April 5, 2023

NOJ92, LLC
170 S Beverly Drive, #306
Beverly Hills, California 90212

Attention: Mr. Jack Luu
Principal

Project No.: **23G113-2**

Subject: **Results of Infiltration Testing**
Proposed Industrial Development
South Corner of Cajon Boulevard and June Street
Muscoy, California

Reference: Geotechnical Investigation, Proposed Industrial Development, South Corner of Cajon Boulevard and June Street. Muscoy (San Bernardino County), California, prepared by Southern California Geotechnical, Inc. (SCG), prepared for NOJ92, LLC, SCG Project No. 23G113-1, dated April 4, 2023.

Mr. Luu:

In accordance with your request, we have conducted infiltration testing at the subject site. We are pleased to present this report summarizing the results of the infiltration testing and our design recommendations.

Scope of Services

The scope of services performed for this project was in general accordance with our Proposal No. 23P159, dated February 24, 2023. The scope of services included site reconnaissance, subsurface exploration, field testing, and engineering analysis to determine the infiltration rates of the on-site soils. The infiltration testing was performed in general accordance with ASTM Test Method D-3385-03, Standard Test Method for Infiltration Rate of Soils in Field Using Double Ring Infiltrometer.

Site and Project Description

The subject site is located at the south corner of Cajon Boulevard and June Street in Muscoy, an unincorporated community in the county of San Bernardino, California. The site is bounded to the northeast by Cajon Boulevard, to the southeast and southwest by existing single-family residences (SFR) and to the northwest by June Street. The general location of the site is illustrated on the Site Location Map, enclosed as Plate 1 of this report.

The site consists of a rectangular-shaped parcel, 4.67± acres in size and is presently vacant and undeveloped. Ground surface consists of dense native grass and weed growth with areas of exposed soil.

Detailed topographic information was provided on the site plan prepared by RA Smith. Based on this plan, the site topography ranges from 1501± feet mean sea level (msl) in the north corner to 1485± feet msl in the south corner. Overall, the site topography slopes gently to the southwest There is 16± feet of elevation differential across the site.

Proposed Development

Based on a conceptual site plan, prepared by SKH, the site will be developed with two (2) industrial buildings identified as Building 1 and Building 2. Building 1 will be 50,488± ft^2 in size, located in the north area of the site. Building 2 will be 39,829± ft^2 in size, located in the south area of the site. Dock-high doors will be constructed along portions one building wall of each of the buildings. The buildings are expected to be surrounded by asphaltic concrete pavements in the parking and drive areas, Portland cement concrete in the truck-court areas and limited areas of landscape planters throughout.

The proposed development will include on-site storm water infiltration. The infiltration systems will consist of three (3) below-grade chamber systems (identified as Infiltration Systems "A" through C" located in the southwestern area of the site. The bottoms of the infiltration systems will extend to 10± feet below the existing site grades.

Concurrent Study

SCG concurrently conducted a geotechnical investigation at the subject site (referenced above). As part of this study, five (5) borings were advanced to depths of 10 to 25± feet below existing site grades.

Native alluvial soils were encountered at the ground surface at all of the boring locations. In general, the soils encountered at the boring locations consist of medium dense to very dense fine to coarse sands with varying fine to coarse gravel content, but some of the borings encountered loose to medium dense silty sands and sands in the upper 3 to 5± feet. Occasional cobbles were observed in the auger spoils during drilling, especially at depts greater than 3 to 5± feet. Native alluvium extends to at least the maximum depth explored of 25± feet below the existing site grades.

Groundwater was not encountered at any of the borings. Based on the lack of any water within the borings, and the moisture contents of the recovered soil samples, the static groundwater table is considered to have existed at a depth in excess of 25± feet below existing site grades, at the time of the subsurface investigation.

Subsurface Exploration

Scope of Exploration

The subsurface exploration for the infiltration testing consisted of four (4) backhoe-excavated trenches, extending to a depth 10± feet below existing site grades. The trenches were logged during excavation by a member of our staff. The approximate locations of the infiltration trenches (identified as Infiltration Trench Nos. I-1 through I-4) are indicated on the Infiltration Test Location Plan, enclosed as Plate 2 of this report.

Geotechnical Conditions

Artificial fill soils were encountered at the ground surface at all of the infiltration test locations, extending to depths ranging from 1½ to 3± feet below existing site grades. The fill soils consist of medium dense silty fine sands, silty fine to medium sands, and silty fine to coarse sands with trace amounts of gravel. Based on review of historic aerial photographs, it appears that the fill soils were placed on-site in between 1938 and 1959 during a mass grading operation. Native alluvial soils were encountered beneath the fill soils at all of the infiltration test locations, extending to at least the maximum explored depth of 10± feet below existing site grades. The alluvium generally consists of dense fine to coarse sands, sandy fine to coarse gravels, and gravelly fine to coarse sands. Occasional to extensive cobbles and boulders were encountered in the alluvium. The Trench Logs, which illustrate the conditions encountered at the infiltration test locations, are presented in this report.

Groundwater was not encountered during excavation of any of the trenches and drilling of any of the borings during the concurrent geotechnical investigation. Based on the lack of any water within the borings and trenches, and the moisture contents of the recovered soil samples, the static groundwater table is considered to have existed at a depth in excess of 25± feet below existing site grades, at the time of the subsurface investigation.

As a part of our research, we reviewed available groundwater data in order to determine groundwater levels for the site. Recent water level data was obtained from the California Department of Water Resources website, http://www.water.ca.gov/waterdatalibrary/. The nearest monitoring well on record is located 1,845± feet northwest of the site. Water level readings within this monitoring well indicate a groundwater level 300± feet below the ground surface in December 2022.

Infiltration Testing

We understand that the results of the testing will be used to prepare a preliminary design for the storm water infiltration system that will be used at the subject site. As previously mentioned, the infiltration testing was performed in general accordance with ASTM Test Method D-3385-03, Standard Test Method for Infiltration Rate of Soils in Field Using Double Ring Infiltrometer.

Two stainless steel infiltration rings were used for the infiltration testing. The outer infiltration ring is 2 feet in diameter and 20 inches in height. The inner infiltration ring is 1 foot in diameter and 20 inches in height. At the test locations, the outer ring was driven 3± inches into the soil at the base of each trench. The inner ring was centered inside the outer ring and subsequently driven 3± inches into the soil at the base of the trench. The rings were driven into the soil using a ten-pound sledge hammer. The soil surrounding the wall of the infiltration rings was only slightly disturbed during the driving process.

Infiltration Testing Procedure

Infiltration testing was performed at all of the trench locations. The infiltration testing consisted of filling the inner ring and the annular space (the space between the inner and outer rings) with water, approximately 3 to 4 inches above the soil. To prevent the flow of water from one ring to the other, the water level in both the inner ring and the annular space between the rings was

maintained using constant-head float valves. The volume of water that was added to maintain a constant head in the inner ring and the annular space during each time interval was determined and recorded. A cap was placed over the rings to minimize the evaporation of water during the tests.

The schedule for readings was determined based on the observed soil type at the base of each backhoe-excavated trench. Based on the existing soils at the trench locations, the volumetric measurements were made at 5-minute increments. The water volume measurements are presented on the spreadsheets enclosed with this report. The infiltration rates for each of the timed intervals are also tabulated on these spreadsheets.

