would be objectionable, the use of a vapor retarder should be considered. From a geotechnical standpoint, we do not require a sand layer above the vapor retarder. Compacted subgrade soils may become disturbed during utility trench excavation and backfilling. Disturbed soils should be uniformly moisture conditioned and recompacted prior to concrete placement.

Site walls, landscape structures, and other minor structures can be supported on shallow strip and pedestal footings or drilled, reinforced concrete piers. The following are recommendations for these types of foundations.

**SHALLOW STRIP AND ISOLATED PEDESTAL FOUNDATIONS**

Allowable Bearing Capacity (DL + LL) (may be increased by one-third for temporary seismic and wind loads, at the discretion of the structural engineer)	2,500 psf
Allowable Passive Equivalent Fluid Pressure (neglect the upper foot if the ground surface is not confined by slabs or pavement)	300 pcf
Allowable Base Friction Coefficient	0.30
Minimum Footing Depth	2-feet

It is recommended that footing excavations be probed by the geotechnical engineer prior to the placement of reinforcing steel. Concrete for footings should be placed against undisturbed engineered fill or firm onsite soils.

The foundation contractor should be made aware of the gravelly and cobbly soil conditions at the site. Gravel and cobbles up to 1-foot in diameter are present at the site. During construction, the gravel and cobble-sized particles may be susceptible to caving/falling into foundation excavations.

### DRILLED REINFORCED CONCRETE PIERS

Allowable Skin Friction Vertically Down, Ignore the upper foot	400 psf
Allowable Skin Friction Vertically Up, Ignore the upper foot	250 psf
Allowable Lateral Passive Resistance, equivalent fluid pressure Acting on 1.5 pier diameters, Ignore the upper 2-feet	300 pcf
Minimum Pier/Pile Diameter	12 inches

The bottoms of drilled pier holes should be cleaned to remove loose soil, gravel, cobbles, and slough prior to placing reinforcing steel and concrete.

### EXTERIOR FLATWORK SUGGESTIONS

We suggest that exterior concrete flatwork, such as sidewalks, walkways, and patios, be at least 5-inches-thick and reinforced with reinforcing bars. Driveways and drive aisles should be at least 6-inches-thick and reinforced. Where possible, flatwork should be doweled into adjacent flatwork and driveways to reduce the potential for differential vertical movement caused by the expansive soils. The flatwork section can be constructed directly on properly prepared subgrade soils that have been presoaked to at least 3% over the optimum moisture content, compacted, and rolled smooth. The subgrade soil should be maintained in a saturated condition and should not be permitted to dry out prior to concrete placement.

### RETAINING WALLS

The following lateral pressures should be utilized in the design for retaining walls. The recommended lateral pressures assume drained conditions and that retaining walls will have drainage. Exterior retaining walls less than 2-feet-tall do not require drainage.

Active Equivalent Fluid Pressure (Level backfill and drained conditions)	35 pcf
At-Rest Equivalent Fluid Pressure (Level backfill and drained conditions)	55 pcf
Surcharge Load, where applicable	Designated by structural engineer

### PAVEMENT RECOMMENDATIONS

We are providing recommendations for structural pavement sections that will be supported by the onsite soils. Our pavement analyses are based upon an R-Value of 30 using the Caltrans Design Method for Flexible Pavement for a 20-year design life. The following are our recommendations

for Asphalt Concrete (AC) pavement sections along with their corresponding traffic indices (TI), which are indications of load frequency and intensity.

#### **AC PAVEMENT SECTIONS**

<b>Traffic Index</b>	<b>AC (in)</b>	<b>Class 2 AB (in)</b>	<b>Total (in)</b>
TI=4.5	3	4	7
TI=5	3	5	8
TI=6	3	8	11
TI=7	4	9	13

The upper foot of the subgrade soils in pavement areas should be compacted to at least 95 percent relative compaction and rolled to provide a smooth and unyielding surface. Class 2 aggregate base (AB) should also be compacted to at least 95 percent relative compaction in pavement areas.

#### **ADDITIONAL SOIL ENGINEERING SERVICES**

To a degree, the performance of the proposed project is dependent on the procedures and quality of the construction. Therefore, we should provide observation of the contractor's procedures and the exposed soil conditions, and field and laboratory testing during site clearing, mass grading, building pad preparation, placement and compaction of fill, underground utility and retaining wall backfilling, and foundation and pavement construction. These observations will allow us to check the contractor's work for conformance with the intent of our recommendations and to observe any unanticipated soil conditions that could require modification of our recommendations. In addition, we would welcome the opportunity to meet with the contractor prior to the start of earthwork operations to discuss the procedures and methods of construction. This can facilitate the performance of the construction operations and minimize possible misunderstanding and construction delays.

#### **LIMITATIONS**

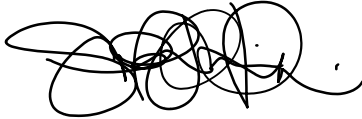
The conclusions and recommendations contained in this report are based upon the information provided to us regarding the proposed site improvements, subsurface conditions encountered in our field explorations, laboratory testing, and professional judgment. This study has been conducted in accordance with current professional geotechnical engineering standards; no other warranty is expressed or implied.

If changes are planned or implemented regarding the nature, design, and/or location of the proposed improvements, or if it is found during construction that subsurface conditions differ from those described in this report, then the conclusions and recommendations in this report shall be considered invalid, unless the changes are reviewed, and the conclusions and recommendations are modified or approved in writing.

Should you have questions or need additional information, please contact us. We appreciate the opportunity to provide professional services to you and to be involved in the design for the Camden residential development project.

Respectfully Submitted,

**BAEZ GEOTECHNICAL GROUP**



Stefanie Parman-Ribeiro  
Project Engineer



William R. Stevens  
Principal Engineer  
GE 2339

Attachments:

Plate 1 – Vicinity Map

Plate 2 – Site Plan

Appendix A – Boring Logs

Appendix B – Test Pit Logs

Appendix C – Geotechnical Laboratory Test Results

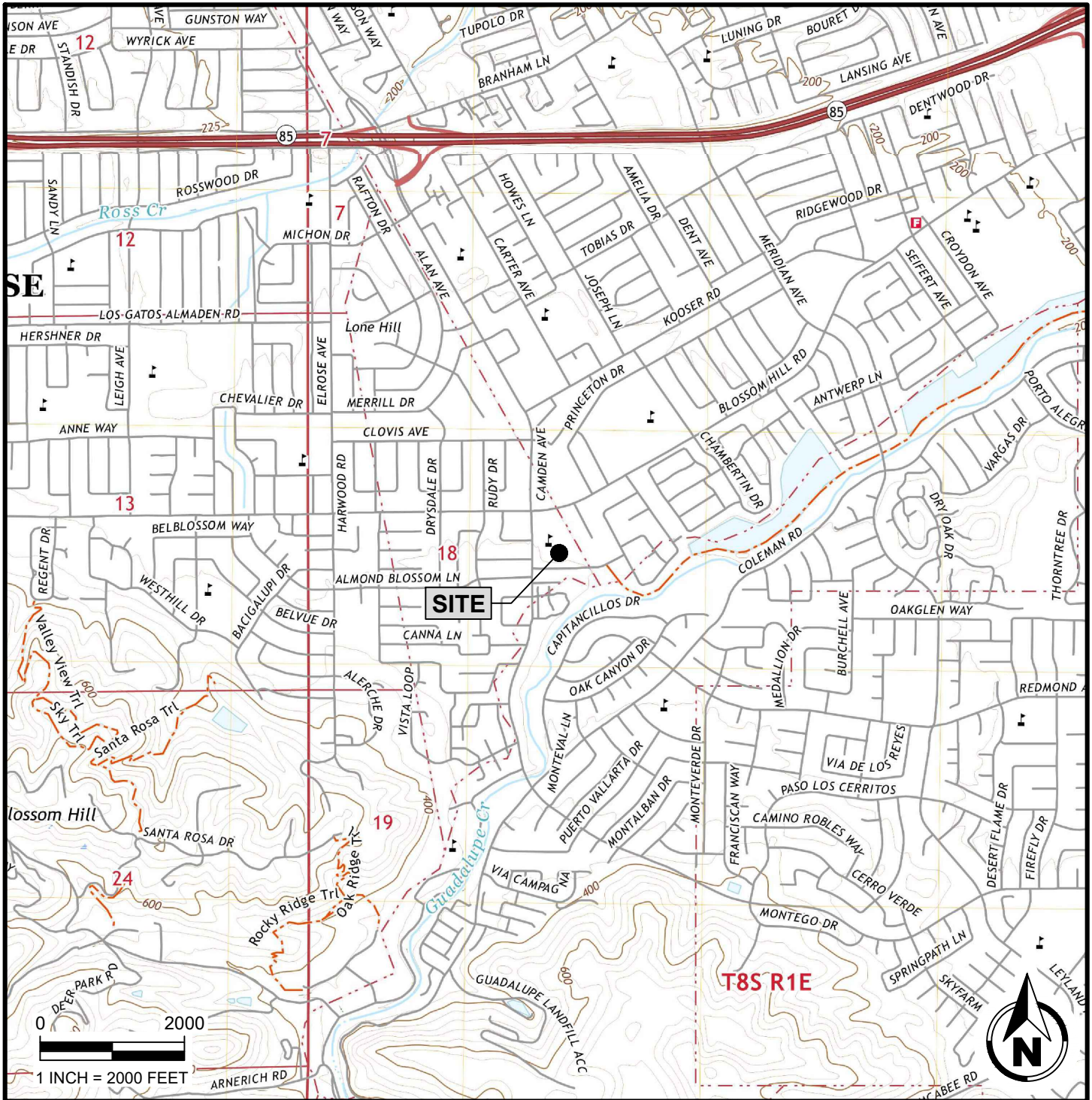
Appendix D – CERCO Analytical Corrosion Test Results

E://1-BGG/G367-Camden Ave/Report/GI G367 Manna Camden.docx

DRAWN BY: SPR

DATE: 08/28/2023

BGG NUMBER: G367.01



BASE: PORTION OF U.S.G.S. 7.5 MINUTE TOPOGRAPHIC QUADRANGLE, SAN JOSE WEST, CALIFORNIA, PHOTOREVISED 2021, AT A SCALE OF 1:24,000.