The infiltration rates for the infiltration tests are calculated in centimeters per hour and then converted to inches per hour. The rates are summarized below:

Infiltration Test No.	Depth (feet)	Soil Description	Measured Infiltration Rate (inches/hour)
I-1	10	Light Brown Gravelly fine to coarse Sand, occasional Cobbles	20.0
I-2	10	Light Brown Sandy fine to coarse Gravel, occasional Cobbles, occasional Boulders	18.1
I-3	10	Brown Gravelly fine to coarse Sand, occasional Cobbles	21.0
I-4	10	Brown Gravelly fine to coarse Sand, occasional Cobbles	19.8

Design Recommendations

Four (4) infiltration tests were performed at the subject site. As noted above, the calculated infiltration rates at the infiltration test locations range from 18.1 to 21.0 inches per hour. Our recommendations are summarized below:

Infiltration Test Nos.	Infiltration System	Location	Design Infiltration Rate (inches/hour)
I-1	"A"	Northwest	20.0
I-2, I-3	"B"	West	18.1
I-4	"C"	Southwest	19.8

We recommend that a representative from the geotechnical engineer be on-site during the construction of the proposed infiltration system to identify the soil classification at the base of the infiltration basin. It should be confirmed that the soils at the base of the proposed infiltration system corresponds with those presented in this report to ensure that the performance of the system will be consistent with the rates reported herein.

The design of storm water disposal systems should be performed by the project civil engineer, in accordance with the City of Muscoy and/or County of San Bernardino guidelines. It is recommended any such systems be designed and constructed to facilitate removal of silt and clay, or other deleterious materials from any water that may enter the system. The presence of

such materials would decrease the flow rates through the system. It should be noted that the recommended infiltration rates are based on infiltration testing at four (4) discrete locations and that the overall infiltration rates of the proposed infiltration systems could vary considerably.

Infiltration Rate Considerations

The infiltration rates presented herein was determined in accordance with the Riverside County guidelines and are considered valid only for the time and place of the actual test. Varying subsurface conditions will exist in other areas of the site, which could alter the recommended infiltration rates presented above. The infiltration rates will decline over time between maintenance cycles as silt or clay particles accumulate on the BMP surface. The infiltration rate is highly dependent upon a number of factors, including density, silt and clay content, grainsize distribution throughout the range of particle sizes, and particle shape. Small changes in these factors can cause large changes in the infiltration rates.

Infiltration rates are based on unsaturated flow. As water is introduced into soils by infiltration, the soils become saturated and the wetting front advances from the unsaturated zone to the saturated zone. Once the soils become saturated, infiltration rates become zero, and water can only move through soils by hydraulic conductivity at a rate determined by pressure head and soil permeability. Changes in soil moisture content will affect the infiltration rate. Infiltration rates should be expected to decrease until the soils become saturated. Soil permeability values will then govern groundwater movement. Permeability values may be on the order of 10 to 20 times less than infiltration rates. The system designer should incorporate adequate factors of safety and allow for overflow design into appropriate traditional storm drain systems, which would transport storm water off-site.

Construction Considerations

The infiltration rates presented in this report are specific to the tested locations and tested depths. Infiltration rates can be significantly reduced if the soils are exposed to excessive disturbance or compaction during construction. Compaction of the soils at the bottom of the infiltration system can significantly reduce the infiltration ability of the basins. Therefore, the subgrade soils within proposed infiltration system areas should not be over-excavated, undercut or compacted in any significant manner. **It is recommended that a note to this effect be added to the project plans and/or specifications.**

We recommend that a representative from the geotechnical engineer be on-site during the construction of the proposed infiltration systems to identify the soil classification at the base of each system. It should be confirmed that the soils at the base of the proposed infiltration systems correspond with those presented in this report to ensure that the performance of the systems will be consistent with the rates reported herein.

We recommend that scrapers and other rubber-tired heavy equipment not be operated on the basin bottom, or at levels lower than 2 feet above the bottom of the system, particularly within basins. As such, the bottom 24 inches of the infiltration systems should be excavated with non-rubber-tired equipment, such as excavators.

Chamber Maintenance

The proposed project may include below-grade infiltration chambers. Water flowing into these chambers will carry some level of sediment. This layer has the potential to significantly reduce the infiltration rate of the basin subgrade soils. Therefore, a formal chamber maintenance program should be established to ensure that these silt and clay deposits are removed from the chamber on a regular basis.

Location of Infiltration Systems

The use of on-site storm water infiltration systems carries a risk of creating adverse geotechnical conditions. Increasing the moisture content of the soil can cause the soil to lose internal shear strength and increase its compressibility, resulting in a change in the designed engineering properties. Overlying structures and pavements in the infiltration area could potentially be damaged due to saturation of the subgrade soils. **The proposed infiltration systems for this site should be located at least 25 feet away from any structures, including retaining walls.** Even with this provision of locating the infiltration system at least 25 feet from the building(s), it is possible that infiltrating water into the subsurface soils could have an adverse effect on the proposed or existing structures. It should also be noted that utility trenches which happen to collect storm water can also serve as conduits to transmit storm water toward the structure, depending on the slope of the utility trench. Therefore, consideration should also be given to the proposed locations of underground utilities which may pass near the proposed infiltration system.

The infiltration system designer should also give special consideration to the effect that the proposed infiltration systems may have on nearby subterranean structures, open excavations, or descending slopes. In particular, infiltration systems should not be located near the crest of descending slopes, particularly where the slopes are comprised of granular soils. Such systems will require specialized design and analysis to evaluate the potential for slope instability, piping failures and other phenomena that typically apply to earthen dam design. This type of analysis is beyond the scope of this infiltration test report, but these factors should be considered by the infiltration system designer when locating the infiltration systems.

General Comments

This report has been prepared as an instrument of service for use by the client in order to aid in the evaluation of this property and to assist the architects and engineers in the design and preparation of the project plans and specifications. This report may be provided to the contractor(s) and other design consultants to disclose information relative to the project. However, this report is not intended to be utilized as a specification in and of itself, without appropriate interpretation by the project architect, structural engineer, and/or civil engineer. The design of the infiltration system is the responsibility of the civil engineer. The role of the geotechnical engineer is limited to determination of infiltration rate only. By using the design infiltration rates contained herein, the civil engineer agrees to indemnify, defend, and hold harmless the geotechnical engineer for all aspects of the design and performance of the infiltration system. The reproduction and distribution of this report must be authorized by the client and Southern California Geotechnical, Inc. Furthermore, any reliance on this report by an unauthorized

third party is at such party's sole risk, and we accept no responsibility for damage or loss which may occur. The analysis of this site was based on a subsurface profile interpolated from limited discrete soil samples. While the materials encountered in the project area are considered to be representative of the total area, some variations should be expected between trench locations and testing depths. If the conditions encountered during construction vary significantly from those detailed herein, we should be contacted immediately to determine if the conditions alter the recommendations contained herein.

This report has been based on assumed or provided characteristics of the proposed development. It is recommended that the owner, client, architect, structural engineer, and civil engineer carefully review these assumptions to ensure that they are consistent with the characteristics of the proposed development. If discrepancies exist, they should be brought to our attention to verify that they do not affect the conclusions and recommendations contained herein. We also recommend that the project plans and specifications be submitted to our office for review to verify that our recommendations have been correctly interpreted. The analysis, conclusions, and recommendations contained within this report have been promulgated in accordance with generally accepted professional geotechnical engineering practice. No other warranty is implied or expressed.

Closure

We sincerely appreciate the opportunity to be of service on this project. We look forward to providing additional consulting services during the course of the project. If we may be of further assistance in any manner, please contact our office.