# VICINITY MAP

## CAMDEN AVENUE TOWNHOMES




5670 CAMDEN AVENUE  
 SAN JOSE, CALIFORNIA  
 FOR  
 MANA CAMDEN FUND, LLC





BASE: GOOGLE EARTH IMAGE 5/13/2023 AND DRAWINGS FROM HANNA-BRUNETTI DETAILS



- EXPLANATION:**
- B4  APPROXIMATE BORING LOCATION
  - BP5  PERCOLATION TEST LOCATION
  - TP3  APPROXIMATE TEST PIT LOCATION

# SITE PLAN

## CAMDEN AVENUE TOWNHOMES

5670 CAMDEN AVENUE  
 SAN JOSE, CALIFORNIA  
 FOR  
 MANA CAMDEN FUND, LLC

## **APPENDIX A**

### Boring Logs

# BORING NUMBER: B1

PROJECT NAME: Camden Avenue Townhomes  
 PROJECT NUMBER: G367.01  
 DATE DRILLED: 08/15/2023  
 DRILLING CONTRACTOR: Exploration Geoservices  
 DRILLING METHOD: Mobile Drill 53R with Hollow Stem Auger  
 LOGGED BY: KR  
 NOTES: Elevation from Site Plan by Hanna-Brunetti 6/27/23

PROJECT LOCATION: 5670 Camden Avenue, San Jose  
 CLIENT: Mana Camden Fund, LLC  
 GROUND ELEVATION: 278 feet above mean sea level (MSL)  
 GROUNDWATER ELEVATION: Not Encountered

**SAMPLER TYPE:**



Modified California Sampler



Standard Penetration Test

USCS	MATERIAL DESCRIPTION	ELEVATION (feet)	DEPTH (feet)	SAMPLER	BLOW COUNT (blows/foot)	DRY UNIT WEIGHT (pcf)	MOISTURE CONTENT (%)	PLASTICITY INDEX	FINES CONTENT % PASSING #200
SC/GP	CLAYEY SAND with GRAVEL to SANDY GRAVEL with CLAY, tan with mottled dark and medium brown, moist, dense, fine- to coarse-grained sand, subrounded gravel up to 1-inch size	278	0		42				
GP/GC	SANDY GRAVEL with CLAY and SILT to CLAYEY GRAVEL with SAND and SILT, tan to medium brown with light tan mottling, moist, very dense, subrounded gravel up to 1½-inch size	273	5		47				
	Bottom of Boring at 10 feet bgs. Groundwater was not encountered.	268	10		55				
		263	15						
		258	20						

# BORING NUMBER: B2

PROJECT NAME: Camden Avenue Townhomes  
 PROJECT NUMBER: G367.01  
 DATE DRILLED: 08/15/2023  
 DRILLING CONTRACTOR: Exploration Geoservices  
 DRILLING METHOD: Mobile Drill 53R with Hollow Stem Auger  
 LOGGED BY: KR  
 NOTES: Elevation from Site Plan by Hanna-Brunetti 6/27/23

PROJECT LOCATION: 5670 Camden Avenue, San Jose  
 CLIENT: Mana Camden Fund, LLC  
 GROUND ELEVATION: 275 feet MSL  
 GROUNDWATER ELEVATION: Not Encountered

**SAMPLER TYPE:**



Modified California Sampler



Standard Penetration Test

USCS	MATERIAL DESCRIPTION	ELEVATION (feet)	DEPTH (feet)	SAMPLER	BLOW COUNT (blows/foot)	DRY UNIT WEIGHT (pcf)	MOISTURE CONTENT (%)	PLASTICITY INDEX	FINES CONTENT % PASSING #200
SC/GP	CLAYEY SAND with GRAVEL to SANDY GRAVEL with CLAY, tan with mottled dark and medium brown, very moist to wet, loose to medium dense, fine- to coarse-grained sand, subrounded gravel up to 1-inch size [FILL]  at 2½ feet, 2-inch-diameter irrigation line encountered	275	0						
					10				
GP/GC	SANDY GRAVEL with CLAY and SILT to CLAYEY GRAVEL with SAND and SILT, tan to medium brown with light tan mottling, slightly moist to moist, medium dense to very dense, subrounded gravel up to 1½-inch size  (61% gravel, 31% sand, 8% silt/clay fines)	270	5		27				
					52			11	8
		265	10		67				
	Bottom of Boring at 11 feet bgs. Groundwater was not encountered.								
		260	15						
		255	20						

# BORING NUMBER: B3

**PROJECT NAME:** Camden Avenue Townhomes  
**PROJECT NUMBER:** G367.01  
**DATE DRILLED:** 08/15/2023  
**DRILLING CONTRACTOR:** Exploration Geoservices  
**DRILLING METHOD:** Mobile Drill 53R with Hollow Stem Auger  
**LOGGED BY:** KR  
**NOTES:** Elevation from Site Plan by Hanna-Brunetti 6/27/23

**PROJECT LOCATION:** 5670 Camden Avenue, San Jose  
**CLIENT:** Mana Camden Fund, LLC  
**GROUND ELEVATION:** 272 feet MSL  
**GROUNDWATER ELEVATION:** Not Encountered

**SAMPLER TYPE:**



Modified California Sampler



Standard Penetration Test

USCS	MATERIAL DESCRIPTION	ELEVATION (feet)	DEPTH (feet)	SAMPLER	BLOW COUNT (blows/foot)	DRY UNIT WEIGHT (pcf)	MOISTURE CONTENT (%)	PLASTICITY INDEX	FINES CONTENT % PASSING #200
SC/GC	CLAYEY SAND with GRAVEL to CLAYEY GRAVEL with SAND and SILT, tan to medium brown, dry to slightly moist, dense, subrounded gravel up to 1½-inch size	272	0						
GP/GC	SANDY GRAVEL with CLAY and SILT to CLAYEY GRAVEL with SAND and SILT, tan to medium brown with light tan mottling, slightly moist to moist, medium dense to very dense, subrounded gravel up to 1½-inch size	267	5		36				
	(c = 1,161 psf peak and 1,100 40 psf residual) (φ = 25 degrees peak, φ = 24 degrees residual)				48	116	4.8		
		262	10		65				
	from 15 to 15½ feet, very moist to moist (34% gravel, 48% sand, 18% silt/clay fines)	257	15		49				18
		252	20						

Boring met practical refusal at 20 feet bgs. Groundwater was not encountered.

# BORING NUMBER: B4

PROJECT NAME: Camden Avenue Townhomes  
 PROJECT NUMBER: G367.01  
 DATE DRILLED: 08/15/2023  
 DRILLING CONTRACTOR: Exploration Geoservices  
 DRILLING METHOD: Mobile Drill 53R with Hollow Stem Auger  
 LOGGED BY: KR  
 NOTES: Elevation from Site Plan by Hanna-Brunetti 6/27/23

PROJECT LOCATION: 5670 Camden Avenue, San Jose  
 CLIENT: Mana Camden Fund, LLC  
 GROUND ELEVATION: 271 feet MSL  
 GROUNDWATER ELEVATION: Not Encountered

**SAMPLER TYPE:**



Modified California Sampler



Standard Penetration Test

USCS	MATERIAL DESCRIPTION	ELEVATION (feet)	DEPTH (feet)	SAMPLER	BLOW COUNT (blows/foot)	DRY UNIT WEIGHT (pcf)	MOISTURE CONTENT (%)	PLASTICITY INDEX	FINES CONTENT % PASSING #200
SC/GC	CLAYEY SAND with GRAVEL to CLAYEY GRAVEL with SAND and SILT, tan to medium brown, dry to slightly moist, dense	271	0						
GP/GC	SANDY GRAVEL with CLAY to CLAYEY GRAVEL with SAND, tan to medium brown with light tan mottling, slightly moist to moist, medium dense to very dense, subrounded gravel up to 1½-inch size	266	5						
		261	10						
		256	15						
		251	20						

# BORING NUMBER: B4

PROJECT NAME: Camden Avenue Townhomes  
 PROJECT NUMBER: G367.01  
 DATE DRILLED: 08/15/2023  
 DRILLING CONTRACTOR: Exploration Geoservices  
 DRILLING METHOD: Mobile Drill 53R with Hollow Stem Auger  
 LOGGED BY: KR  
 NOTES: Elevation from Site Plan by Hanna-Brunetti 6/27/23

PROJECT LOCATION: 5670 Camden Avenue, San Jose  
 CLIENT: Mana Camden Fund, LLC  
 GROUND ELEVATION: 271 feet MSL  
 GROUNDWATER ELEVATION: Not Encountered

**SAMPLER TYPE:**



USCS	MATERIAL DESCRIPTION	ELEVATION	DEPTH	SAMPLER	BLOW COUNT (blows/foot)	DRY UNIT WEIGHT (pcf)	MOISTURE CONTENT (%)	PLASTICITY INDEX	FINES CONTENT % PASSING #200
		(feet)	(feet)						
SM	SANDY GRAVEL with CLAY to CLAYEY GRAVEL with SAND, tan to medium brown with dark brown mottling, slightly moist to moist, medium dense to very dense (49% gravel, 39% sand, 12% silt/clay fines)	251	20		54				12
	Boring met practical refusal at 21½ feet bgs. Groundwater was not encountered.								
		246	25						
		241	30						
		236	35						
		231	40						

# BORING NUMBER: BP1

PROJECT NAME: Camden Avenue Townhomes  
 PROJECT NUMBER: G367.01  
 DATE DRILLED: 08/15/2023  
 DRILLING CONTRACTOR: Exploration Geoservices  
 DRILLING METHOD: Mobile Drill 53R with Hollow Stem Auger  
 LOGGED BY: KR  
 NOTES: Elevation from Site Plan by Hanna-Brunetti 6/27/23

PROJECT LOCATION: 5670 Camden Avenue, San Jose  
 CLIENT: Mana Camden Fund, LLC  
 GROUND ELEVATION: 277 feet MSL  
 GROUNDWATER ELEVATION: Not Encountered

**SAMPLER TYPE:**



Modified California Sampler



Standard Penetration Test

USCS	MATERIAL DESCRIPTION	ELEVATION (feet)	DEPTH (feet)	SAMPLER	BLOW COUNT (blows/foot)	DRY UNIT WEIGHT (pcf)	MOISTURE CONTENT (%)	PLASTICITY INDEX	FINES CONTENT % PASSING #200
SC/GP	CLAYEY SAND with GRAVEL to SANDY GRAVEL with CLAY, tan with mottled dark and medium brown, moist, dense, fine- to coarse-grained sand, subrounded gravel up to 1-inch size	277	0						
	Bottom of Boring at 2 feet bgs. Groundwater was not encountered.	272	5						
		267	10						
		262	15						
		257	20						

# BORING NUMBER: BP2

PROJECT NAME: Camden Avenue Townhomes  
 PROJECT NUMBER: G367.01  
 DATE DRILLED: 08/15/2023  
 DRILLING CONTRACTOR: Exploration Geoservices  
 DRILLING METHOD: Mobile Drill 53R with Hollow Stem Auger  
 LOGGED BY: KR  
 NOTES: Elevation from Site Plan by Hanna-Brunetti 6/27/23

PROJECT LOCATION: 5670 Camden Avenue, San Jose  
 CLIENT: Mana Camden Fund, LLC  
 GROUND ELEVATION: 274 feet MSL  
 GROUNDWATER ELEVATION: Not Encountered

**SAMPLER TYPE:**



Modified California Sampler



Standard Penetration Test

USCS	MATERIAL DESCRIPTION	ELEVATION	DEPTH	SAMPLER	BLOW COUNT (blows/foot)	DRY UNIT WEIGHT (pcf)	MOISTURE CONTENT (%)	PLASTICITY INDEX	FINES CONTENT % PASSING #200
		(feet)	(feet)						
SC/ GP	CLAYEY SAND with GRAVEL to SANDY GRAVEL with CLAY, tan with mottled dark and medium brown, moist, dense, fine- to coarse-grained sand, subrounded gravel up to 1-inch size	274	0						
GP/ GC	SANDY GRAVEL with CLAY and SILT to CLAYEY GRAVEL with SAND and SILT, tan to medium brown with light tan mottling, moist, very dense, subrounded gravel up to 1½-inch size	269	5						
	Bottom of Boring at 5 feet bgs. Groundwater was not encountered.	264	10						
		259	15						
		254	20						

# BORING NUMBER: BP3

PROJECT NAME: Camden Avenue Townhomes  
 PROJECT NUMBER: G367.01  
 DATE DRILLED: 08/15/2023  
 DRILLING CONTRACTOR: Exploration Geoservices  
 DRILLING METHOD: Mobile Drill 53R with Hollow Stem Auger  
 LOGGED BY: KR  
 NOTES: Elevation from Site Plan by Hanna-Brunetti 6/27/23

PROJECT LOCATION: 5670 Camden Avenue, San Jose  
 CLIENT: Mana Camden Fund, LLC  
 GROUND ELEVATION: 273 feet MSL  
 GROUNDWATER ELEVATION: Not Encountered

**SAMPLER TYPE:**



Modified California Sampler



Standard Penetration Test

USCS	MATERIAL DESCRIPTION	ELEVATION	DEPTH	SAMPLER	BLOW COUNT (blows/foot)	DRY UNIT WEIGHT (pcf)	MOISTURE CONTENT (%)	PLASTICITY INDEX	FINES CONTENT % PASSING #200
		(feet)	(feet)						
SC/ GP	CLAYEY SAND with GRAVEL to SANDY GRAVEL with CLAY, tan with mottled dark and medium brown, moist, dense, fine- to coarse-grained sand, subrounded gravel up to 1-inch size	273	0						
GP/ GC	SANDY GRAVEL with CLAY and SILT to CLAYEY GRAVEL with SAND and SILT, tan to medium brown with light tan mottling, moist, very dense, subrounded gravel up to 1½-inch size	268	5						
	Bottom of Boring at 5 feet bgs. Groundwater was not encountered.	263	10						
		258	15						
		253	20						

# BORING NUMBER: BP4

PROJECT NAME: Camden Avenue Townhomes  
 PROJECT NUMBER: G367.01  
 DATE DRILLED: 08/15/2023  
 DRILLING CONTRACTOR: Exploration Geoservices  
 DRILLING METHOD: Mobile Drill 53R with Hollow Stem Auger  
 LOGGED BY: KR  
 NOTES: Elevation from Site Plan by Hanna-Brunetti 6/27/23

PROJECT LOCATION: 5670 Camden Avenue, San Jose  
 CLIENT: Mana Camden Fund, LLC  
 GROUND ELEVATION: 276 feet MSL  
 GROUNDWATER ELEVATION: Not Encountered

**SAMPLER TYPE:**



Modified California Sampler



Standard Penetration Test

USCS	MATERIAL DESCRIPTION	ELEVATION (feet)	DEPTH (feet)	SAMPLER	BLOW COUNT (blows/foot)	DRY UNIT WEIGHT (pcf)	MOISTURE CONTENT (%)	PLASTICITY INDEX	FINES CONTENT % PASSING #200
SC/GP	CLAYEY SAND with GRAVEL to SANDY GRAVEL with CLAY, tan with mottled dark and medium brown, moist, dense, fine- to coarse-grained sand, subrounded gravel up to 1-inch size	276	0						
GP/GC	SANDY GRAVEL with CLAY and SILT to CLAYEY GRAVEL with SAND and SILT, tan to medium brown with light tan mottling, moist, very dense, subrounded gravel up to 1½-inch size	271	5						
	Bottom of Boring at 5 feet bgs. Groundwater was not encountered.	266	10						
		261	15						
		256	20						

# BORING NUMBER: BP5

PROJECT NAME: Camden Avenue Townhomes  
 PROJECT NUMBER: G367.01  
 DATE DRILLED: 08/15/2023  
 DRILLING CONTRACTOR: Exploration Geoservices  
 DRILLING METHOD: Mobile Drill 53R with Hollow Stem Auger  
 LOGGED BY: KR  
 NOTES: Elevation from Site Plan by Hanna-Brunetti 6/27/23

PROJECT LOCATION: 5670 Camden Avenue, San Jose  
 CLIENT: Mana Camden Fund, LLC  
 GROUND ELEVATION: 276 feet MSL  
 GROUNDWATER ELEVATION: Not Encountered

**SAMPLER TYPE:**



Modified California Sampler



Standard Penetration Test

USCS	MATERIAL DESCRIPTION	ELEVATION (feet)	DEPTH (feet)	SAMPLER	BLOW COUNT (blows/foot)	DRY UNIT WEIGHT (pcf)	MOISTURE CONTENT (%)	PLASTICITY INDEX	FINES CONTENT % PASSING #200
SC/GP	CLAYEY SAND with GRAVEL to SANDY GRAVEL with CLAY, tan with mottled dark and medium brown, moist, dense, fine- to coarse-grained sand, subrounded gravel up to 1-inch size	276	0						
	Bottom of Boring at 2 feet bgs. Groundwater was not encountered.	271	5						
		266	10						
		261	15						
		256	20						

## **APPENDIX B**

Test Pit Logs

# TEST PIT NUMBER: TP1

**PROJECT NAME:** Camden Avenue Townhomes  
**PROJECT NUMBER:** G367.01  
**DATE EXCAVATED:** 08/15/2023  
**EXCAVATION CONTRACTOR:** Lion River Construction  
**EXCAVATION METHOD:** CAT 303.5E2  
**LOGGED BY:** KR  
**NOTES:** Elevation from Site Plan by Hanna-Brunetti 6/27/23

**PROJECT LOCATION:** 5670 Camden Avenue, San Jose  
**CLIENT:** Mana Camden Fund, LLC  
**GROUND ELEVATION:** 275 feet above mean sea level (MSL)  
**GROUNDWATER:** Groundwater not encountered


**SAMPLER TYPE:**



Bulk Sample



Modified California Sampler

USCS	MATERIAL DESCRIPTION	ELEVATION (feet)	DEPTH (feet)	SAMPLER	BLOW COUNT (blows/foot)	DRY UNIT WEIGHT (pcf)	MOISTURE CONTENT (%)	PLASTICITY INDEX	FINES CONTENT % PASSING #200
SC/GP	CLAYEY SAND with GRAVEL to SANDY GRAVEL with CLAY, tan with mottled dark and medium brown, moist, medium dense to dense, fine- to coarse-grained sand, subrounded gravel up to 2-inch size	275	0						
GP/GC	SANDY GRAVEL with CLAY to CLAYEY GRAVEL with SAND, tan to medium brown with dark brown mottling, moist, dense, rounded cobbles up to 12-inch size  (53% gravel and cobbles, 33% sand, 14% silt/clay fines)  (Sample remolded to 90% relative compaction: consolidated 0.2% upon loading to 1,500 psf and an additional 0.2% after saturation)  (Sample remolded to 90% relative compaction: c = 286 psf peak, c = 140 psf residual, $\phi$ = 29 degrees peak, $\phi$ = 30 degrees residual)	270	5					8	14
	Bottom of Test Pit at 5 feet below ground surface (bgs). Groundwater was not encountered.								
		265	10						
		260	15						

# TEST PIT NUMBER: TP2

**PROJECT NAME:** Camden Avenue Townhomes  
**PROJECT NUMBER:** G367.01  
**DATE EXCAVATED:** 08/15/2023  
**EXCAVATION CONTRACTOR:** Lion River Construction  
**EXCAVATION METHOD:** CAT 303.5E2  
**LOGGED BY:** KR  
**NOTES:** Elevation from Site Plan by Hanna-Brunetti 6/27/23

**PROJECT LOCATION:** 5670 Camden Avenue, San Jose  
**CLIENT:** Mana Camden Fund, LLC  
**GROUND ELEVATION:** 271 feet MSL  
**GROUNDWATER:** Groundwater not encountered


**SAMPLER TYPE:**



Bulk Sample



Modified California Sampler

USCS	MATERIAL DESCRIPTION	ELEVATION (feet)	DEPTH (feet)	SAMPLER	BLOW COUNT (blows/foot)	DRY UNIT WEIGHT (pcf)	MOISTURE CONTENT (%)	PLASTICITY INDEX	FINES CONTENT % PASSING #200
SC/GC	CLAYEY SAND with GRAVEL to CLAYEY GRAVEL with SAND and SILT, tan to medium brown, dry to slightly moist, medium dense, angular gravel up to 1-inch size [FILL]	271	0						
GP/GC	SANDY GRAVEL with CLAY to CLAYEY GRAVEL with SAND, tan to medium brown with dark brown mottling, moist, dense, rounded cobbles up to 12-inch size	266	5						
	Bottom of Test Pit at 7 feet bgs. Groundwater was not encountered.	261	10						
		256	15						

# TEST PIT NUMBER: TP3

**PROJECT NAME:** Camden Avenue Townhomes  
**PROJECT NUMBER:** G367.01  
**DATE EXCAVATED:** 08/15/2023  
**EXCAVATION CONTRACTOR:** Lion River Construction  
**EXCAVATION METHOD:** CAT 303.5E2  
**LOGGED BY:** KR  
**NOTES:** Elevation from Site Plan by Hanna-Brunetti 6/27/23

**PROJECT LOCATION:** 5670 Camden Avenue, San Jose  
**CLIENT:** Mana Camden Fund, LLC  
**GROUND ELEVATION:** 272 feet MSL  
**GROUNDWATER:** Groundwater not encountered