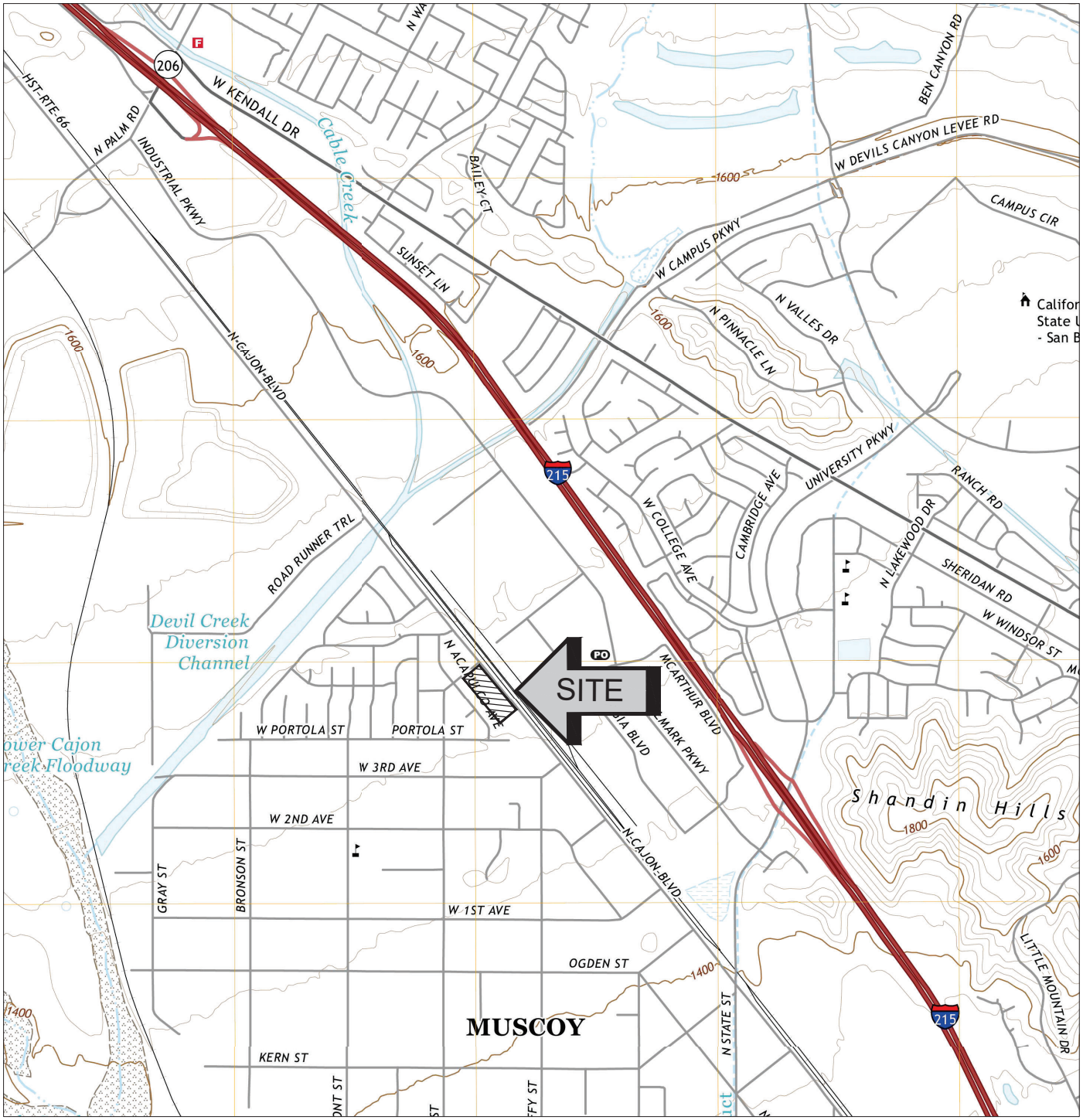
Respectfully Submitted,
SOUTHERN CALIFORNIA GEOTECHNICAL, INC.

Ryan Bremer
Staff Geologist

Robert G. Trazo, GE 2655
Principal Engineer

Distribution: (1) Addressee

Enclosures: Plate 1: Site Location Map
Plate 2: Infiltration Test Location Plan
Trench Log Legend and Logs (6 pages)
Infiltration Test Results Spreadsheets (4 pages)
Grainsize Distribution Graphs (4 pages)



SOURCE: USGS TOPOGRAPHIC MAPS OF SAN BERNARDINO NORTH QUADRANGLE, SAN BERNARDINO COUNTY, CALIFORNIA, 2021.

SITE LOCATION MAP

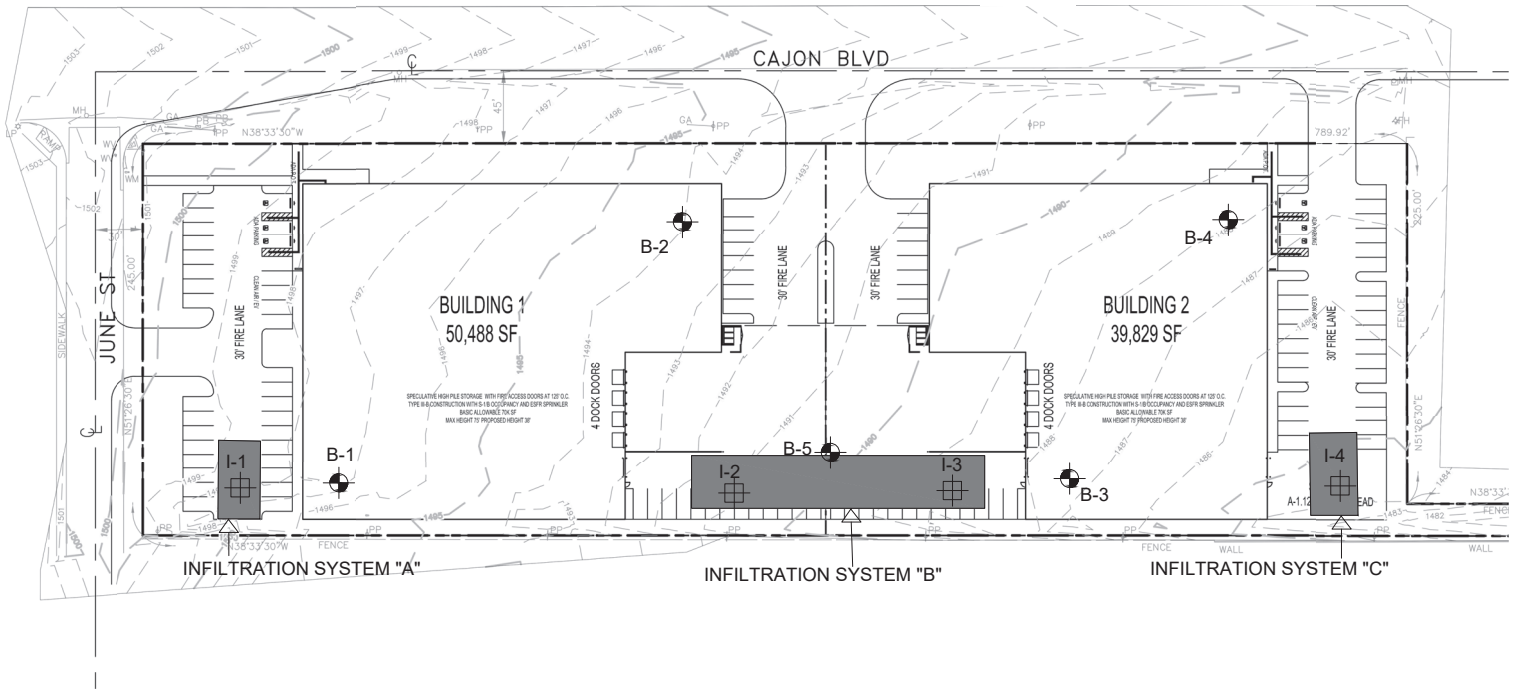
PROPOSED INDUSTRIAL DEVELOPMENT

MUSCOY, CALIFORNIA

SCALE: 1" = 2000'	
DRAWN: RB CHKD: RGT	
SCG PROJECT 23G113-2	
PLATE 1	

SoCalGeo

SOUTHERN CALIFORNIA GEOTECHNICAL



GEOTECHNICAL LEGEND

- APPROXIMATE INFILTRATION TEST LOCATION
- APPROXIMATE BORING LOCATION (SCG PROJECT NO. 22G213-1)