**SAMPLER TYPE:**



Bulk Sample



Modified California Sampler

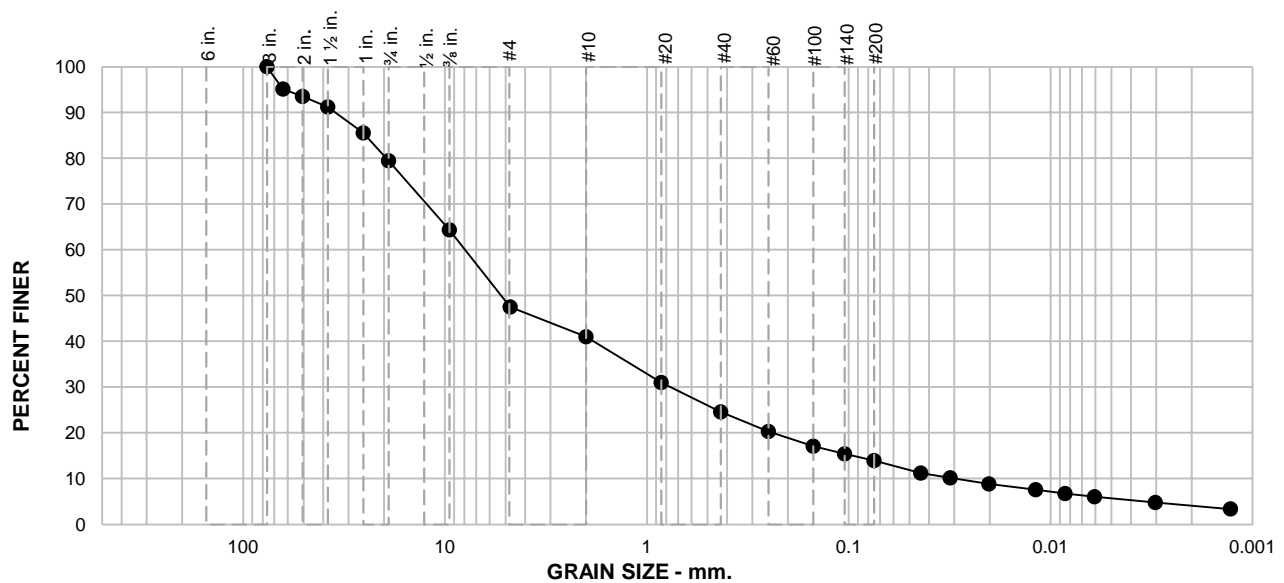
USCS	MATERIAL DESCRIPTION	ELEVATION (feet)	DEPTH (feet)	SAMPLER	BLOW COUNT (blows/foot)	DRY UNIT WEIGHT (pcf)	MOISTURE CONTENT (%)	PLASTICITY INDEX	FINES CONTENT % PASSING #200
GP/GC	<p>SANDY GRAVEL with CLAY to CLAYEY GRAVEL with SAND, tan to medium brown with dark brown mottling, slightly moist to moist, dense, rounded cobbles up to 12-inch size</p> <p>Below 2 feet, moist</p>	272	0						
	<p>Bottom of Test Pit at 5 feet bgs. Groundwater was not encountered.</p>	267	5						
		262	10						
		257	15						

## **APPENDIX C**

### Geotechnical Laboratory Test Results

# PARTICLE SIZE DISTRIBUTION REPORT

## ASTM D422



**SAMPLE ID:** TP1@1-5

**DEPTH (ft):** 1-5

% +75mm	% GRAVEL		% SAND			% FINES	
	COARSE	FINE	COARSE	MEDIUM	FINE	SILT	CLAY
	20.5	32.0	6.5	16.4	10.6	9.9	4.1

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)	SOIL DESCRIPTION
				See exploration logs
3 in.	100.0			
2.5 in.	95.1			
2 in.	93.5			
1-½ in.	91.2			
1 in.	85.5			
¾ in.	79.5			
½ in.	64.3			
#4	47.5			
#10	41.0			
#20	31.0			
#40	24.6			
#60	20.3			
#100	17.1			
#140	15.4			
#200	14.0			
0.0439 mm.	11.2			
0.0315 mm.	10.2			
0.0203 mm.	8.9			
0.0119 mm.	7.6			
0.0085 mm.	6.8			
0.0061 mm.	6.0			
0.0030 mm.	4.8			

ATTERBERG LIMITS		
PL = 18	LL = 26	PI = 8

COEFFICIENTS		
D <sub>90</sub> = 34.9827 mm	D <sub>85</sub> = 24.7983 mm	D <sub>60</sub> = 7.9712 mm
D <sub>50</sub> = 5.2682 mm	D <sub>30</sub> = 0.7641 mm	D <sub>15</sub> = 0.0954 mm
D <sub>10</sub> = 0.0294 mm	C <sub>u</sub> = 270.81	C <sub>c</sub> = 2.49

CLASSIFICATION	
USCS = GC	

REMARKS	
Silt/clay division of 0.002mm used PI: ASTM D4318, Wet Method USCS: ASTM D2487	

\* (no specification provided)

**CLIENT:** Baez Geotechnical Group, Inc.



**PROJECT NAME:** G367.01 - Camden

**PROJECT NO:** 14368.000.215 PHLAB

**PROJECT LOCATION:** San Jose, CA

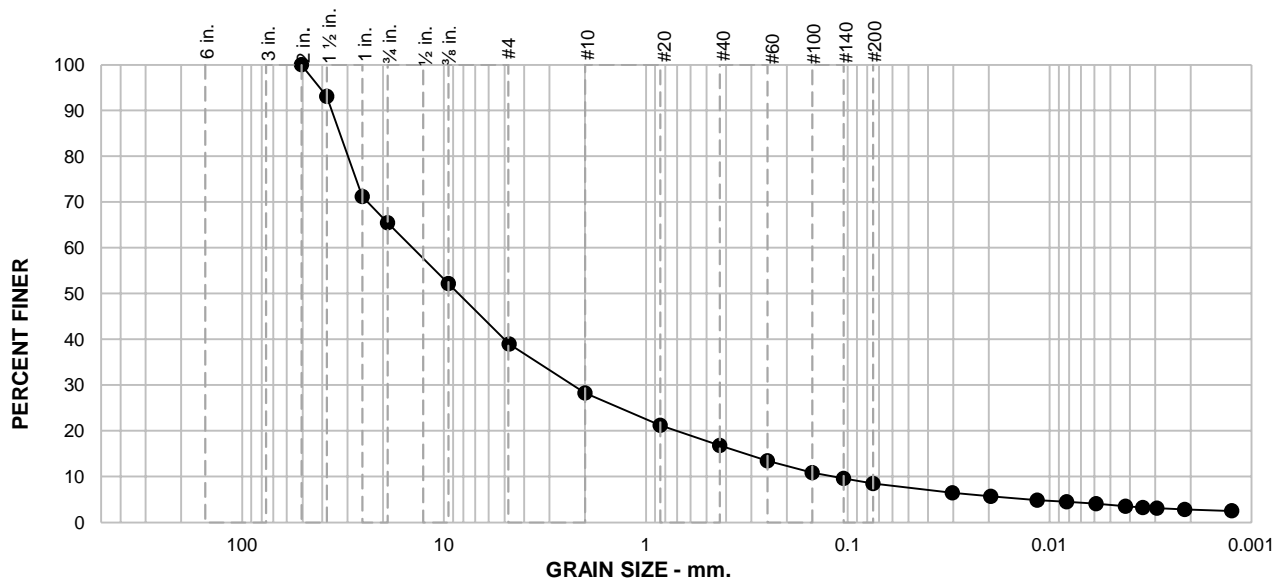
**REPORT DATE:** 9/1/2023

**TESTED BY:** L. Schmitz

**REVIEWED BY:** N. Broussard

# PARTICLE SIZE DISTRIBUTION REPORT

## ASTM D422



**SAMPLE ID:** B2@7.5-8.5

**DEPTH (ft):** 7.5-8.5

**LOCATION:** B2

% +75mm	% GRAVEL		% SAND			% FINES	
	COARSE	FINE	COARSE	MEDIUM	FINE	SILT	CLAY
	35	26	11	11	9	5.0	3.0

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)	SOIL DESCRIPTION
				See exploration logs
2 in.	100			
1.5 in.	93			
1 in.	71			
0.75 in.	65			
0.38 in.	52			
#4	39			
#10	28			
#20	21			
#40	17			
#60	13			
#100	11			
#140	10			
#200	8			
0.0303 mm.	6.5			
0.0196 mm.	5.7			
0.0115 mm.	4.9			
0.0082 mm.	4.5			
0.0059 mm.	4.1			
0.0042 mm.	3.5			
0.0035 mm.	3.3			
0.0029 mm.	3.1			
0.0021 mm.	2.8			

ATTERBERG LIMITS		
PL = 19	LL = 30	PI = 11

COEFFICIENTS		
D <sub>90</sub> = 36.0506 mm	D <sub>85</sub> = 32.8770 mm	D <sub>60</sub> = 14.5920 mm
D <sub>50</sub> = 8.5581 mm	D <sub>30</sub> = 2.3406 mm	D <sub>15</sub> = 0.3279 mm
D <sub>10</sub> = 0.1050 mm	C <sub>u</sub> = 138.97	C <sub>c</sub> = 3.58

CLASSIFICATION	
USCS = GP-GC	

REMARKS	
Silt/clay division of 0.002mm used	
PI: ASTM D4318, Wet Method	

\* (no specification provided)

**CLIENT:** Baez Geotechnical Group, Inc.



**PROJECT NAME:** G367.01 - Camden

**PROJECT NO:** 14368.000.215 PHLAB

**PROJECT LOCATION:** San Jose, CA

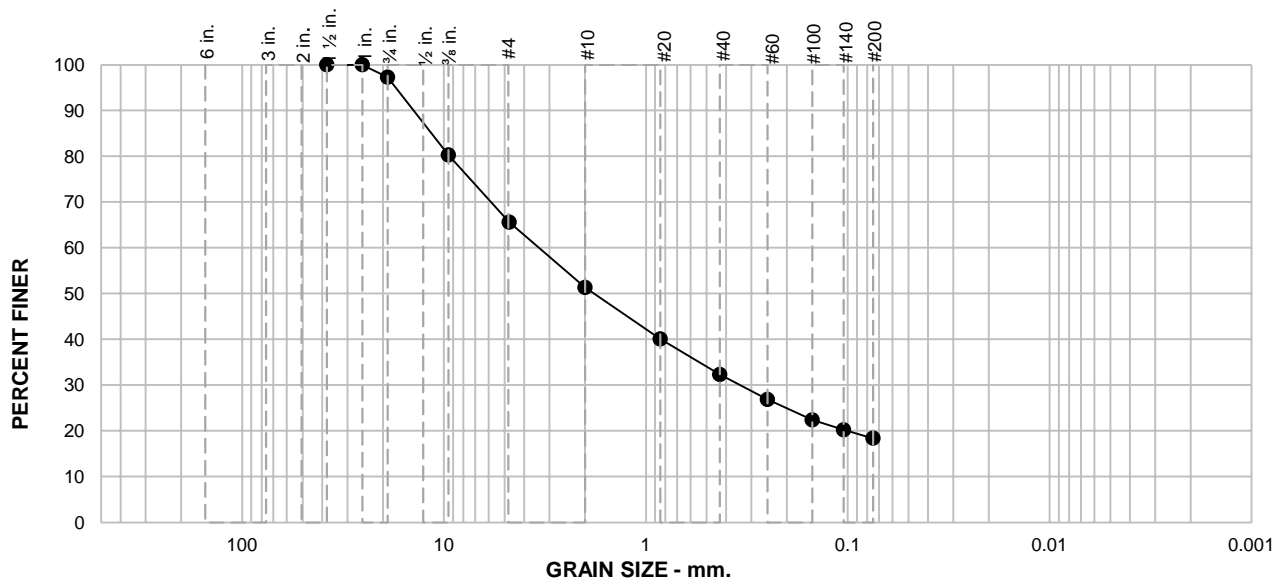
**REPORT DATE:** 8/24/2023

**TESTED BY:** K. Lecce

**REVIEWED BY:** J. Moriarty

# PARTICLE SIZE DISTRIBUTION REPORT

## ASTM D6913, Method B



**SAMPLE ID:** B3@15-16.5

**DEPTH (ft):** 15-16.5

**LOCATION:** B3

% +75mm	% GRAVEL		% SAND			% FINES	
	COARSE	FINE	COARSE	MEDIUM	FINE	SILT	CLAY
	3	31	15	19	14		18

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)	SOIL DESCRIPTION
1.5 in.	100			See exploration logs
1 in.	100			
0.75 in.	97			
0.38 in.	80			
#4	66			
#10	51			
#20	40			
#40	32			
#60	27			
#100	22			
#140	20			
#200	18			

ATTERBERG LIMITS		
PL =	LL =	PI =

COEFFICIENTS		
D <sub>90</sub> = 14.3199 mm	D <sub>85</sub> = 11.6789 mm	D <sub>60</sub> = 3.3607 mm
D <sub>50</sub> = 1.8503 mm	D <sub>30</sub> = 0.3461 mm	D <sub>15</sub> =
D <sub>10</sub> =	C <sub>u</sub> =	C <sub>c</sub> =

CLASSIFICATION
USCS =

REMARKS

\* (no specification provided)

**CLIENT:** Baez Geotechnical Group, Inc.



**PROJECT NAME:** G367.01 - Camden

**PROJECT NO:** 14368.000.215 PHLAB

**PROJECT LOCATION:** San Jose, CA

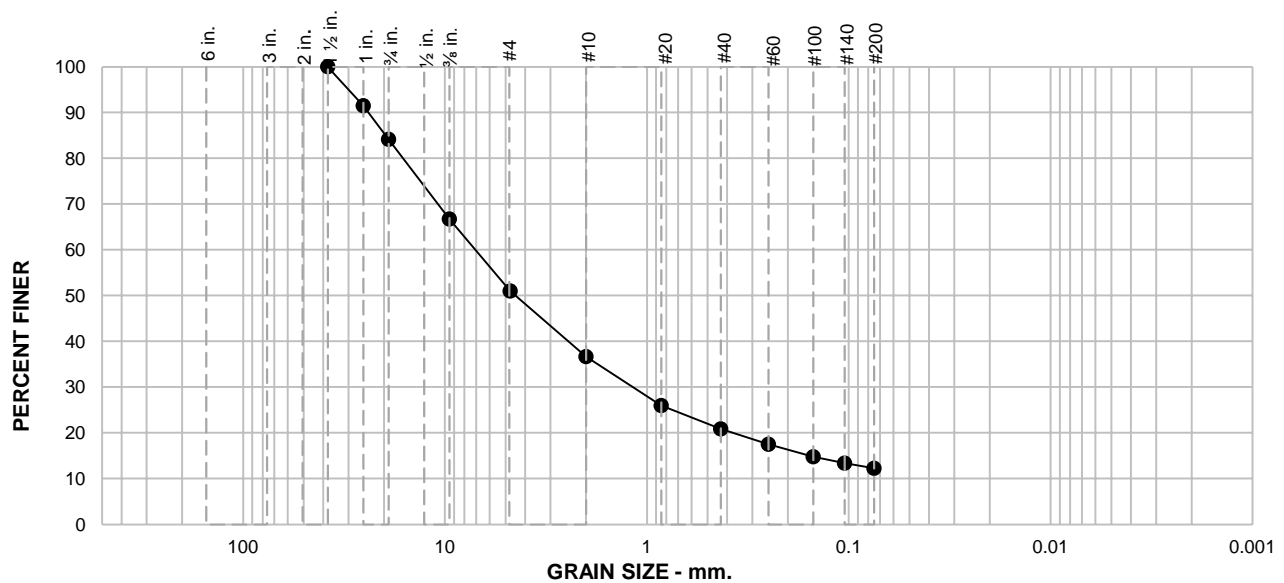
**REPORT DATE:** 8/24/2023

**TESTED BY:** K. Lecce

**REVIEWED BY:** J. Moriarty

# PARTICLE SIZE DISTRIBUTION REPORT

ASTM D6913, Method B



**SAMPLE ID:** B4@20-21.5

**DEPTH (ft):** 20-21.5

**LOCATION:** B4

% +75mm	% GRAVEL		% SAND			% FINES	
	COARSE	FINE	COARSE	MEDIUM	FINE	SILT	CLAY
	16	33	14	16	9	12	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)	SOIL DESCRIPTION
1.5 in.	100			See exploration logs
1 in.	91			
0.75 in.	84			
0.38 in.	67			
#4	51			
#10	37			
#20	26			
#40	21			
#60	18			
#100	15			
#140	13			
#200	12			

ATTERBERG LIMITS		
PL =	LL =	PI =

COEFFICIENTS		
D <sub>90</sub> = 24.3773 mm	D <sub>85</sub> = 19.8492 mm	D <sub>60</sub> = 7.0253 mm
D <sub>50</sub> = 4.4654 mm	D <sub>30</sub> = 1.1602 mm	D <sub>15</sub> = 0.1500 mm
D <sub>10</sub> =	C <sub>u</sub> =	C <sub>c</sub> =

CLASSIFICATION
USCS =

REMARKS

\* (no specification provided)

**CLIENT:** Baez Geotechnical Group, Inc.



**PROJECT NAME:** G367.01 - Camden

**PROJECT NO:** 14368.000.215 PHLAB

**PROJECT LOCATION:** San Jose, CA

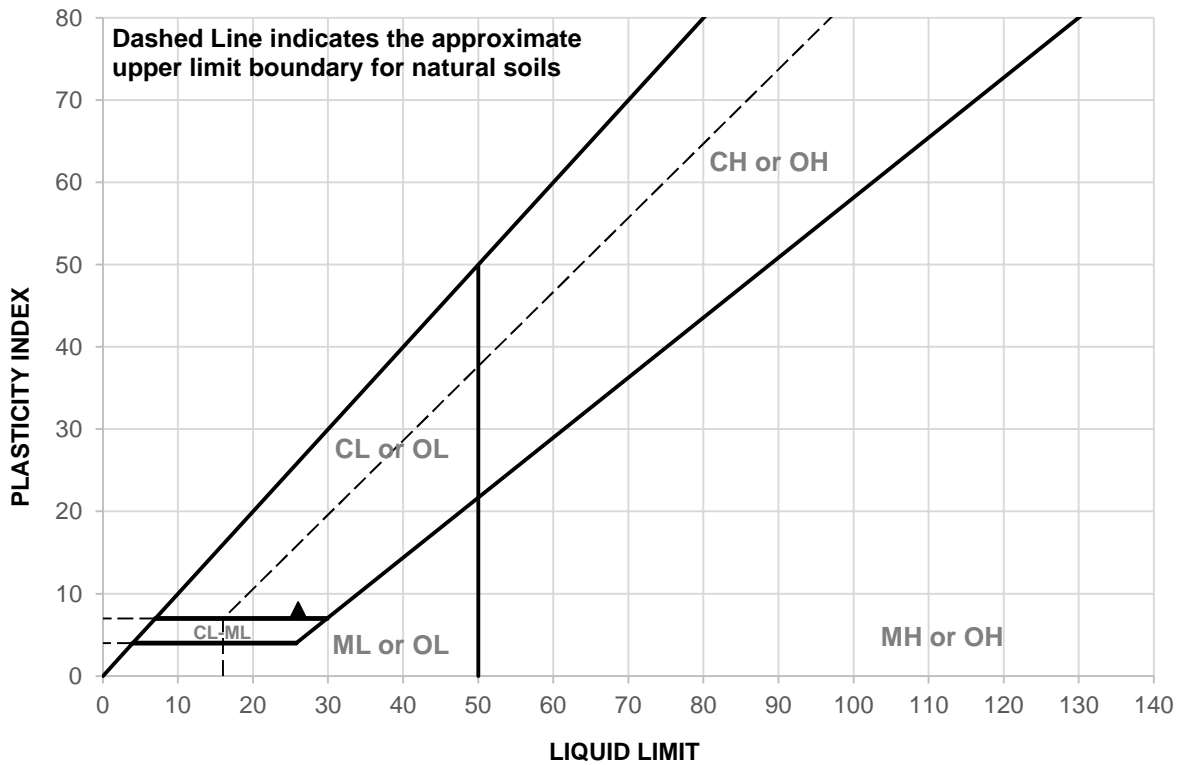
**REPORT DATE:** 8/24/2023

**TESTED BY:** K. Lecce

**REVIEWED BY:** J. Moriarty

# LIQUID AND PLASTIC LIMITS TEST REPORT

## ASTM D4318



SAMPLE ID	DEPTH (ft)	MATERIAL DESCRIPTION	LL	PL	PI
▲ TP1@1-5	1-5	See exploration logs	26	18	8

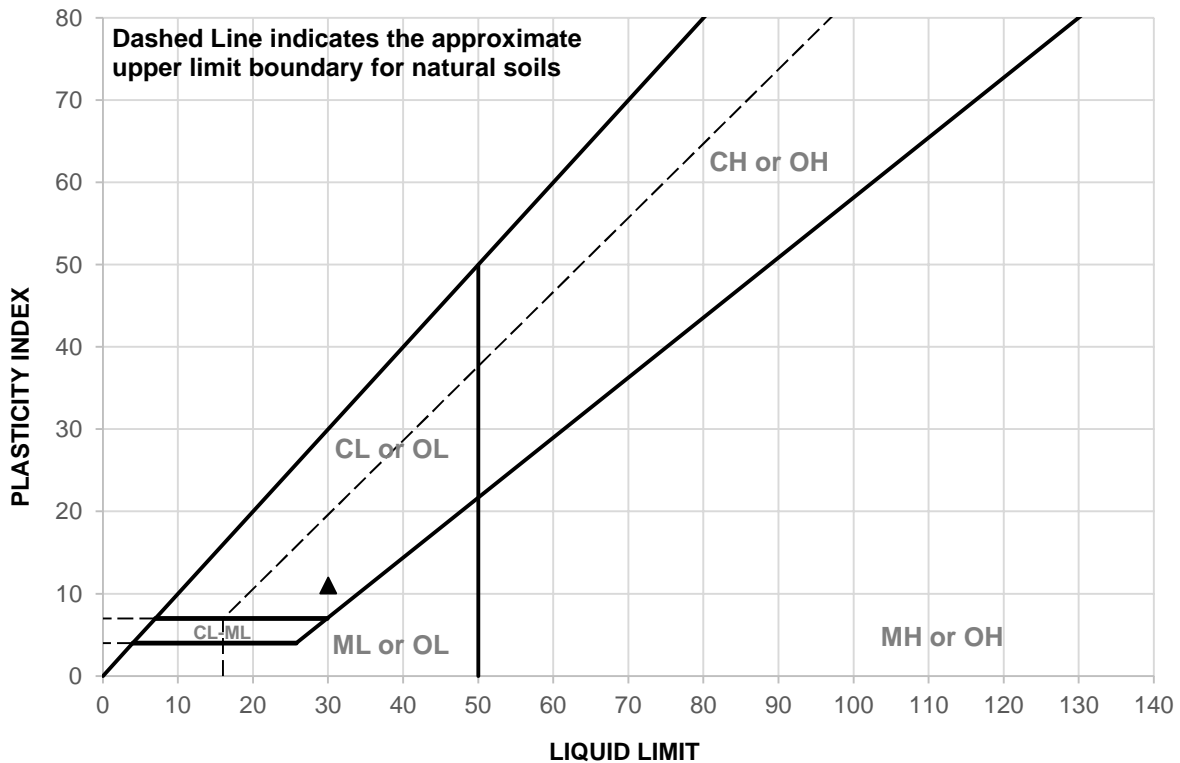
SAMPLE ID	TEST METHOD	REMARKS
▲ TP1@1-5	PI: ASTM D4318, Wet Method	