NOTE: SITE PLAN PROVIDED BY RA SMITH, INC.

INFILTRATION TEST LOCATION PLAN

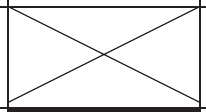
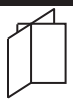
PROPOSED INDUSTRIAL DEVELOPMENT

MUSCOY, CALIFORNIA

SCALE: 1" = 60'	
DRAWN: RB CHKD: RGT	
SCG PROJECT 23G113-2	
PLATE 2	

SOUTHERN CALIFORNIA GEOTECHNICAL

TRENCH LOG LEGEND

SAMPLE TYPE	GRAPHICAL SYMBOL	SAMPLE DESCRIPTION
AUGER		SAMPLE COLLECTED FROM AUGER CUTTINGS, NO FIELD MEASUREMENT OF SOIL STRENGTH. (DISTURBED)
CORE		ROCK CORE SAMPLE: TYPICALLY TAKEN WITH A DIAMOND-TIPPED CORE BARREL. TYPICALLY USED ONLY IN HIGHLY CONSOLIDATED BEDROCK.
GRAB		SOIL SAMPLE TAKEN WITH NO SPECIALIZED EQUIPMENT, SUCH AS FROM A STOCKPILE OR THE GROUND SURFACE. (DISTURBED)
CS		CALIFORNIA SAMPLER: 2-1/2 INCH I.D. SPLIT BARREL SAMPLER, LINED WITH 1-INCH HIGH BRASS RINGS. DRIVEN WITH SPT HAMMER. (RELATIVELY UNDISTURBED)
NSR		NO RECOVERY: THE SAMPLING ATTEMPT DID NOT RESULT IN RECOVERY OF ANY SIGNIFICANT SOIL OR ROCK MATERIAL.
SPT		STANDARD PENETRATION TEST: SAMPLER IS A 1.4 INCH INSIDE DIAMETER SPLIT BARREL, DRIVEN 18 INCHES WITH THE SPT HAMMER. (DISTURBED)
SH		SHELBY TUBE: TAKEN WITH A THIN WALL SAMPLE TUBE, PUSHED INTO THE SOIL AND THEN EXTRACTED. (UNDISTURBED)
VANE		VANE SHEAR TEST: SOIL STRENGTH OBTAINED USING A 4 BLADED SHEAR DEVICE. TYPICALLY USED IN SOFT CLAYS-NO SAMPLE RECOVERED.

COLUMN DESCRIPTIONS

DEPTH: Distance in feet below the ground surface.

SAMPLE: Sample Type as depicted above.

BLOW COUNT: Number of blows required to advance the sampler 12 inches using a 140 lb hammer with a 30-inch drop. 50/3" indicates penetration refusal (>50 blows) at 3 inches. WH indicates that the weight of the hammer was sufficient to push the sampler 6 inches or more.

POCKET PEN.: Approximate shear strength of a cohesive soil sample as measured by pocket penetrometer.

GRAPHIC LOG: Graphic Soil Symbol as depicted on the following page.

DRY DENSITY: Dry density of an undisturbed or relatively undisturbed sample in lbs/ft^3.

MOISTURE CONTENT: Moisture content of a soil sample, expressed as a percentage of the dry weight.

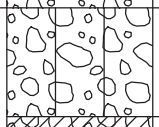
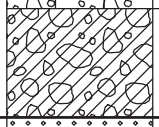
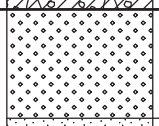
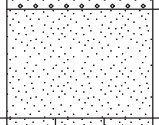
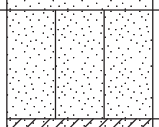
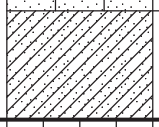
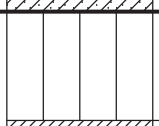
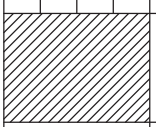
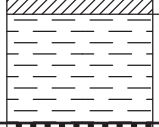
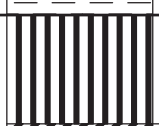
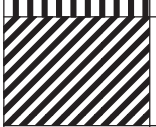
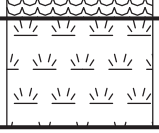
LIQUID LIMIT: The moisture content above which a soil behaves as a liquid.

PLASTIC LIMIT: The moisture content above which a soil behaves as a plastic.

PASSING #200 SIEVE: The percentage of the sample finer than the #200 standard sieve.

UNCONFINED SHEAR: The shear strength of a cohesive soil sample, as measured in the unconfined state.

SOIL CLASSIFICATION CHART

MAJOR DIVISIONS			SYMBOLS		TYPICAL DESCRIPTIONS
			GRAPH	LETTER	
COARSE GRAINED SOILS MORE THAN 50% OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	CLEAN GRAVELS (LITTLE OR NO FINES)		GW	WELL-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
				GP	POORLY-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
		GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES)		GM	SILTY GRAVELS, GRAVEL - SAND - SILT MIXTURES
				GC	CLAYEY GRAVELS, GRAVEL - SAND - CLAY MIXTURES
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	CLEAN SANDS (LITTLE OR NO FINES)		SW	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
				SP	POORLY-GRADED SANDS, GRAVELLY SAND, LITTLE OR NO FINES
		SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)		SM	SILTY SANDS, SAND - SILT MIXTURES
				SC	CLAYEY SANDS, SAND - CLAY MIXTURES
FINE GRAINED SOILS MORE THAN 50% OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	SILTS AND CLAYS	LIQUID LIMIT LESS THAN 50		ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
				OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS	LIQUID LIMIT GREATER THAN 50		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS
				CH	INORGANIC CLAYS OF HIGH PLASTICITY
				OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS				PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

NOTE: DUAL SYMBOLS ARE USED TO INDICATE BORDERLINE SOIL CLASSIFICATIONS

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

TRENCH NO. I-1

JOB NO.: 23G113-2
PROJECT: Proposed Industrial Development
LOCATION: Muscoy, California

EXCAVATION DATE: 3/13/23
EXCAVATION METHOD: Backhoe
LOGGED BY: Ryan Bremer

WATER DEPTH: Dry
CAVE DEPTH: ---
READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: --- MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
					FILL: Dark Brown Silty fine to medium Sand, trace to little coarse Sand, trace fine to coarse Gravel, little fine root fibers, medium dense-moist							
					ALLUVIUM: Light Brown Gravelly fine to coarse Sand, occasional Cobbles, dense-damp							
5												
							5			2		
10					Trench Terminated at 10'							

TBL 23G113-2.GPJ SOCALGEO.GDT 4/5/23

TEST TRENCH LOG

PLATE B-1

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

TRENCH NO. I-2

JOB NO.: 23G113-2
PROJECT: Proposed Industrial Development
LOCATION: Muscoy, California

EXCAVATION DATE: 3/13/23
EXCAVATION METHOD: Backhoe
LOGGED BY: Ryan Bremer

WATER DEPTH: Dry
CAVE DEPTH: ---
READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: --- MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
					FILL: Dark Brown Silty fine to coarse Sand, trace to little fine to coarse Gravel, little fine root fibers, medium dense-moist							
					ALLUVIUM: Light Brown Sandy fine to coarse Gravel, occasional Cobbles, occasional Boulders, dense-damp							
5												
							4			2		
10					Trench Terminated at 10'							

TBL 23G113-2.GPJ SOCALGEO.GDT 4/5/23

TEST TRENCH LOG **PLATE B-2**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

TRENCH NO. I-3

JOB NO.: 23G113-2
PROJECT: Proposed Industrial Development
LOCATION: Muscoy, California

EXCAVATION DATE: 3/13/23
EXCAVATION METHOD: Backhoe
LOGGED BY: Ryan Bremer

WATER DEPTH: Dry
CAVE DEPTH: ---
READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: --- MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
					FILL: Brown Silty fine Sand, trace medium to coarse Sand, trace fine to coarse Gravel, little fine root fibers, medium dense-moist							
					ALLUVIUM: Brown Gravelly fine to coarse Sand, occasional Cobbles, dense-damp							
5												
							6			2		
10					Trench Terminated at 10'							

TBL 23G113-2.GPJ SOCALGEO.GDT 4/5/23

TEST TRENCH LOG

PLATE B-3

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

TRENCH NO. I-4

JOB NO.: 23G113-2
PROJECT: Proposed Industrial Development
LOCATION: Muscoy, California

EXCAVATION DATE: 3/13/23
EXCAVATION METHOD: Backhoe
LOGGED BY: Ryan Bremer

WATER DEPTH: Dry
CAVE DEPTH: ---
READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: --- MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
					FILL: Brown Silty fine to medium Sand, trace coarse Sand, trace fine to coarse Gravel, medium dense-damp							
5					ALLUVIUM: Light Brown fine to coarse Sand, trace to little fine to coarse Gravel, occasional Cobbles, dense-damp							
10					Brown Gravelly fine to coarse Sand, occasional Cobbles, dense-damp		3			2		
					Trench Terminated at 10'							

TBL 23G113-2.GPJ SOCALGEO.GDT 4/5/23

TEST TRENCH LOG **PLATE B-4**

INFILTRATION CALCULATIONS

Project Name	Proposed Industrial Development
Project Location	Muscoy, California
Project Number	23G113-2
Engineer	Ryan Bremer

Infiltration Test No: I-1

Constants

	Diameter (ft)	Area (ft^2)	Area (cm^2)
Inner	1	0.785	730
Anlr. Spac	2	2.356	2189

*Note: The infiltration rate was calculated based on current time interval

Test Interval		Time (hr)	Interval **Elapsed** (min)	Flow Readings: Inner Ring (ml)	Ring Flow (cm^3)	Annular Ring (ml)	Space Flow (cm^3)	Infiltration Rates: Inner Ring* (cm/hr)	Annular Space* (cm/hr)	Inner Ring* (in/hr)	Annular Space* (in/hr)
1	Initial	10:06 AM	5	0	3550	0	10400	58.39	57.01	22.99	22.45
	Final	10:11 AM	**5**	3550		10400					
2	Initial	10:13 AM	5	0	3450	0	10600	56.74	58.11	22.34	22.88
	Final	10:18 AM	**10**	3450		10600					
3	Initial	10:20 AM	5	0	3300	0	10500	54.27	57.56	21.37	22.66
	Final	10:25 AM	**15**	3300		10500					
4	Initial	10:26 AM	5	0	3350	0	10600	55.10	58.11	21.69	22.88
	Final	10:31 AM	**20**	3350		10600					
5	Initial	10:36 AM	5	0	3300	0	10400	54.27	57.01	21.37	22.45
	Final	10:41 AM	**25**	3300		10400					
6	Initial	10:42 AM	5	0	3300	0	10100	54.27	55.37	21.37	21.80
	Final	10:47 AM	**30**	3300		10100					
7	Initial	10:50 AM	5	0	3200	0	9800	52.63	53.73	20.72	21.15
	Final	10:55 AM	**35**	3200		9800					
8	Initial	10:57 AM	5	0	3150	0	9900	51.81	54.27	20.40	21.37
	Final	11:02 AM	**40**	3150		9900					
9	Initial	11:04 AM	5	0	3150	0	9800	51.81	53.73	20.40	21.15
	Final	11:09 AM	**45**	3150		9800					
10	Initial	11:10 AM	5	0	3150	0	9700	51.81	53.18	20.40	20.94
	Final	11:15 AM	**50**	3150		9700					
11	Initial	11:17 AM	5	0	3100	0	9600	50.98	52.63	20.07	20.72
	Final	11:22 AM	**55**	3100		9600					
12	Initial	11:25 AM	5	0	3100	0	9500	50.98	52.08	20.07	20.50
	Final	11:30 AM	**60**	3100		9500					

INFILTRATION CALCULATIONS

Project Name	Proposed Industrial Development
Project Location	Muscoy, California
Project Number	23G113-2
Engineer	Ryan Bremer

Infiltration Test No: I-2

Constants

	Diameter (ft)	Area (ft^2)	Area (cm^2)
Inner	1	0.785	730
Anlr. Spac	2	2.356	2189

*Note: The infiltration rate was calculated based on current time interval

Test Interval		Time (hr)	Interval **Elapsed** (min)	Flow Readings: Inner Ring (ml)	Ring Flow (cm^3)	Annular Ring (ml)	Space Flow (cm^3)	Infiltration Rates: Inner Ring* (cm/hr)	Annular Space* (cm/hr)	Inner Ring* (in/hr)	Annular Space* (in/hr)
1	Initial	8:17 AM	5	0	3200	0	9900	52.63	54.27	20.72	21.37
	Final	8:22 AM	**5**	3200		9900					
2	Initial	8:24 AM	5	0	3200	0	10000	52.63	54.82	20.72	21.58
	Final	8:29 AM	**10**	3200		10000					
3	Initial	8:30 AM	5	0	3100	0	10100	50.98	55.37	20.07	21.80
	Final	8:35 AM	**15**	3100		10100					
4	Initial	8:37 AM	5	0	3150	0	9900	51.81	54.27	20.40	21.37
	Final	8:42 AM	**20**	3150		9900					
5	Initial	8:44 AM	5	0	3100	0	10000	50.98	54.82	20.07	21.58
	Final	8:49 AM	**25**	3100		10000					
6	Initial	8:50 AM	5	0	3000	0	9800	49.34	53.73	19.43	21.15
	Final	8:55 AM	**30**	3000		9800					
7	Initial	8:58 AM	5	0	3000	0	9400	49.34	51.53	19.43	20.29
	Final	9:03 AM	**35**	3000		9400					
8	Initial	9:05 AM	5	0	2950	0	9600	48.52	52.63	19.10	20.72
	Final	9:10 AM	**40**	2950		9600					
9	Initial	9:11 AM	5	0	2900	0	9400	47.70	51.53	18.78	20.29
	Final	9:16 AM	**45**	2900		9400					
10	Initial	9:18 AM	5	0	2800	0	9500	46.05	52.08	18.13	20.50
	Final	9:23 AM	**50**	2800		9500					
11	Initial	9:25 AM	5	0	2850	0	9300	46.87	50.98	18.45	20.07
	Final	9:30 AM	**55**	2850		9300					
12	Initial	9:32 AM	5	0	2800	0	9300	46.05	50.98	18.13	20.07
	Final	9:37 AM	**60**	2800		9300					