**CLIENT:** Baez Geotechnical Group, Inc.  
**PROJECT NAME:** G367.01 - Camden  
**PROJECT NO:** 14368.000.215 PHLAB  
**PROJECT LOCATION:** San Jose, CA  
**REPORT DATE:** 8/29/2023  
**TESTED BY:** L. Schmitz  
**REVIEWED BY:** M. Gilbert

# LIQUID AND PLASTIC LIMITS TEST REPORT

## ASTM D4318



	SAMPLE ID	DEPTH (ft)	MATERIAL DESCRIPTION	LL	PL	PI
▲	B2@7.5-8.5	7.5-8.5	See exploration logs	30	19	11

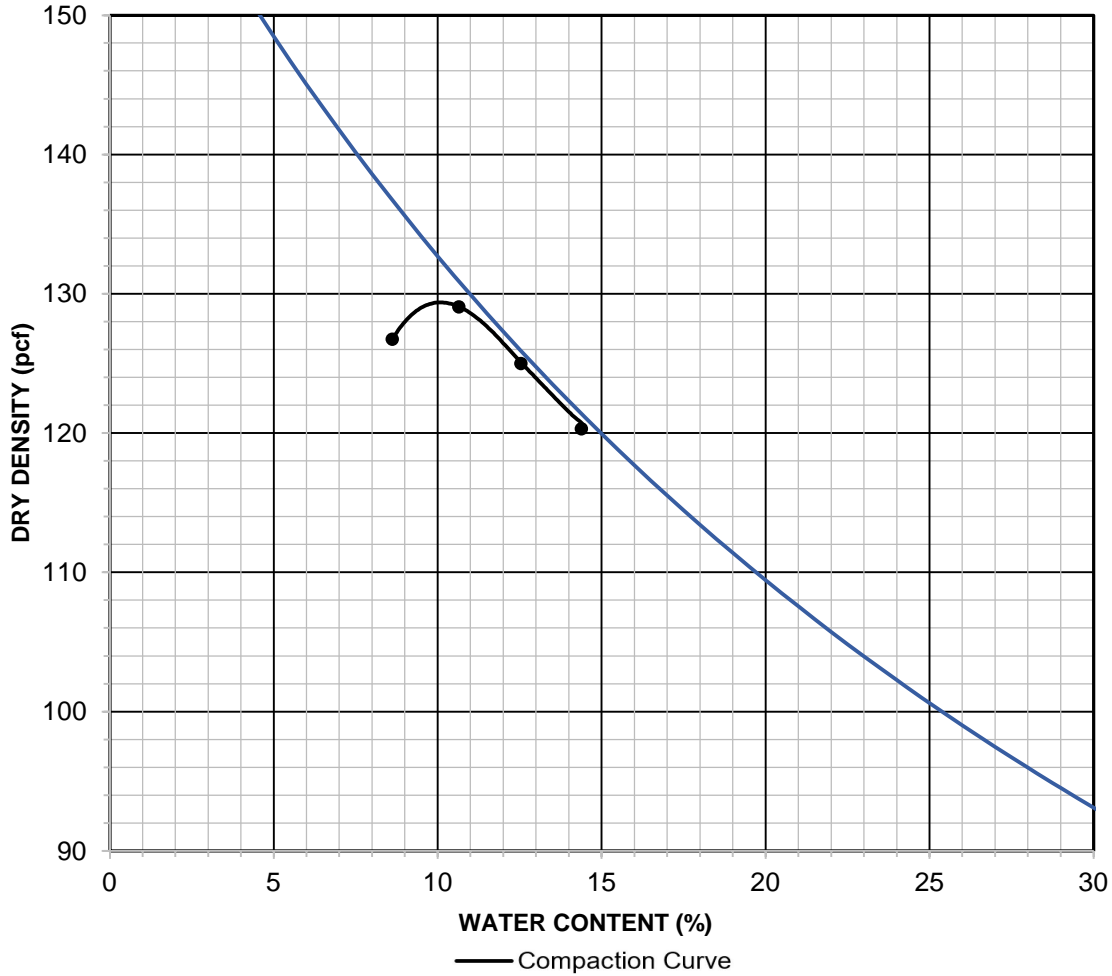
	SAMPLE ID	TEST METHOD	REMARKS
▲	B2@7.5-8.5	PI: ASTM D4318, Wet Method	



**CLIENT:** Baez Geotechnical Group, Inc  
**PROJECT NAME:** G367.01 - Camden  
**PROJECT NO:** 14368.000.213 PHLAB  
**PROJECT LOCATION:** San Jose, CA  
**REPORT DATE:** 8/24/2023  
**TESTED BY:** K. Lecce  
**REVIEWED BY:** J. Moriarty

# COMPACTION CURVE REPORT

## ASTM D1557



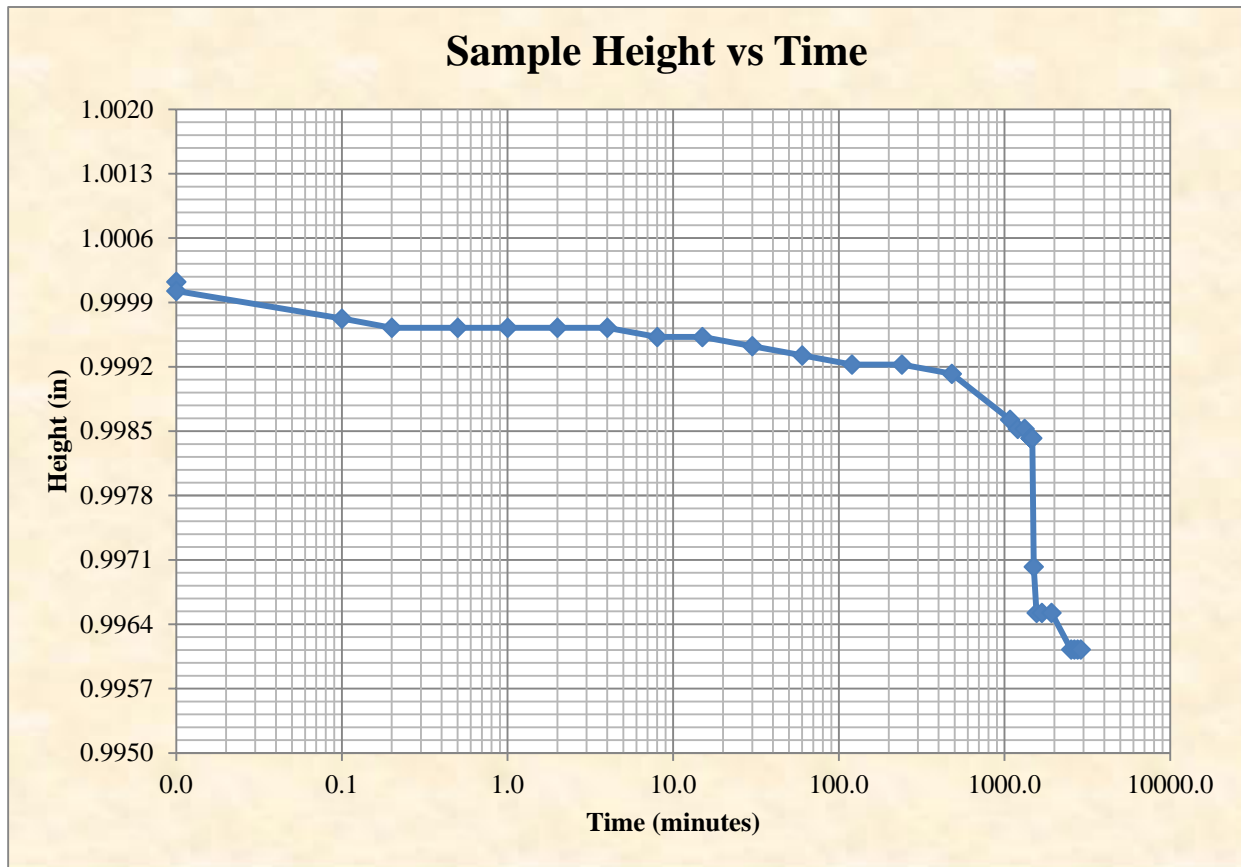
Curve Number: TP1@1-5  
 Test Specification: Method A  
 Sample Location: TP1 at 1 to 5 feet

RESULTS		MATERIAL DESCRIPTION
Maximum Dry Density, pcf	129.4	See exploration logs
Optimum Moisture Content, %	10.1	
Remarks		



**CLIENT:** Baez Geotechnical Group, Inc.  
**PROJECT NAME:** G367.01 - Camden  
**PROJECT NO:** 14368.000.215 PHLAB  
**PROJECT LOCATION:** San Jose, CA  
**REPORT DATE:** 8/28/2023  
**TESTED BY:** R. Montalvo  
**REVIEWED BY:** M. Gilbert

**ONE DIMENSIONAL SWELL/COLLAPSE POTENTIAL - METHOD 'C' Modified**  
**ASTM D4546**



**SAMPLE ID:** TP1@1-5  
**SAMPLE DESCRIPTION:** See exploration logs  
**TYPE OF WATER USED:** Distilled  
**TRANSPORTATION METHOD:** Insulated bucket  
**STORAGE ENVIRONMENT:** Controlled

**USCS:** n/a

**IN-SITU LOAD (psf):** 300  
**DESIGN LOAD (psf):** 1500  
**SOURCE OF WATER:** Distilled  
**SAMPLING DATE:** n/a  
**TEST START DATE:** 08/30/23

**Remolded? (Y/N):** Y  
**Number of lifts, if remolded:** 1  
**Specific Gravity, <#4 (Measured):** 2.748  
**Initial sample height (in):** 1.0001  
**Dry in-situ load height (in):** 1.0000  
**Dry design load height (in):** 0.9984  
**Wet design load height (in):** 0.9961  
**Initial sample mass (g):** 148.77  
**Final saturated sample mass (g):** 158.64  
**Initial-test dry density (pcf):** 116.72

**Initial % Saturation:** 55.98  
**Final % Saturation:** 99.98  
**Initial water content:** 9.57  
**Final water content:** 16.84  
**Post-test dry density (pcf):** 117.19

*Dry In-situ load % SWELL/COLLAPSE: -0.01*  
*Dry design load % SWELL/COLLAPSE: -0.16*  
*Wet design load % SWELL/COLLAPSE: -0.23*  
**Overall % SWELL/COLLAPSE: -0.40**

Testing remarks: As requested by client, an in-situ load was added and then a design load was added prior to saturation. Note, gravels larger #4 were removed and replaced with trimmings.