INFILTRATION CALCULATIONS

Project Name	Proposed Industrial Development
Project Location	Muscoy, California
Project Number	23G113-2
Engineer	Ryan Bremer

Infiltration Test No: I-3

Constants

	Diameter (ft)	Area (ft^2)	Area (cm^2)
Inner	1	0.785	730
Anlr. Spac	2	2.356	2189

*Note: The infiltration rate was calculated based on current time interval

Test Interval		Time (hr)	Interval **Elapsed** (min)	Flow Readings: Inner Ring (ml)	Ring Flow (cm^3)	Annular Ring (ml)	Space Flow (cm^3)	Infiltration Rates: Inner Ring* (cm/hr)	Annular Space* (cm/hr)	Inner Ring* (in/hr)	Annular Space* (in/hr)
1	Initial	10:24 AM	5	0	3800	0	11800	62.50	64.69	24.61	25.47
	Final	10:29 AM	**5**	3800		11800					
2	Initial	10:30 AM	5	0	3800	0	11600	62.50	63.59	24.61	25.04
	Final	10:35 AM	**10**	3800		11600					
3	Initial	10:37 AM	5	0	3800	0	11600	62.50	63.59	24.61	25.04
	Final	10:42 AM	**15**	3800		11600					
4	Initial	10:44 AM	5	0	3750	0	11600	61.67	63.59	24.28	25.04
	Final	10:49 AM	**20**	3750		11600					
5	Initial	10:50 AM	5	0	3600	0	11700	59.21	64.14	23.31	25.25
	Final	10:55 AM	**25**	3600		11700					
6	Initial	10:57 AM	5	0	3650	0	11700	60.03	64.14	23.63	25.25
	Final	11:02 AM	**30**	3650		11700					
7	Initial	11:04 AM	5	0	3450	0	11600	56.74	63.59	22.34	25.04
	Final	11:09 AM	**35**	3450		11600					
8	Initial	11:11 AM	5	0	3400	0	11500	55.92	63.05	22.02	24.82
	Final	11:16 AM	**40**	3400		11500					
9	Initial	11:17 AM	5	0	3300	0	11600	54.27	63.59	21.37	25.04
	Final	11:22 AM	**45**	3300		11600					
10	Initial	11:24 AM	5	0	3350	0	11500	55.10	63.05	21.69	24.82
	Final	11:29 AM	**50**	3350		11500					
11	Initial	11:30 AM	5	0	3300	0	11400	54.27	62.50	21.37	24.61
	Final	11:35 AM	**55**	3300		11400					
12	Initial	11:38 AM	5	0	3250	0	11200	53.45	61.40	21.04	24.17
	Final	11:43 AM	**60**	3250		11200					

INFILTRATION CALCULATIONS

Project Name	Proposed Industrial Development
Project Location	Muscoy, California
Project Number	23G113-2
Engineer	Ryan Bremer

Infiltration Test No: I-4

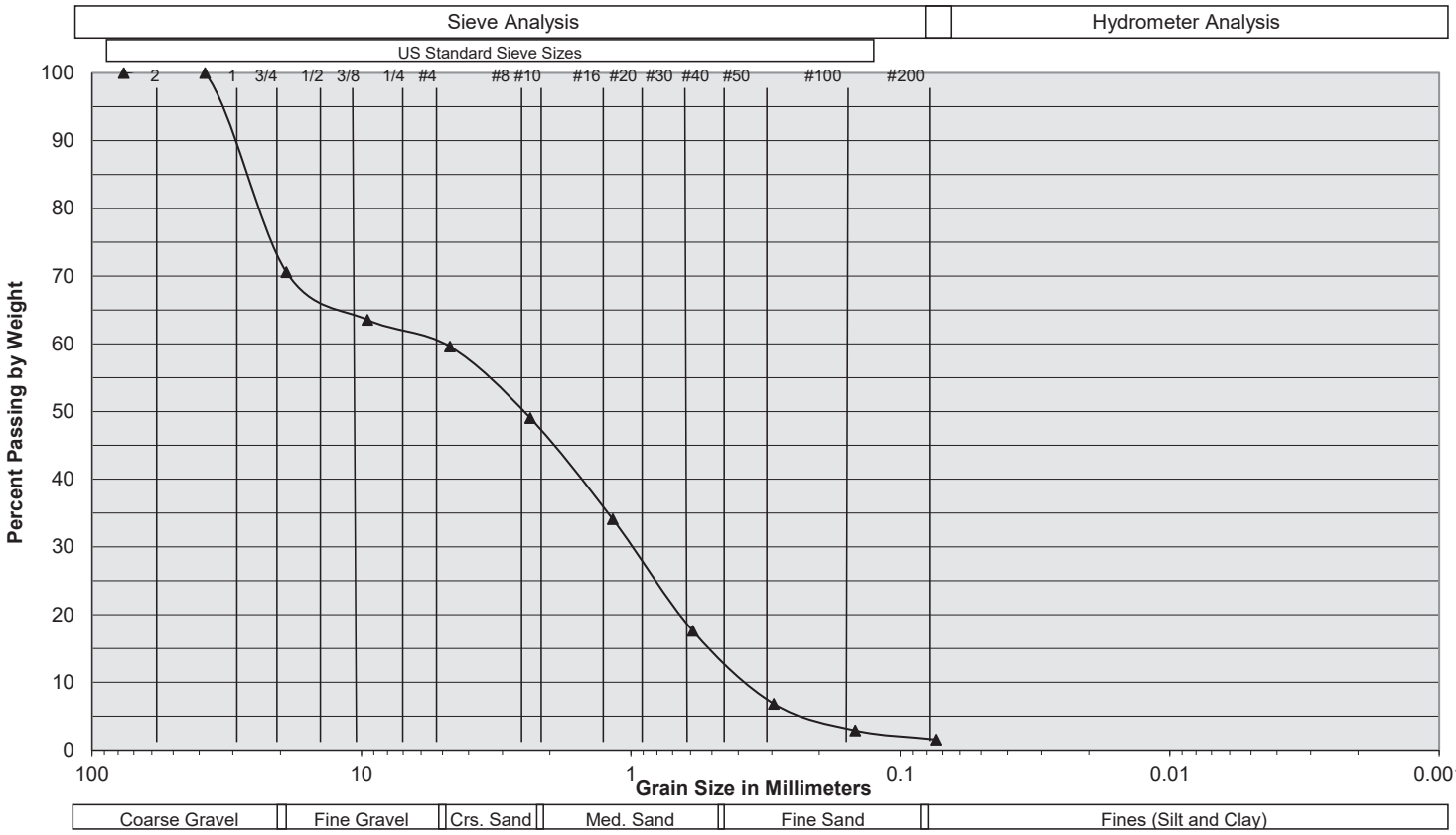
Constants

	Diameter (ft)	Area (ft^2)	Area (cm^2)
Inner	1	0.785	730
Anlr. Spac	2	2.356	2189

*Note: The infiltration rate was calculated based on current time interval

Test Interval		Time (hr)	Interval **Elapsed** (min)	Flow Readings: Inner Ring (ml)	Ring Flow (cm^3)	Annular Ring (ml)	Space Flow (cm^3)	Infiltration Rates: Inner Ring* (cm/hr)	Annular Space* (cm/hr)	Inner Ring* (in/hr)	Annular Space* (in/hr)
1	Initial	8:34 AM	5	0	4000	0	12400	65.79	67.98	25.90	26.76
	Final	8:39 AM	**5**	4000		12400					
2	Initial	8:40 AM	5	0	3800	0	12300	62.50	67.43	24.61	26.55
	Final	8:45 AM	**10**	3800		12300					
3	Initial	8:47 AM	5	0	4000	0	12200	65.79	66.88	25.90	26.33
	Final	8:52 AM	**15**	4000		12200					
4	Initial	8:54 AM	5	0	3800	0	12000	62.50	65.79	24.61	25.90
	Final	8:59 AM	**20**	3800		12000					
5	Initial	9:01 AM	5	0	3600	0	12000	59.21	65.79	23.31	25.90
	Final	9:06 AM	**25**	3600		12000					
6	Initial	9:08 AM	5	0	3300	0	11700	54.27	64.14	21.37	25.25
	Final	9:13 AM	**30**	3300		11700					
7	Initial	9:15 AM	5	0	3000	0	11200	49.34	61.40	19.43	24.17
	Final	9:20 AM	**35**	3000		11200					
8	Initial	9:21 AM	5	0	3000	0	10800	49.34	59.21	19.43	23.31
	Final	9:26 AM	**40**	3000		10800					
9	Initial	9:31 AM	5	0	3100	0	10600	50.98	58.11	20.07	22.88
	Final	9:36 AM	**45**	3100		10600					
10	Initial	9:39 AM	5	0	3000	0	10500	49.34	57.56	19.43	22.66
	Final	9:44 AM	**50**	3000		10500					
11	Initial	9:45 AM	5	0	3000	0	10700	49.34	58.66	19.43	23.09
	Final	9:50 AM	**55**	3000		10700					
12	Initial	9:52 AM	5	0	3050	0	10400	50.16	57.01	19.75	22.45
	Final	9:57 AM	**60**	3050		10400					

Grain Size Distribution

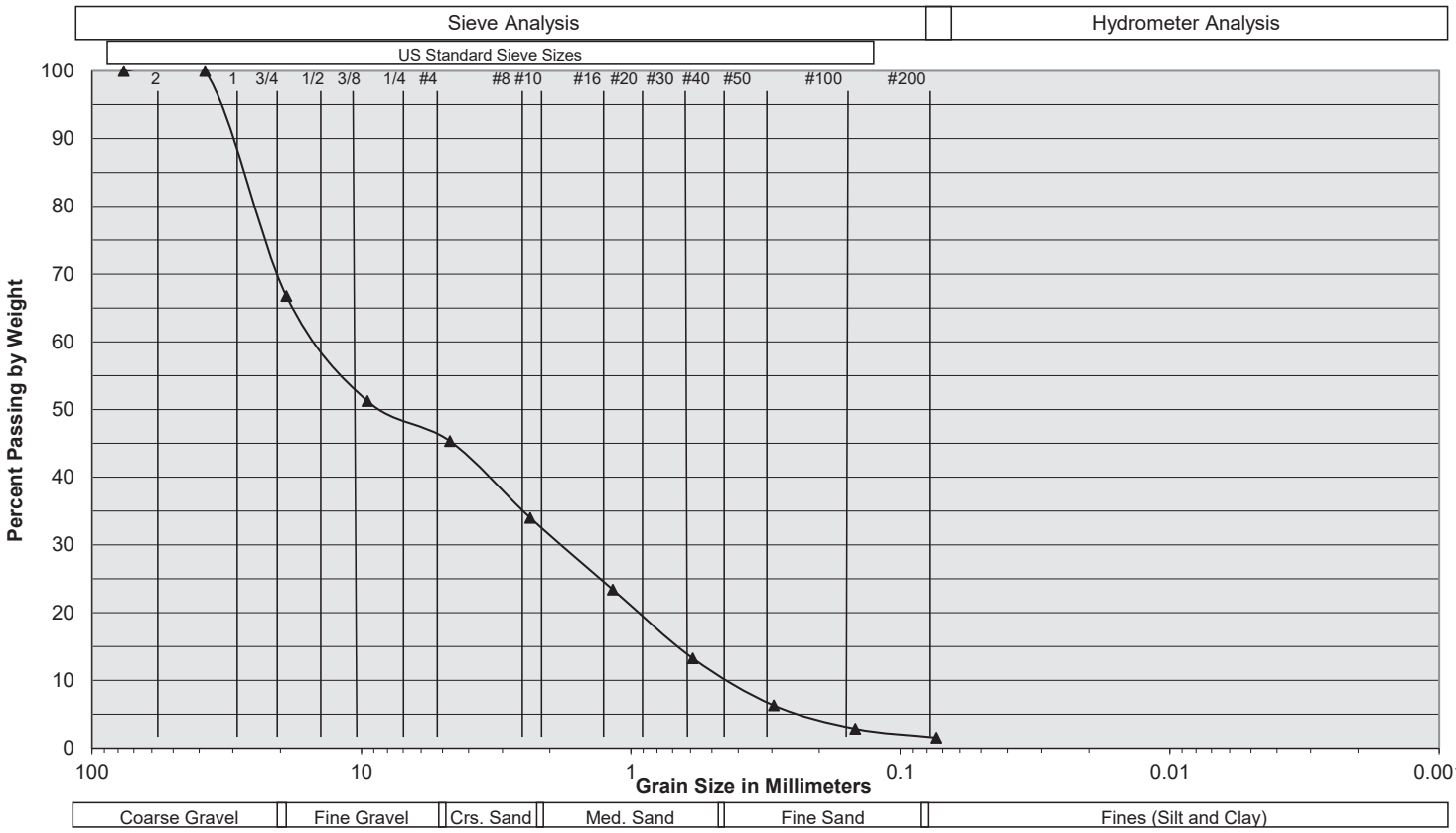


Sample Description	I-1 @ 9 to 10 feet
Soil Classification	Light Brown Gravelly fine to coarse Sand

Proposed Industrial Development
Muscoy, California
Project No. 23G113-2
PLATE C- 1