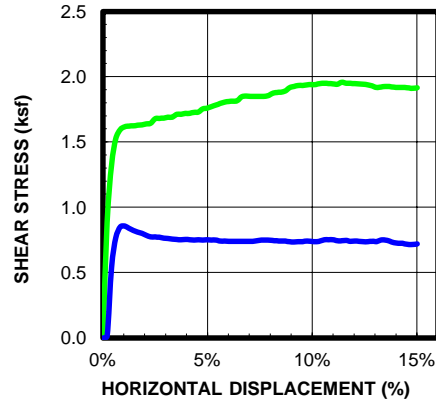
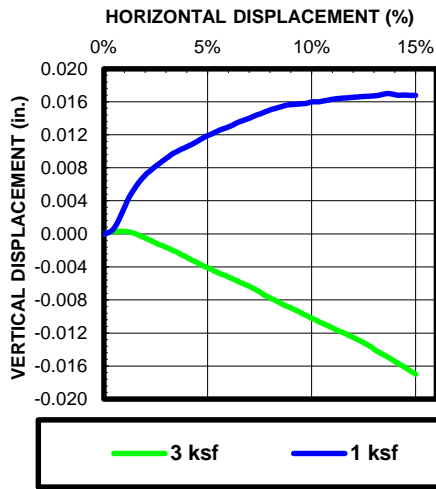
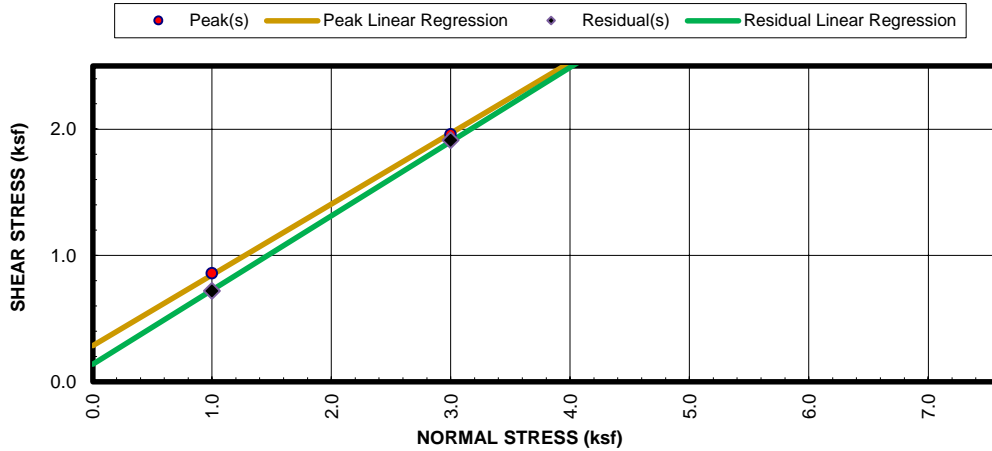
<b>PROJECT NAME:</b> G367.01 - Camden, San Jose, CA	<b>REPORT DATE:</b> 09/01/23
<b>PROJECT NUMBER:</b> 14368.000.215 PHLAB	
<b>CLIENT:</b> Baez Geotechnical Group, Inc.	
<b>PHASE NUMBER:</b> LAB	



Tested by: K. Lecce

Reviewed by: J. Moriarty

# CONSOLIDATED DRAINED DIRECT SHEAR ASTM D3080



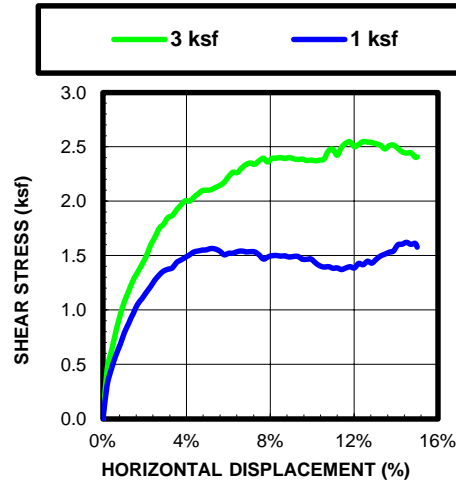
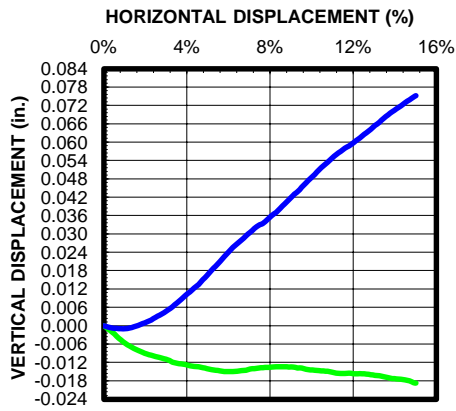
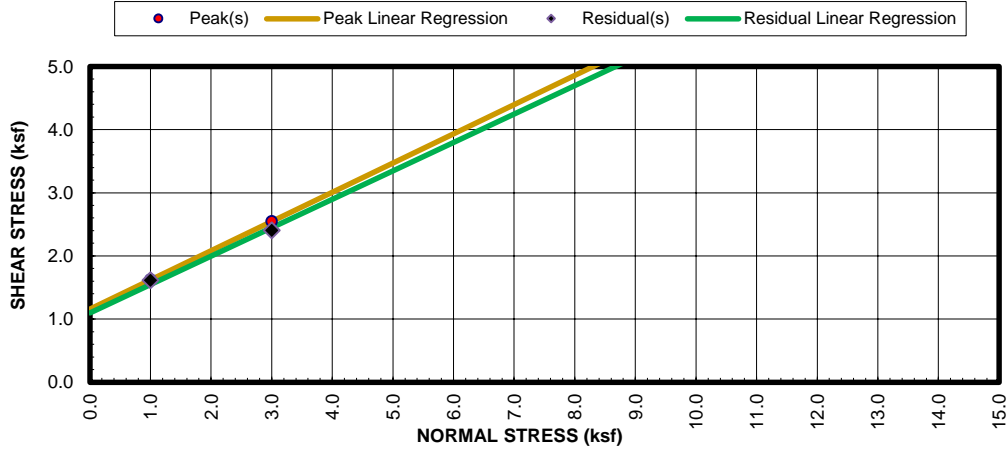
SPECIMEN			
INITIAL PARAMETERS	3 ksf	1 ksf	
MOISTURE (%)	10.10	10.10	
DRY DENSITY (PCF)	116.46	116.46	
VOID RATIO	0.473	0.473	
SATURATION (%)	58.67	58.67	
DIAMETER (IN.)	2.412	2.412	
HEIGHT (IN.)	1.000	1.000	
DIAMETER-TO-HEIGHT RATIO	2.412	2.412	
SPECIFIC GRAVITY (ASTM D854)	2.748	2.748	
FINAL PARAMETERS	4 ksf	2 ksf	
MOISTURE (%)	16.89	16.85	
DRY DENSITY (PCF)	117.17	117.26	
VOID RATIO	0.464	0.463	
SATURATION (%)	100.00	100.00	
DIAMETER (IN.)	2.412	2.412	
HEIGHT (IN.)	0.994	0.993	
NORMAL STRESS (ksf)	3.00	1.00	
PEAK STRESS (ksf)	1.96	0.86	
PEAK STRAIN (%)	11.40	1.04	
RESIDUAL STRESS (ksf)	1.91	0.72	
RESIDUAL STRAIN (%)	15.00	15.00	
RATE (IN/MIN)	0.00443	0.00603	
DIAMETER-TO-HEIGHT RATIO	2.427	2.429	

SPECIMEN INFORMATION		STRENGTH PARAMETERS		$\phi^\circ$	C(psf)
SAMPLE ID:	TP1@1-5	PEAK:	29.3	285.6	
DEPTH (ft):	1-5 feet	RESIDUAL:	30.4	140.0	
SAMPLE TYPE:	Remolded	<b>ASTM D4318</b>			
DESCRIPTION:	See exploration logs	LIQUID LIMIT:	26		
		PLASTIC LIMIT:	18		
REMARKS:	Consolidation data inconclusive. Default minimum shear rates used per ASTM D3080. Specimens remolded to 90% of ASTM D1557 Method A max. dry density of 129.4 pcf and 0% over optimum moisture content of 10.1%				



**CLIENT: Baez Geotechnical Group, Inc.**  
**PROJECT NAME: G367.01 - Camden, San Jose, CA**  
**PROJECT NO: 14368.00.215 PHLAB**  
**PROJECT LOCATION: San Jose, CA**  
**REPORT DATE: 8/29/2023**  
**TESTED BY: R. Montalvo**  
**REVIEWED BY: M. Gilbert**

# CONSOLIDATED DRAINED DIRECT SHEAR ASTM D3080



SPECIMEN			
INITIAL PARAMETERS	3 ksf	1 ksf	
MOISTURE (%)	4.80	4.80	
DRY DENSITY (PCF)	116.87	115.06	
VOID RATIO	0.500	0.524	
SATURATION (%)	26.95	25.73	
DIAMETER (IN.)	2.415	2.415	
HEIGHT (IN.)	1.005	1.003	
DIAMETER-TO-HEIGHT RATIO	2.403	2.407	
SPECIFIC GRAVITY (ASTM D854)	2.808	2.808	
FINAL PARAMETERS	3 ksf	1 ksf	
MOISTURE (%)	15.76	17.95	
DRY DENSITY (PCF)	121.53	116.55	
VOID RATIO	0.442	0.504	
SATURATION (%)	100.00	100.00	
DIAMETER (IN.)	2.415	2.415	
HEIGHT (IN.)	0.966	0.971	
NORMAL STRESS (ksf)	3.00	1.00	
PEAK STRESS (ksf)	2.55	1.62	
PEAK STRAIN (%)	12.42	14.49	
RESIDUAL STRESS (ksf)	2.40	1.61	
RESIDUAL STRAIN (%)	15.00	15.00	
RATE (IN/MIN)	0.00604	0.00604	
DIAMETER-TO-HEIGHT RATIO	2.499	2.488	

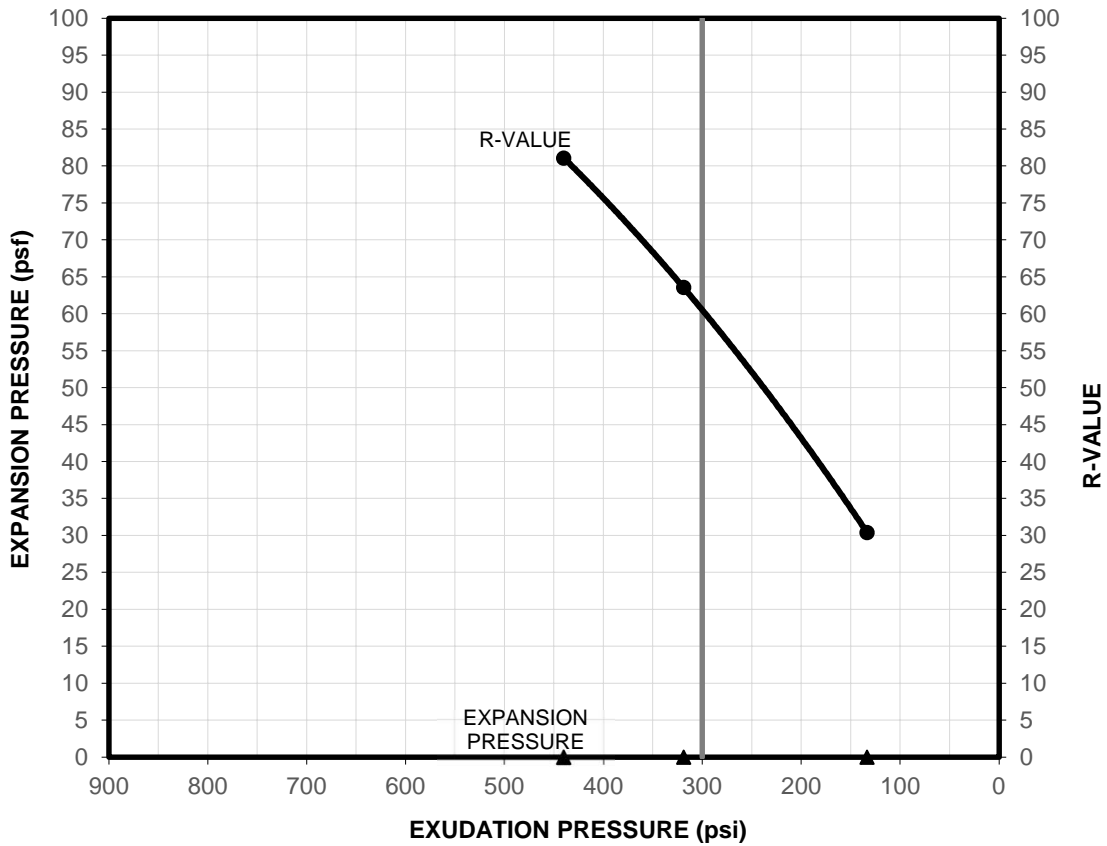
SPECIMEN INFORMATION		STRENGTH PARAMETERS		$\phi^\circ$	C(psf)
SAMPLE ID:	B3@6.5-7.5	PEAK:	24.8	24.8	1161
DEPTH (ft):	6.5-7.5 ft	RESIDUAL:	24.2	24.2	1100
SAMPLE TYPE:	In-situ	<b>ASTM D4318</b>			
DESCRIPTION:	See exploration logs	LIQUID LIMIT:	n/a		
		PLASTIC LIMIT:	n/a		
REMARKS:	Consolidation data inconclusive. Default minimum shear rates used per ASTM D3080				



**CLIENT: Baez Geotechnical Group, Inc.**  
**PROJECT NAME: G367.01 - Camden**  
**PROJECT NO: 14368.000.215 PHLAB**  
**PROJECT LOCATION: San Jose, CA**  
**REPORT DATE: 8/31/2023**  
**TESTED BY: K. Lecce**  
**REVIEWED BY: J. Moriarty**

# R-VALUE TEST REPORT

## CTM 301



SAMPLE ID	MATERIAL DESCRIPTION	SAMPLE LOCATION		
TP1@1-5	See exploration logs	TP1 at 1 to 5 feet		
SPECIMENS		1	2	3
EXUDATION PRESSURE (psi)		440	319	133
EXPANSION PRESSURE (psf)		0	0	0
R-VALUE		81	64	30
MOISTURE CONTENT (%)		9.0	9.7	11.0
DRY DENSITY (pcf)		131.5	131.1	129.4
EXPANSION PRESSURE (psf) AT EXUDATION PRESSURE OF 300 psi		0		
<b>R-VALUE AT EXUDATION PRESSURE OF 300 psi</b>		<b>TEST RESULT</b>		
		<b>61</b>		



**CLIENT:** Baez Geotechnical Group, Inc.  
**PROJECT NAME:** G367.01 - Camden  
**PROJECT NO:** 14368.000.215 PHLAB  
**PROJECT LOCATION:** San Jose, CA  
**REPORT DATE:** 8/29/2023  
**TESTED BY:** M. Ryan  
**REVIEWED BY:** M. Gilbert

## **APPENDIX D**

### CERCO Analytical Corrosion Test Results



30 August, 2023

Job No. 2308055  
Cust. No. 13042

11100 Willow Pass Court, Suite A  
Concord, CA 94520-1006  
925 462 2771 Fax: 925 462 2773  
www.cercoanalytical.com

Ms. Stefanie Parman  
Baez Geotechnical Group, Inc.  
P.O. Box 296  
Oakdale, CA 95361

Subject: Project No.: G367.01  
Project Name: Camden Avenue-San Jose, CA  
Corrosivity Analysis – ASTM Methods

Dear Ms. Parman:

Pursuant to your request, CERCO Analytical has analyzed the soil sample submitted on August 28, 2023. Based on the analytical results, this brief corrosivity evaluation is enclosed for your consideration.

Based upon the resistivity measurement, this sample is classified as “moderately corrosive”. All buried iron, steel, cast iron, ductile iron, galvanized steel and dielectric coated steel or iron should be properly protected against corrosion depending upon the critical nature of the structure. All buried metallic pressure piping such as ductile iron firewater pipelines should be protected against corrosion.

The chloride ion concentration reflects none detected with a reporting limit of 15 mg/kg.

The sulfate ion concentration is 16 mg/kg and is determined to be insufficient to damage reinforced concrete structures and cement mortar-coated steel at this location.

The sulfide ion concentrations reflect none detected with a reporting limit of 50 mg/kg.

The pH of the soil is 6.74, which does not present corrosion problems for buried iron, steel, mortar-coated steel and reinforced concrete structures.

The redox potential is 170-mV and is indicative of potentially “moderately corrosive” soils resulting from anaerobic soil conditions.

This corrosivity evaluation is based on general corrosion engineering standards and is non-specific in nature. For specific long-term corrosion control design recommendations or consultation, please call JDH Corrosion Consultants, Inc. at (925) 927-6630.

We appreciate the opportunity of working with you on this project. If you have any questions, or if you require further information, please do not hesitate to contact us.

Very truly yours,  
CERCO ANALYTICAL, INC.

A handwritten signature in black ink, appearing to read 'JDH for'.

J. Darby Howard, Jr., P.E.  
President

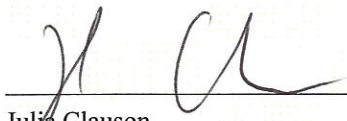
JDH/jdl  
Enclosure

Client: Baez Geotechnical Group  
 Client's Project No.: G367.01  
 Client's Project Name: Camden Avenue-San Jose, CA  
 Date Sampled: 15-Aug-23  
 Date Received: 28-Aug-23  
 Matrix: Soil  
 Authorization: Signed Chain of Custody

Date of Report: 30-Aug-2023

Job/Sample No.	Sample I.D.	Redox (mV)	pH	Conductivity (umhos/cm)*	Resistivity (100% Saturation) (ohms-cm)	Sulfide (mg/kg)*	Chloride (mg/kg)*	Sulfate (mg/kg)*
2308055-001	TP1 @ 1-5'	170	6.74	-	4,800	N.D.	N.D.	16

Method:	ASTM D1498	ASTM D4972	ASTM D1125M	ASTM G57	ASTM D4658M	ASTM D4327	ASTM D4327
Reporting Limit:	-	-	10	-	50	15	15
Date Analyzed:	29-Aug-2023	29-Aug-2023	-	29-Aug-2023	29-Aug-2023	29-Aug-2023	29-Aug-2023

  
 \_\_\_\_\_  
 Julia Clauson  
 Chemist

\* Results Reported on "As Received" Basis  
 N.D. - None Detected

# Chain of Custody

2308055

CONCORD, CA 94520-1006  
925 462 2771  
Fax: 925 462 2775



Job No. <b>G367.01</b>	CU# <b>13042</b>	Client Project I.D. <b>Camden Avenue</b>	Schedule Analyte	Date Sampled <b>8/15/2023</b>	Date Due <b>Standard</b>
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**Full Name** Stefanie Parman, **Phone** Office (209) 602-6569  
 smp@baezgeotechnicalgroup.com

**Company and/or Mailing Address** **Cell** (209) 602-6569  
 Baez Geotechnical Group, PO Box 296, Oakdale, CA 95361

**Sample Source**  
 G367.01- Camden Avenue- San Jose, CA

Lab No.	Sample I.D.	Date	Time	Matrix	Contain.	Size	Preserv.	Qty.
---------	-------------	------	------	--------	----------	------	----------	------

1	TPI@15'	8/15/23		S	Baggy			1

Redox Potential	ANALYSIS							ASTM						
	pH	Sulfate	Chloride	Resistivity-100% Saturated	Sulfides	Brief Evaluation								
X	X	X	X	X	X		X							

<b>MATRIX</b>	DW - Drinking Water	<b>ABBREVIATIONS</b>	HEB - Hubschib	<b>SAMPLE RECEIPT</b>	Total No. of Containers <input type="text"/>
	GW - Ground Water		PW - Petcock Valve		Rec'd Good Cond/Cont <input type="text"/>
	SW - Surface Water		PT - Pressure Tank		Conforms to Record <input type="text"/>
	WW - Waste Water		RH - Rump House		Temp. at Lab. °C <input type="text"/>
Water	RR - Restroom	Sampler <input type="text"/>			
SL - Sludge	GL - Glass				
S - Soil	PL - Plastic				
Product	SIT - Sitrile				

Relinquished By: *Nicole Dries* Date: **8/24/23** Time:

Received By: *Nicole Dries* Date: **8/28/23** Time: **2:30 PM**

Relinquished By:  Date:  Time:

Received By:  Date:  Time:

Relinquished By:  Date:  Time:

Received By:  Date:  Time:

**Comments:**

**THERE IS AN ADDITIONAL CHARGE FOR EXTRUDING SOIL FROM METAL TUBES**

Email Address: smp@baezgeotechnicalgroup.com

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