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Grain Size Distribution

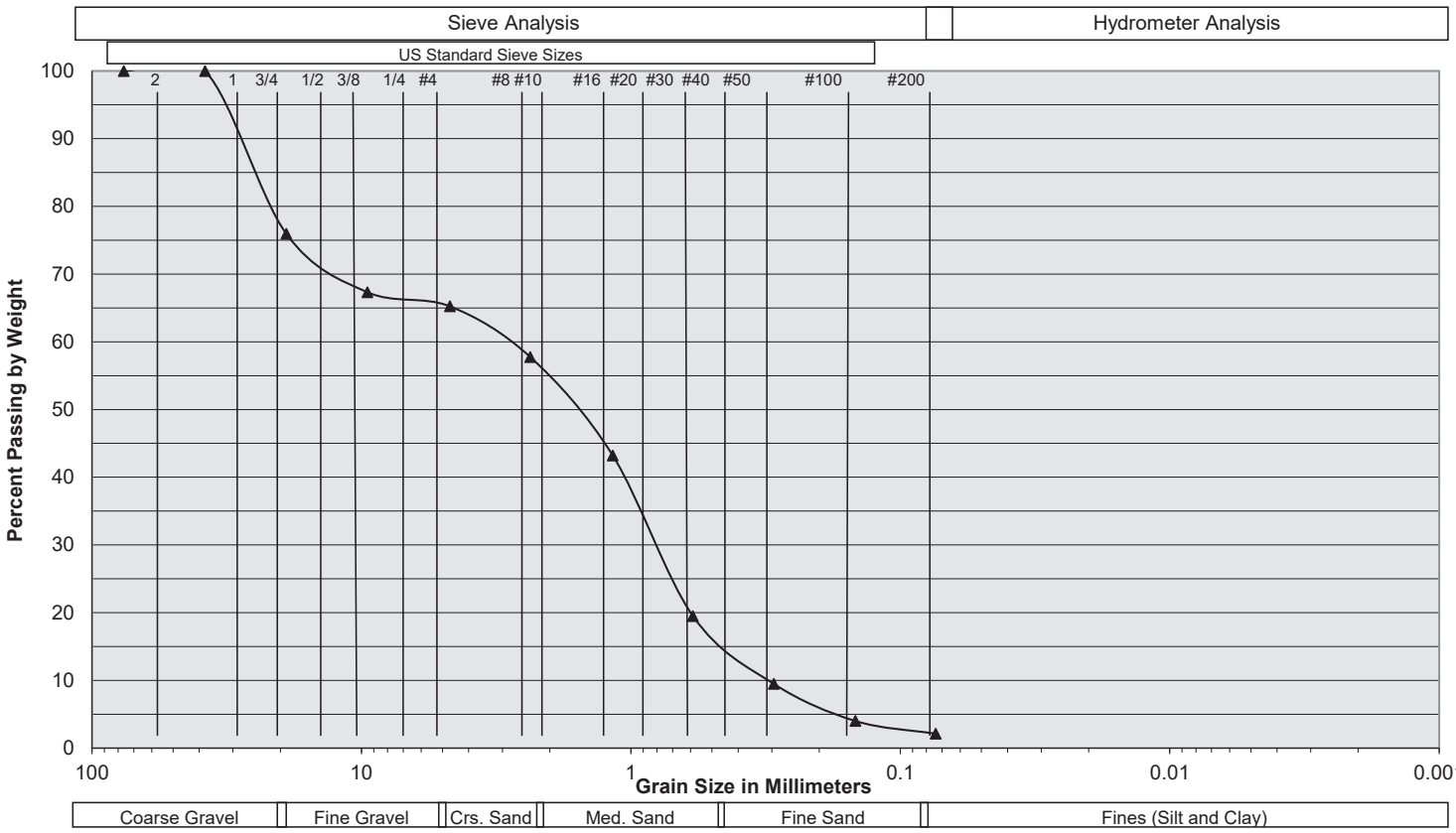


Sample Description	I-2 @ 9 to 10 feet
Soil Classification	Light Brown Sandy fine to coarse Gravel

Proposed Industrial Development
Muscoy, California
Project No. 23G113-2
PLATE C- 2

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Grain Size Distribution

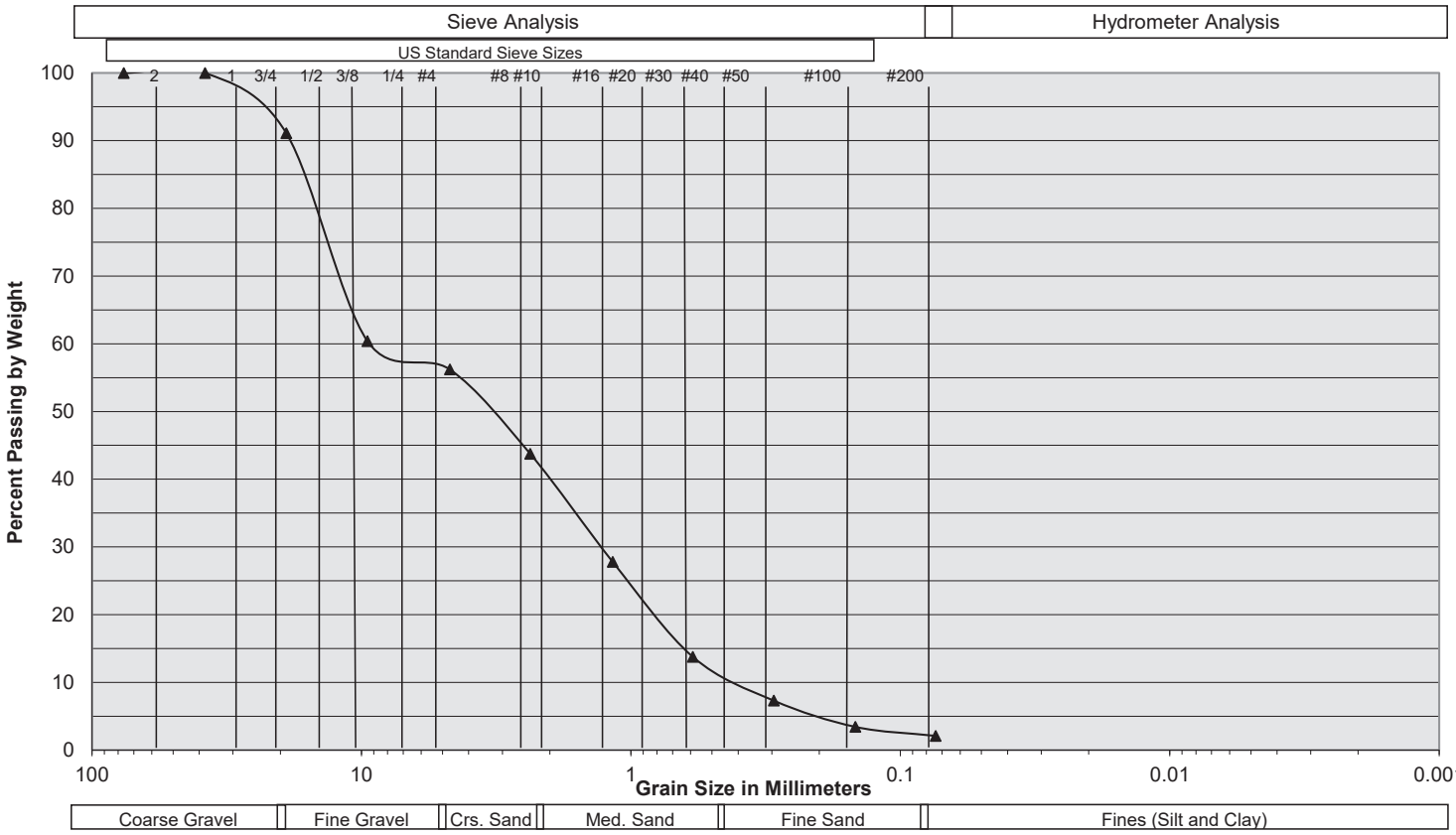


Sample Description	I-3 @ 9 to 10 feet
Soil Classification	Brown Gravelly fine to coarse Sand

Proposed Industrial Development
Muscoy, California
Project No. 23G113-2
PLATE C- 3

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Grain Size Distribution



Sample Description	I-4 @ 9 to 10 feet
Soil Classification	Brown Gravelly fine to coarse Sand

Proposed Industrial Development
Muscoy, California
Project No. 23G113-2
PLATE C- 4

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation