Exhibit D

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REPORT to MR. & MRS. COOPER 291 LAURELES GRADE CARMEL VALLEY, CALIFORNIA 93924

ON-SITE WASTEWATER TREATMENT SYSTEM FEASIBILITY STUDY for the proposed RESIDENCE LAURELES GRADE CARMEL VALLEY, CALIFORNIA 93924 A. P. N. 416-051-016-000

by

GRICE ENGINEERING, INC. 561-A BRUNKEN AVENUE SALINAS, CALIFORNIA 93901 SEPTEMBER 2023



ENGINEERING

GEOTECHNICS FOUNDATIONS SOILS

SEPTIC HYDROLOGY EARTH STRUCTURES

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File No. 7491-21.11 September 05, 2023

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Mr. & Mrs. Cooper 291 Laureles Grade Carmel Valley, California 93924

Project: Residence Laureles Grade Carmel Valley, California 93924 A. P. N. 416-051-016-000

On-Site Wastewater Treatment System Feasibility Study Subject:

Dear Mr. & Mrs. Cooper;

Pursuant to your request, we have completed the On-Site Wastewater Treatment System Feasibility Study for the proposed development.

In general, the shallow soils evaluated within the study area have suitable characteristics for dispersal of septic effluent. Those soils have characteristics indicating suitable permeability for dispersal of septic effluent by shallow trench leachfield methods. Some constraints are present such as setbacks from the site features, areas of shallow soils, property boundaries, and proposed structures.

Design recommendations are based on the site characteristics and the proposed improvements given in the following report. A preliminary plan set is provided in Appendix C detailing the site characteristics and the associated setbacks with primary, secondary and tertiary leach field alignments indicated.

References to Chapter 15.20 of the Monterey County Code, last updated on 06/13/2023 are a prefix or suffixes of "15.20".

The system should be constructed in accordance with the recommendations made herein and the Monterey County Health and Building Code. This report should be fully read and understood prior to further planning, design and especially construction.

The findings given forth in this report are applicable only to this property and may not be utilized for any other site or purpose without the written consent of GRICE ENGINEERING, INC.

Please feel free to call this office should you have any questions regarding this report.



Very truly yours, GRICE ENGINEERING, INC.

Lawrence E. Grice, P.E. R. C. E. 66857

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ON-SITE WASTEWATER TREATMENT SYSTEM FEASIBILITY STUDY for the proposed RESIDENCE LAURELES GRADE CARMEL VALLEY, CALIFORNIA 93924 A. P. N. 416-051-016-000

Introduction, Method and Scope of Investigation

The purpose of this report is to evaluate the properties of the site relative to the installation of an on-site wastewater treatment system for processing residential sewage from a single family residence.

The study consisted of evaluating the subsurface soil profile, presence or absence of groundwater and evaluation of the soils structure relative to the absorption of septic effluent. In conclusion, recommendations are given for the design of a septic system for the parcel based on the data found. A preliminary design of the system is provided in a detached set of plans.

The findings set forth in this report apply only to the above indicated area on the property and may not be utilized for any other purpose without the written consent of GRICE ENGINEERING, INC.

Site Description

The project site is located to the east of Laureles Grade at the intersection with Hidden Hills Road, in an unincorporated area of Carmel Valley located in westernmost Monterey County, California. Please refer to the Vicinity and Location Maps and the Site Map in Appendix "A" for details.

The topography of the 1.023 acre site is located on a shallow bench on the east side of a ridge aligned generally northwest to southeast. The building area descends moderately to east spanning the elevation of approximately 1202 feet in the west to 1157 feet above mean sea level (msl) in the east. The majority of the site, is covered with grass, brush and scattered trees.

The proposed development is to include a single family residence with an attached garage. A shared driveway will provide access to the residence along the southern boundary from Laureles Grade.

The residence, approximately 2,945 square ft, is to be of conventional wood construction with support provided by deep pier or spread footings. The garage is to have a slab-on-grade floor with raised wood utilized in the residential portions.

Domestic sewage from the residential development is to be processed, on-site, with the effluent discharged to the site soil. The proposed area for the leachfield installation is below the residence.

Domestic water will be provided by Cal-Am. The existing lateral and water meter is located near the northwestern corner of the parcel.

Field Investigation

Our field investigation consisted of a site inspection, along with drilling and sampling 13 exploratory bores to establish the subsurface soil profile, and obtain sufficient soil specimens to determine the soil characteristics. Drilling was accomplished by hand and continuous flight auger, with the spoil constantly examined, classified, and logged by field method in accordance with the Unified Soil Classification Chart¹, which is the basis of ASTM D2487-10. In the hand augured bores, Penetration Resistance Values were obtained through use of a Dynamic Cone Penetrometer (ASTM Special Technical Publication #399). The blow count, as measured in this method is Standard Penetration Resistance.

The site investigation incorporated all boring advanced on this parcel and that adjacent to the west. Both parcels are being developed in parallel by the client. All bores were utilized for the determination of the soils profile and structure. Bores, 1, 2, 3, 4A, 5A, 6, and 8 were utilized for percolation testing. These bores were provided with perforated casing.

For the location of each boring, please refer to the Site Map in Appendix "A."

* *In-situ* refers to the in place state of soil. *In-situ* native soils are those which are in-place as deposited by nature and have not been disturbed by man's actions in the historic past.

¹ Adopted 1952 by Corps of Engineers and Bureau of Reclamation. ASTM D2487 was developed as based on the Uniform Soils Classification Chart and System. The methods are equivalent.

Site Soils Profile

As found in the exploratory drilling, the site soils are generally consistent between each of the bores.

The surficial soils were observed to be a very dark greyish brown silty clay containing few to some amount of shale gravels. These loose soils have a granular structure and were observed to be moist to damp.

Monterey Shale is located below the surficial soils at depths ranging from one to twelve feet. The shale bedrock is considered to be moderately deformed and compact.

Complete soil characteristics and comments are reported on the boring logs at the depths observed. The bore logs are located in Appendix "B."

Ground Water Conditions

No groundwater was encountered at this site to the maximum depth of exploration, approximately 39 feet below grade (elevation -6.5 feet)

Field Evaluation for Onsite Wastewater Treatment Systems

The site lithology and topography were evaluated during the site exploration for suitability of onsite wastewater effluent dispersal. For this, thirteen bores were advanced across the site evaluating the lithology for permeability with seven bores selected for percolation testing the most preferable areas for installation of leachfield.

The permeable horizon of the lithology observed the surficial topsoil comprised of a silty clay containing few to some amounts of shale clasts ranging from sand to medium gravel. These granular soils were observed to be soft and contained a high porosity from root activity and burrowing organisms.

This topsoil was thickest along the southern portion of the parcel and extended to depths of approximately 5 feet. Deeper soils continue to contact with the shale positioned at approximately 3 to 12 feet below grade. The subsoils are permeable however tactile evaluation suggests a sufficiently lower permeability and lower application rate. These subsoils were generally only present in the central area of the parcels.

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Evaluation of the friable topsoil indicates they have a stabilized infiltration rate of 0.01 to 0.003 cubic feet per square foot per minute or a relative Stabilized Percolation Rate of 1.9 to 5.6 minutes per inch of fall. These values correlate to 126± gallons per square foot per day to 41± gallons per square foot per day. This designates these soils as having an application rate of 1.2 gallons per square foot per day et a 4.15.20.

Evaluation of the weathered surface of the shale was completed in the 2 bores. This horizon was determined to have a stabilized infiltration rate of 0.0007 cubic feet per square foot per minute or a relative Stabilized Percolation Rate of 19 minutes per inch of fall. These values correlate to $8\pm$ gallons per square foot per day. This designates these soils as having an average application rate of 0.6 gallons per square foot per day per Table 4 - 15.20.

Preferable location for the OWTS leachfield is below the residence and to the southeast. The area is of acceptable slopes, even terrain and generally free of large bushes or trees leaving less encumbered area for installation of standard leachfield.

Planning of the site improvements and installation of the OWTS leachfields should allow sufficient room on the parcel to accommodate at least one reserve area for the installation of future repair leachfields. All leachfields should be provided with an inspection riser to allow for monitoring of effluent levels.

CONCLUSIONS AND RECOMMENDATIONS

Septic System Recommendations

In general, this study indicates that the shallow site soil located in the study area generally have acceptable rates of percolation suitable for dispersal of septic effluent.

The recommended sewage disposal system configuration should be a septic tank, associated piping and shallow leach fields sized as discussed in this report. The construction and operation of the system should conform to the recommendations given in this report and the requirements set forth by the County of Monterey.

Nitrogen Loading Balance

The proposed residence is determined to provide a maximum daily occupancy of 4 people, who are considered to produce 40 grams of nitrogen per day, per the Table 2 - 15.20. The parcel area as determined by the Project Surveyor is 1.023 acres. The Chapter 15.20 allows an application of 40 grams of nitrogen per acre, per day, therefore a maximum of 40.92 grams of nitrogen can be applied per day on the parcel.

This indicates that the proposed improvements will apply less than the allowed nitrogen.

Groundwater Recharge

The project site is not within a Groundwater Recharge Area as defined in Chapter 15.20. Leachfields installed within groundwater recharge areas are limited to a maximum effective depth of 5 feet below grade.

Lithology, Percolation Rate and Groundwater Setback

As discussed the shallow topsoil to approximate depths of 5 feet is considered suitable for infiltration of septic effluent. The estimated percolation rate of these shallow soil averages to 3.1 minutes per inch of fall and an application rate of 1.2 gallons per square foot per day.

No groundwater was observed in any of the exploratory bores. The greatest depth of exploration is approximately 39 feet below grade. Based on the noted percolation rate the setback to groundwater is 20 feet per Table 4 - 15.20.

Suitability of Terrain

The terrain of the proposed leachfield area is of smooth contour. Slopes across the proposed area range from approximately 10% to 30%. In general, Chapter 15.20 allows leachfields to be placed on slopes up to 30% provided lithology or other site conditions which would increase instability or surfacing is not present.

Trees are generally of broad spacing and the undergrowth is typically light and consists of small brush and grasses.

The installation of the leachfields will need to maintain a 10-foot set back from all trees with a trunk diameter greater than 5 inches at a height of 2 feet from grades. Consideration should be given to the type of tree and it's eventual growth.

The groundwater monitoring, advanced to an approximate depth of 39 feet below grade. The bore did not collect free water during the study period.

Daily Discharge Rate and Septic Tank Sizing

The proposed residence contains 3 bedrooms.

As listed in Chapter 15.20, a residence containing this number of bedrooms is considered to produce 375 gallons of sewage per day. An appropriate septic tank would provide a capacity of 1,000 gallons as listed in the Table 6-15.20.

Should the kitchen appliances include a garbage disposal unit it is recommended that an additional capacity of 500 gal. be added to the septic tank.

As discussed the installed tank size can be increased to provide for future additions.

Septic tanks should be installed to provide reasonable access after completion of construction. The code requires installation of an effluent screen in the discharge line.

Leachfields

As discussed, the shallow soils located in the study area are recommended for installation of leachfields and are considered to have an Application Rate of 1.2 gallons per square foot per day.

These soils are of variable thickness across the parcel. In general only sufficient depth exists along the southern area extending from the approximate middle of the parcel to the easement along the southern boundary. Design of the proposed residence must maintain these soils in a natural state otherwise it will most likely be necessary to design an alternative OWTS.

At this time, the maximum daily rate of effluent being generated is 375 gallons. Dividing this value by the application rate indicates an individual leach field should provide 312.5 square feet of effective wall area.

The type of leachfield should be a shallow trench. As listed in Chapter 15.20 the maximum allowable effective wall area per foot of trench is 4 square feet for new systems and a minimum width is listed as 1.5 feet.

An efficient trench cross section would be comprised of an effective depth of 2 feet and width of 1.5 feet providing the maximum effective wall area of 4 square feet per linear foot of trench. Therefore, a complete leachfield will need to be comprised of 78.125 linear feet of trench for the currently proposed development.

The effective depth of each trench should be within the upper 5 feet of the natural soil horizon and preferably as shallow as possible. The top of the effective depth can be positioned at the natural grade with fill providing the required cover depth of 17 inches.

Typically the maximum length of a leachfield is 100 feet from the point of delivery of the effluent. Design of the leachfields can position the effluent delivery to the middle of the leachfields thus allowing a total length of 200 feet.

At least one observation riser should be provided centrally in each leachfield and extend to an approximately 1 foot below the bottom of the field to allow for monitoring of the effluent level for the full depth of the system.

It is recommended that a Secondary System be installed at the same time as the Primary System. If possible, the area for the third system should be designated at that time. The area for the third system should be that which will be most accessible after construction. A diversion valve(s) shall be installed to permit alternating between the systems.

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Installation of multiple leachfields is generally considered beneficial. Allowing leachfields to rest for periods of six months to a year, allows for degradation of accumulating biomass, as well as dessication of the soils around the field. This process helps to recover the soils' permeability. Additionally, should the leach field in use fail, an alternate field is available.

In Chapter 15.20, Section 5.4, are the requirements for the installation of a primary and secondary fields as well as designation of reserve areas for repairs or upgrades. The requirements vary depending on the creation date of the parcel.

Under the OWTS-2018 for new construction on lots created prior to June 26, 1981, it is required to install two complete leachfields. For lots created after that date, a tertiary reserve area is also to be provided.

The Primary and Secondary Leachfield Systems are to be connected with a diversion valve(s) to permit alternating between the systems.

The OWTS-2018 requires the installation of tracing wire along the length of all distribution pipes and around inspection ports. It is recommended that the tracing wire be laid along all sewer and effluent lines as well as around all buried tanks or associated valves or distribution boxes.

Special Conditions

Since the proper performance of a septic system depends on many variables, it is recommended that the site development plan allows maximum leachfield areas. This report and recommendations should remain available for future installation of additional leachfields.

It is also recommended that the secondary leachfields be constructed at the time of the initial installation. If this is done, it should be connected by a valve such that leachate may be directed to either system for periods ranging from 4 to 8 months.

General

All installation requirements not specifically mentioned herein should be made in accordance with the requirements set forth by the Monterey County Health Department. The above septic system recommendations are based on the parameters stated and the subsurface soils observed during our investigation, as well as standard practice set forth in the manual "Septic Tank Systems for

Private Homes", available from the Monterey County Health Department -Environmental Health Division, and the manual "Septic Tank Practice", as published by the United States Health Department. Should these factors change or soil conditions not shown be encountered, this office should be notified such that additional requirements may be made, if necessary.

As stated previously, the performance of a septic system depends on many variables including volume of effluent, performance of a septic tank, concentration of leachate, and soil type and density. Consequently, design is based on empirical theory, i.e., successful past experience and collected field data. However, since control of all these elements is impossible, the recommendations stated herein are made to the best of our ability to anticipate these variables.

Inspection of Work

It is recommended that all site work be inspected and tested by this firm during the performance of work to establish compliance with these recommendations:

NOTIFY:	GRICE ENGINEERING, INC.	SALINAS	(831) 422-9619
	561-A Brunken Avenue	MONTEREY	(831) 375-1198
	Salinas, California 93901		

EMAIL ADDRESS: griceengineering@sbcglobal.net

A minimum of one working day prior to commencement of work so that scheduling for testing and inspections can be made.

LIMITATIONS AND UNIFORMITY OF CONDITIONS

The recommendations of this report are based on our understanding of the project as represented by the plans, and the assumption that the soil conditions do not deviate from those represented in this site soil investigation. Therefore, should any variations or undesirable conditions be encountered during construction, or if the actual project will differ from that planned at this time, GRICE ENGINEERING, INC., should be notified and provided the opportunity to make addendum recommendations if required.

NOTIFY: GRICE ENGINEERING, INC. SALINAS (831) 422-9619 561-A Brunken Avenue MONTEREY (831) 375-1198 Salinas, California 93901

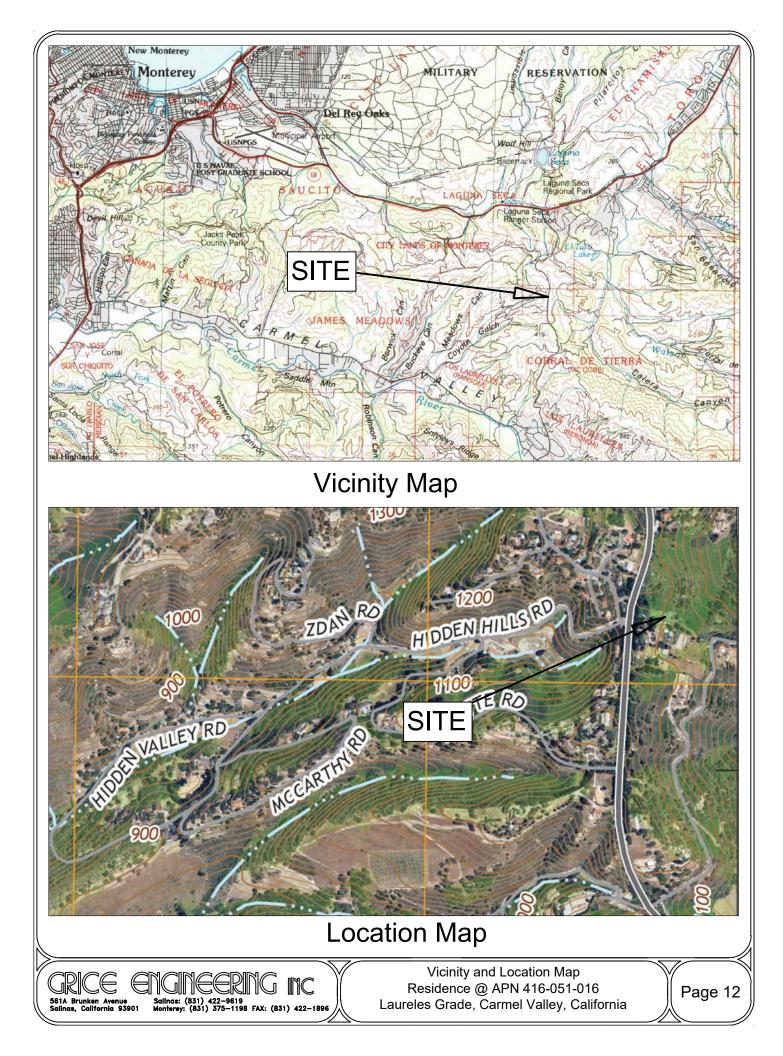
EMAIL ADDRESS: griceengineering@sbcglobal.net

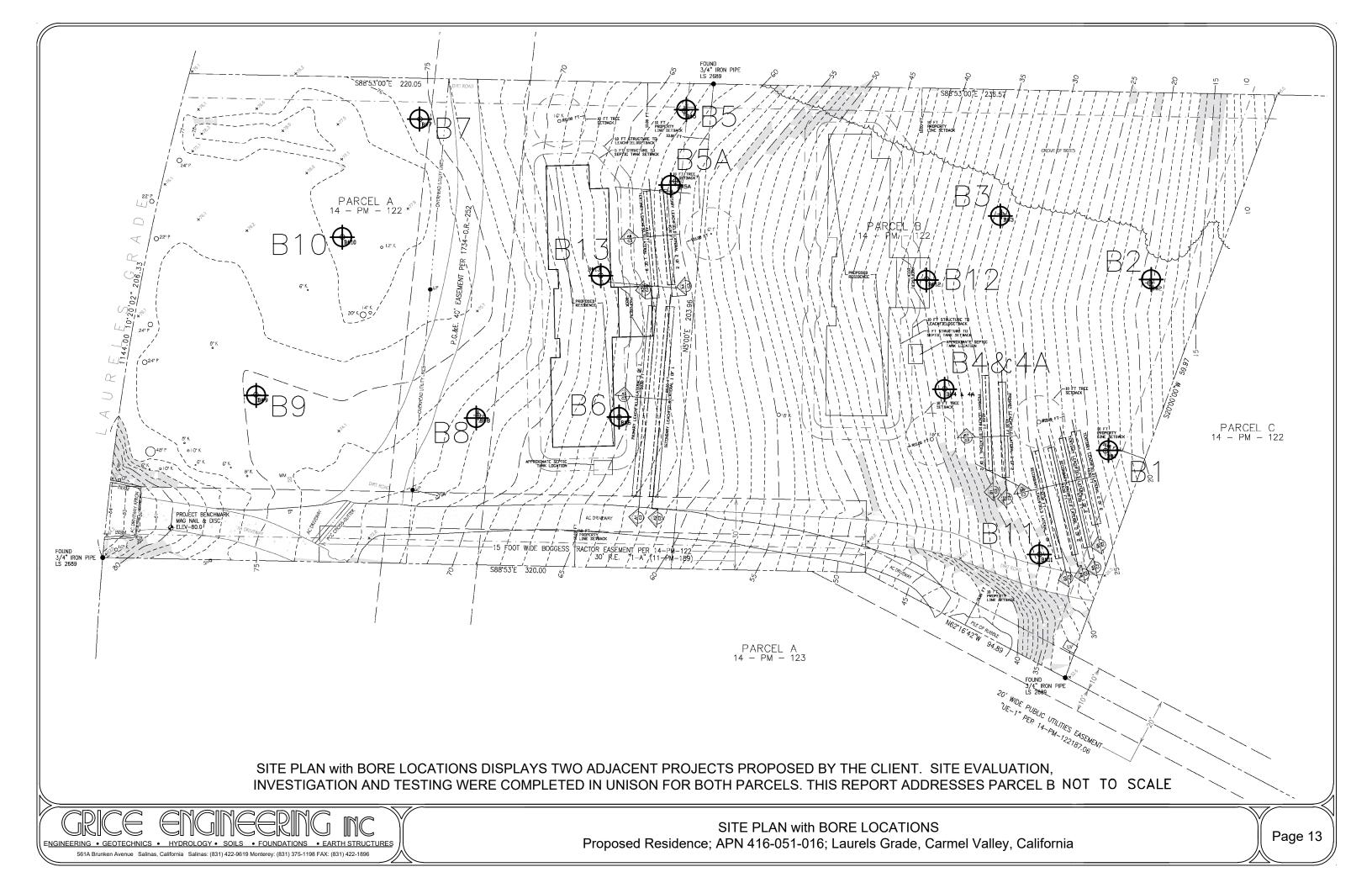
This report is issued with admonishment to the owner and to his representative(s), that the information contained herein should be made available to the responsible project personnel including the architects, engineers, and contractors for the project. The recommendations contained herein should be incorporated into the plans, the specifications, and the final work.

It is requested that GRICE ENGINEERING, INC., be retained to review the project grading and foundation plans to ensure compliance with these recommendations. Further, it is the position of GRICE ENGINEERING, INC., that work performed without our knowledge and supervision, or the direction and supervision of a project responsible professional soil's engineer renders this report invalid.

It is our opinion the findings of this report are **valid** as of the **present date**, <u>however</u>, changes in the **Codes and Requirements** can occur and change the recommendations given within this report concerning the property. In addition changes in the conditions of a property can occur with the passage of time, due either to natural processes or to the works of man and may affect this property. In addition, changes in **standards** may occur as a result of legislation, or the broadening of knowledge, and these changes may require re-evaluation of the conditions stated herein. Accordingly, the findings of this report may be invalidated wholly, or partially, by changes beyond our control. Therefore, this report is subject to review and should not be relied upon after a period of <u>three</u> <u>years</u>.

APPENDIX A





APPENDIX B

13.50 10.00

Boring No. 1 January 25, 2023 Field BlowCou Standard Per per 6 inch Pen. scription confined oisture phesion aldr nbol ensity nger ear ě 23.50 0.00 (CUTTINGS) Very dark greyish brown | clayey SILT; low-medium plasticity; friable | few: clasts; fine sand to 1"+ gravel; subangular; Monterey Shale | very damp; soft ML 23.00 0.50 22.50 1.00 _ 22.00 1.50 _ ML-CL (CUTTINGS) Very dark greyish brown | silty CLAY; low-medium plasticity; friable | few: clasts; fine sand to 1"+ gravel; subangular; Monterey Shale | very damp; soft 21.50 2.00 21.00 2.50 _ _ 20.50 3.00 _ Color paling some and clast content increasing some, very friable structure 20.00 3.50 19.50 4.00 _ _ 19.00 4.50 _ Gravel content increasing, could be approaching Monterey Shale End of bore at 4.75 feet. No free water encountered. 18.50 5.00 Bore lined for percolation testing 18.00 5.50 _ 17.50 6.00 _ _ 17.00 6.50 _ 16.50 7.00 _ 16.00 7.50 15.50 8.00 _ 15.00 8.50 _ . 14.50 9.00 _ _ 14.00 9.50 _ -

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		g No.		1 12								
	Depth	Symbol	Sample	Field BlowCount per 6 inch	Standard Pen. Burmister	Description	Auger Pen.	Density	Moisture	Unconfined	Cohesion	Shear
19.25	0.00					- (CUTTINGS) Very dark greyish brown clayey SILT; low-medium plasticity; friable few: clasts; fine sand to 1"+ gravel; subangular;						
40.75	0.50					Monterey Shale very damp; soft						1-
10.75	0.50					-		+				+ -
18.25	1.00				L = =		t = =	±==:	1			1_
								+				+ -
						(CUTTINGS) Very dark greyish brown CLASTS; fine sand to 2" gravel; subangular; Monterey Shale little to some: silty clay; low-medium	==	1 1				-
17.75	1.50	ML-CL				subangular; Monterey Shale little to some: silty clay; low-medium plasticity; friable very damp; loose.	+	+				+ -
						······································	==	1	1			1
17.25	2.00						+					+ -
												1-
							+	+	+			+ -
16.75	2.50											
							+	+				
16.25	3.00						[-				
10.25	3.00					Color paling some and clast content increasing some, very friable structure	+					+ -
												Į –
15.75	3.50						+	+				<u>+</u> _
		ROCK				Cuttings and Drilling texture indicate Monterey Shale		+				+ -
						End of bore at 3.75 feet. No free water encountered. Bore lined for percolation testing	t = =	1	1			1 -
15.25	4.00					Bore lined for percolation testing						Į –
							1	1	1			1 -
14 75	4.50						+	+				+ -
11.70							==	1	1			1 -
							+	+	+			+ -
14.25	5.00						<u>+</u>	1	1			1 -
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13.75	5.50						+	+				+ -
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13.25	6.00						+	+	+			+ -
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							t = =	1	1			1 -
12.75	6.50						+	+				+ -
							==	1 :	1			1 -
12 25	7.00						+					+ -
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11.25	8.00						+	+				+ -
10.75	8.50							<u>+</u> :				† –
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10.25	9.00						+	+	+			+ -
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975	9.50						+	+	+			+ -
0.10	·	•					t	<u>+</u>	1			<u>†</u> –
							+	+	+			+ -
0.05	10.00						+	+	+			+ -

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						January 25, 2023		1				
	Depth	Symbol	Sample	Field BlowCount per 6 inch	Standard Pen. Burmister	Description	Auger Pen.	Density	Moisture	Unconfined	Cohesion	Shear
33.50	0.00					(CUTTINGS) Very dark greyish brown clayey SILT; low-medium					+	
						plasticity; friable little-some: clasts; fine sand to 1"+ gravel; subangular; Monterey Shale very damp; soft					+	+ -
33.00	0.50					wonercy on ale I very damp, son						1 -
											+	+ -
	-						+				+	+ -
32.50	1.00						+				+	+ -
							t					1-
							[E	[1-
32.00	1.50										+	+ -
52.00	1.50	+									+	+ -
												<u>†</u> –
												1-
31.50	2.00	ROCK										+ -
					- /	(CUTTINGS) MONTEREY SHALE; compact; medium hard; moist.	+				+	+ -
					- 🔨	·	+				+	+ -
31.00	2.50					Three adjacent bores ending on-in Monterey Shale						11
						End of deepest bore at 2.0 feet. No free water encountered.						4 -
						Deepest bore lined for percolation testing, remainder backfilled.	+				+	+ -
30 50	3.00						+				+	+ -
												<u>†</u> –
							[]					1-
	2 50											+ -
50.00	3.50	+					+				+	+ -
							+				+	+ -
												1 -
29.50	4.00											+ -
												+ -
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29.00	4.50						t					1-
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28 50	5.00										+	+ -
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	E E0.											+ -
28.00	5.50	+					+				+	+ -
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												11
27.50	6.00											4 -
							+				+	+ -
							+				+	+ -
27.00	6.50						+					<u>†</u> –
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							+	+	+		+	+ -
26.50	7.00						+	+			+	+ -
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26.00	7 60						+				+	+ -
20.00	7.50	+					+	+	+		+	+ -
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					222		ļ			1223	+	1 -
25.50	8.00	+					+	+			+	+ -
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25.00	8.50										[]]]	1-
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24.50	9.00						+		+		+	+ -
		<u> </u>					t	1			1	1 -
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24.00	0.50						+	+			+	+ -
24.00	9.50	+					+	+	+		+	+ -
		1					+	+	+		+	+ -

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	Depth	Symbol	Sample	Field BlowCount per 6 inch	Standard Pen. Burmister		Auger Pen.	Density	Moisture	Unconfined	Cohesion	Shear
38.50		ML				(CUTTINGS) Dark brown SAND; fine to medium fine trace-few: silt; low plasticity; friable damp; loose.						
38.00	0.50					BORE DAMAGED-COVERED BY BRUSH CLEARING OF SITE DRILL NEW BORE FOR PERCOLATION TESTING - SEE LOG B4A						
37.50	1.00					Slight increase in clay content with depth						† – – –
22.00	1.50					(CUTTINGS) Very dark greyish brown clayey SILT; low-medium						+ - + -
57.00	1.50					plasticity; friable few to little: clasts; fine sand to 1"+ gravel; subangular; Monterey Shale very damp; soft						-
36.50	2.00											
26.00	2.50											
50.00	2.50											-
35.50	3.00					Color paling some and clast content increasing some, very friable structure						
35.00	3.50					Some decrease in clast amount with depth						
												† -
34.50	4.00											
34.00	4.50											
		• 										† -
33.50	5.00		 	 		End of bore at 5.0 feet. No free water encountered. Bore lined for percolation testing						+ - -
33.00	5.50					Bore lost as area mowed during interval between drilling and perc testing						_ _
2250	6.00		 									‡ _
32.30	0.00 <u>-</u>											-
32.00	6.50											+ -
31 50	7.00											
		•	 	 	 			+		 	 	† - -
31.00	7.50											-
30.50	8.00											_ _
30.00	8.50		 	 								- -
29.50	9.00											+ -
												_ _
29.00	9.50		 	 				+		 	 	† - - -
	10.00											+ -

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	Boring	g No.	4 A		-	January 25, 2023						
Elev	Depth	Symbol	Sample	Field BlowCount per 6 inch	Standard Pen. Burmister	Description	vuger Pen.	Density	Aoisture	Jnconfined	Cohesion	Shear
38.50	0.00	<i>"</i>	0			CUTTINGS) Dark brown SAND; fine to medium fine trace-few: silt; low	4		~		0	0
		ML				plasticity; friable damp; loose.						
38.00	0.50					-						+
						BORE DAMAGED-COVERED BY BRUSH CLEARING OF SITE						1
						DRILL NEW BORE FOR PERCOLATION TESTING - REPLACMENT OF E	SORE 4					+
37.50	1.00					Slight increase in clay content with depth						+
						Same						1
												+
37.00	1.50	ML-CL				(CUTTINGS) Very dark greyish brown clayey SILT; low-medium plasticity; friable few to little: clasts; fine sand to 1"+ gravel; subangular;					· – – ·	+
						Monterey Shale very damp; soft						1
						-						+
36.50	2.00											1
												I
												+
36.00	2.50	 										1
												+
							+	+				+
35.50	3.00	L				About the same as bore 4						1
						Color paling some and clast content increasing some, very friable structure Some decrease in clast amount with depth						+
												+
35.00	3.50											1
												+
												+
34.50	4.00											I
											. – – .	+
												1
34.00	4.50											
												+
												1
33.50	5.00											+
						Increase in gravel - Possibly approaching Monterey Shale						+
22.00	5 50 ^{°°°}					End of bore at 5.25 feet. No free water encountered.						+
33.00	5.50	+				Bore lined for percolation testing Original Bore lost as area mowed during interval between drilling and perc	testina				· – – ·	+
												1
32 50	6.00											+
02.00	0.00	+										+
												I
32.00	6.50										. – – .	+
		t										1
												+
31.50	7.00	<u> </u>			L		t ·					<u>†</u>
												+
								+				+
31.00	7.50	<u> </u>				+	t :	t				1
												+
							+	+				+
30.50	8.00	F			[]]							1
								+				+
		L				L						1
30.00	8.50	+										+
								+				+
_		<u> </u>										1
29.50	9.00											+
								+				+
00.0-		F = = =			[]]							1
29.00	9.50	+										+
					<u> </u>		<u> </u> ·					<u> </u>
20 50	10.00											+
28.50	10.00				L	L	L	L	l			1

Page 20

Boring No. 5 January 25, 2023 Field BlowCount per 6 inch Standard Pen. Burmister scription Pen. oisture mple confir Isity lodu nger 62.50 (CUTTINGS) Very dark greyish brown | clayey SILT; low-medium plasticity; friable | few to little: clasts; fine sand to 1"+ gravel; subangular; Monterey Shale | very damp; soft ML 62.00 0.50 _ BORE DAMAGED-COVERED BY BRUSH CLEARING OF SITE 61.50 1.00 DRILL NEW BORE FOR PERCOLATION TESTING - SEE LOG B5A 61.00 1.50 _ 60.50 2.00 Amount of clasts increasing with depth _ 60.00 2.50 _ 59.50 3.00 Encountering in-situ Monterey Shale End of bore at 3.25 feet. No free water encountered Bore lined for percolation testing 59.00 3.50 _ -58.50 4.00 _ 58.00 4.50 _ -57.50 5.00 _ _ 57.00 5.50 56.50 6.00 56.00 6.50 55.50 7.00 _ 55.00 7.50 _ -54.50 8.00 _ . 54.00 8.50 53.50 9.00 53.00 9.50 52.50 10.00

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	Boring No. 5A January 25, 2023					1	1	1	1	1	1	
	Depth	Symbol	Sample	Field BlowCount per 6 inch	Standard Pen. Burmister	Description	Auger Pen.	Density	Moisture	Unconfined	Cohesion	Shear
60.50	0.00					(CUTTINGS) Very dark greyish brown clayey SILT; low-medium						+ -
						plasticity; friable few to little: clasts; fine sand to 1"+ gravel; subangular; Monterey Shale very damp; soft						1 - 1
60.00	0.50											+ -
							+				+	+ -
						BORE DAMAGED-COVERED BY BRUSH CLEARING OF SITE						1 -
59.50	1.00					DRILL NEW BORE FOR PERCOLATION TESTING - REPLACMENT OF E	SORE					+ -
												1 -
59.00	1.50											
00.00												1-
58.50	2.00					Amount of clasts increasing with depth	+					† -
												1-
							+				+	+ -
58.00	2.50						[]					1 -
												+ -
		SM-ML					+				+	+ -
57.50	3.00											1-
						More of a silty sand with gravel for the most part, loose-medium dense	+				+	+ -
												12
57.00	3.50											+ -
							+				+	+ -
	4 00											1-
50.50	4.00						+				+	+ -
						Appear to be on top of Monterey Shale	[]				[]	1-
56.00	4.50					End of bore at 4.25 feet. No free water encountered. Bore lined for percolation testing	+				+	+ -
00.00	4.00											1 -
												Į –
55.50	5.00						+					+ -
												1-
							+				+	+ -
55.00	5.50											1-
							+				+	+ -
54.50	6.00						[[1-
							+				+	+ -
												1-
54.00	6.50											+ -
											t	1 -
E2 E0	7.00											Į –
55.50	7.00					+	+		+		+	+ -
							[]	[]	[[]	1-
53.00	7.50						+	+			+	+ -
												1_
												+ -
52.50	8.00						t				t	1 -
				1222			+ :				:	↓ Ξ
							+		+		+	+ -
52.00	8.50						[]		[[]	1 -
							+	+			+	+ -
							t				t	1-
51.50	9.00						+				+	+ -
							+	+	+		+	+ -
E4 00	0.50						[[Į –
00.rc	9.50						+	+	+		+	+ -
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				1 12	L .							
	Depth	Symbol	Sample	Field BlowCount per 6 inch	Standard Pen. Burmister	Description	Auger Pen.	Density	Moisture	Unconfined	Cohesion	
65.50	0.00					(CUTTINGS) Very dark greyish brown clayey SILT; low-medium		+	+			4.
		ML				plasticity; friable few to little: clasts; fine sand to 1"+ gravel; subangular;		+	+			+
65.00	0.50					Monterey Shale very damp; soft	+	+	+			+
												1
							+	+	+			+
64.50	1.00							+	+			+
							t	1 :	1			1
								+				1
64.00	1.50						+	+	+			+
0 1.00							+	+	+			1
												1
63.50	2 00						+	+	+			+
55.50	2.00							+	+			+
								1	1			1
	a							+	+			1
63.00	2.50							+	+			+
							+	+	+			†
									1			1
62.50	3.00							+				+
	ċ	L-SC-SI	v			(CUTTINGS) Very dark greyish brown sitty CLAY; low-medium plasticity; friable few to some (varies in layers): clasts; fine sand to 1"+ gravel;	+	+	+			+
			1			subangular; Monterey Shale very damp; soft	+	+	+			1
62.00	3.50								1			1
							+	+	+			+
							+	+	+			+
61.50	4.00						t = =	1 :	1			1
								+	+			1
							+	+	+			+
61.00	4.50						+	+	+			+
									1			1
								+	+			+
60.50	5.00						+	+	+			+
								1 :				1
						Refusal to hand augur	+	+	+			+
60.00	5 50					End of bore at 525 feet. No free water encountered.	+	+	+			+
00.00	0.00					Bore lined for percolation testing	+	+	+			1
									1			1
59.50	6.00						+	+	+			+
55.50	0.00	+					+	+	+			+
								1 :				1
	c co · ·							+	+			+
59.00	6.50						+	+	+			+
							t	<u> </u>	1			1
	7 00											1
58.50	1.00						+	+	+			+
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58.00	7.50						+	+	+			\downarrow
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57.50	8.00						ļ	+				1
							+	+	+			+
							+	+	+			†
57.00	8.50						[]	I	1 1			1
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							+	+ 1	+			+
56.50	9.00	L					t	1 '	1			1
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							+	+	+			+
56.00	9.50						+	+ 1	+			+
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	10.00	L – – –					+	+	+	L		1

2 Residential Lots; Cooper; Laureles Grade, APN's 416-051-015 & 016 January 25, 2023

65.50 10.00

Boring No. 7 January 25, 2023 Standard Pen. Burmister Field BlowCour per 6 inch vuger Pen. confined scriptio phesion loisture Density alar 75.50 (CUTTINGS) Very dark greyish brown | clayey SILT; low-medium plasticity; friable | little-some: clasts; fine sand to 1"+ gravel; subangular; Monterey Shale | very damp; soft ML 75.00 0.50 74.50 1.00 ROCK 74.00 1.50 73.50 2.00 ROCK (CUTTINGS) MONTEREY SHALE; compact; medium hard; moist. 73.00 2.50 End of bore at 2.5 feet. No free water encountered. Bore backfilled. 72.50 3.00 _ 72.00 3.50 71.50 4.00 71.00 4.50 70.50 5.00 70.00 5.50 69.50 6.00 69.00 6.50 68.50 7.00 68.00 7.50 67.50 8.00 67.00 8.50 _ _ 66.50 9.00 _ 66.00 9.50

2 Residential Lots; Cooper; Laureles Grade, APN's 416-051-015 & 016

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62.25 10.00

Boring No. 8 January 25, 2023 Field BlowCount per 6 inch Standard Pen. Burmister vuger Pen. scription nconfined Aoisture phesion ensity nple lođr oth lear 72.25 0.00 (CUTTINGS) Very dark greyish brown | clayey SILT; low-medium plasticity; friable | little-some: clasts; fine sand to 1"+ gravel; subangular; Monterey Shale | very damp; soft ML 71.75 0.50 71.25 1.00 _ 70.75 1.50 _ 70.25 2.00 _ 69.75 2.50 ROCH (CUTTINGS) MONTEREY SHALE; compact; medium hard; moist. End of bore at 2.5 feet. No free water encountered. Bore lined for percolation testing. 69.25 3.00 _ -68.75 3.50 _ . 68.25 4.00 _ . 67.75 4.50 _ . _ . 67.25 5.00 _ 66.75 5.50 66.25 6.00 65.75 6.50 65.25 7.00 _ _ . 64.75 7.50 _ -64.25 8.00 _ _ . 63.75 8.50 _ 63.25 9.00 62.75 9.50

	Boring	g No.	9		·	January 25, 2023						
Elev	Depth	Symbol	Sample	Field BlowCount per 6 inch	Standard Pen. Burmister	Description	Auger Pen.	Density	Moisture	Jnconfined	Cohesion	Shear
74.90	0.00	L				(CUTTINGS) Very dark greyish brown clayey SILT; low-medium						
		ML				plasticity; friable little-some: clasts; fine sand to 1"+ gravel; subangular; Monterey Shale very damp; soft		+				
74.40	0.50					- Monterey Shale Very damp, Solt						
						(CUTTINGS) MONTEREY SHALE; compact; medium hard; moist.						
73.90	1.00	ROCK				(COTTINGS) WONTERET STREE, COMpact, medium haid, moist.		+				
		ROOK				End of bore at 1.25 feet. No free water encountered.		+				
70.40	4 50					Bore backfilled.						
/3.40	1.50							+				
72 90	2.00							+			+	
		•										
72.40	2.50							+				
											+	
71.90	3.00											
							+	+				
71.40	3.50							I				[]
											+	
								1				
70.90	4.00											
70.40	4.50											
70.40	4.50	+						+				
69.90	5.00											
								+				
69.40	5.50							1				
					L							
68.90	6.00											
											+	
68.40	6.50							+			+	
67 90	7.00											
07.00		•			<u> </u>							
67.40	7.50											
								+				
66.90	8.00							1				
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							+	+				
66.40	8.50	+					+	+				
						+	+	+				
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65.90	9.00	+					+	+			+	
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65 40	9.50						+	+				
00.40	0.00	+					+	+				
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64 90	10.00						+	+			+	
21.00		•					±	+	+			۰ – –

2 Residential Lots; Cooper; Laureles Grade, APN's 416-051-015 & 016 Boring No. 9

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	Boring	a No.				January 25, 2023						
Elev	Depth	Symbol	Sample	Field BlowCount per 6 inch	Standard Pen. Burmister	Description	Auger Pen.	Density	Moisture	Unconfined	Cohesion	Shear
77.25	0.00					CUTTINGS) Very dark greyish brown clayey SILT; low-medium						,
		ML				plasticity; friable little-some: clasts; fine sand to 1"+ gravel; subangular;						
76.75	0.50					Monterey Shale very damp; soft					t	
						1						i
											+	
76.25	1.00					(CUTTINGS) MONTEREY SHALE; compact; medium hard; moist.						(= =
		ROCK				End of bore at 1.25 feet. No free water encountered.						
						Bore backfilled.					+	
75.75	1.50											í = =
											+	
75.25	2.00											i
											+	
74.75	2.50										[]	i = =
											+	
											+	[]
74.25	3.00											i
											+	
											+	
73.75	3.50											i
											+	
73.25	4.00											i
											+	
72.75	4.50											i
											+	[]
72.25	5.00											
											+	
71.75	5.50										+	
											+	
												í = =
71.25	6.00											
											+	
												i
70.75	6.50											
		L									t	1 = = 1
70.05	7 00										+	
/0.25	7.00	+		·							+	t
											t = = :	(= =
60.75	7 50										·	⊦
09.75	7.50	+				+					+	
											t	i = =
60.25	8.00										+	
09.25	8.00										+	
68 75	8.50										+	⊦
00.15	0.00										+	
68 25	9.00			·							+	⊦
00.20	0.00										+	
		F = = =									[]	i = =
67 75	9.50										+	
51.15	0.00	+				+					+	[]
											[]	
67 25	10.00			·							+	
07.25	10.00	•			L – –	L					L	•

12.50 20.00

Boring No. 11 January 25, 2023 Field BlowCount per 6 inch Standard Pen. Burmister nconfined cription uger Pen. mple isture hesior mbol ensity htu ear 32 50 0.00 (CUTTINGS) Very dark greyish brown | clayey SILT; low-medium plasticity; friable | few to little: clasts; fine sand to 1"+ gravel; subangular; Monterey Shale | very damp; soft ML 31.50 1.00 30.50 2.00 29.50 3.00 (CUTTINGS) Very dark greyish brown | sity CLAY; low-medium plasticity; friable | few to some: clasts; fine sand to 1*+ gravel; subangular; Monterey Shale | very damp; soft _ CL-SC 28.50 4.00 _ 27.50 5.00 _ Stiffen slightly and color pales with increasing depth Occasional horizons with most gravel 26.50 6.00 _ 25.50 7.00 _ 24.50 8.00 _ 23.50 9.00 _ 22.50 10.00 _ ROCK (CUTTINGS) MONTEREY SHALE; compact; medium hard; moist 21.50 11.00 20.50 12.00 _ 19.50 13.00 _ 18.50 14.00 _ 17.50 15.00 _ 16.50 16.00 15.50 17.00 14.50 18.00 13.50 19.00 _ .

Boring No. 11 January 25, 2023 Field BlowCount per 6 inch Standard Pen. Burmister nconfined cription uger Pen. hesion mple isture 'mbol ensity Depth ear lev 11.50 21.00 10.50 22.00 9.50 23.00 _ _ . 8.50 24.00 _ _ 7.50 25.00 _ 6.50 26.00 _ 5.50 27.00 _ 4.50 28.00 _ 3.50 29.00 _ 2.50 30.00 _ . _ 1.50 31.00 _ 0.50 32.00 _ -0.50 33.00 _ -1.50 34.00 _ -2.50 35.00 _ -3.50 36.00 -4.50 37.00 -5.50 38.00 All Monterey Shale to end of bore -6.50 39.00 _ . End of bore at 39.0 feet. No free water encountered or observed Bore left open for 1 week then backfilled -7.50 40.00

Boring No. 12 January 25, 2023 Field BlowCount per 6 inch Standard Pen. Burmister nconfined cription uger Pen. mple oisture hesior mbol ensity bth ear 38 50 0.00 (CUTTINGS) Very dark greyish brown | clayey SILT; low-medium plasticity; friable | few to little: clasts; fine sand to 1"+ gravel; subangular; Monterey Shale | very damp; soft ML 38.00 0.50 37.50 1.00 37.00 1.50 _ 36.50 2.00 _ _ 36.00 2.50 _ 35.50 3.00 (CUTTINGS) Very dark greyish brown | silty CLAY; low-medium plasticity friable | few: clasts; fine sand to 1"+ gravel; subangular; Monterey Shale | CL _ verv damp: soft 35.00 3.50 _ 34.50 4.00 DCPT 4.00 7.00 7.00 _ 34.00 4.50 _ 33.50 5.00 _ 33.00 5.50 _ 32.50 6.00 Stiffen slightly and color pales with increasing depth _ 32.00 6.50 _ 31.50 7.00 _ 31.00 7.50 _ 30.50 8.00 CL (CUTTINGS) Medium greyish brown | silty CLAY; low-medium plasticity; friable | few to little: clasts; fine sand to 1"+ gravel; subangular; Monterey Shale | very damp; soft-medium stiff DCPT 30.00 8.50 5.00 5.00 8.50 29.50 9.00 29.00 9.50 _ . 28.50 10.00

57.00 10.00

Boring No. 13 January 25, 2023 Field BlowCount per 6 inch Standard Pen. Burmister nconfined cription uger Pen. mple oisture hesior mbol ensity bth ear 67.00 0.00 (CUTTINGS) Very dark greyish brown | clayey SILT; low-medium plasticity; friable | few to little: clasts; fine sand to 1"+ gravel; subangular; Monterey Shale | very damp; soft ML 66.50 0.50 66.00 1.00 65.50 1.50 _ 65.00 2.00 _ _ 64.50 2.50 _ 64.00 3.00 (CUTTINGS) Very dark greyish brown | silty CLAY; low-medium plasticity; friable | few to some: clasts; fine sand to 1"+ gravel; subangular; Monterey Shale | very damp; soft CL-SC _ 63.50 3.50 _ 63.00 4.00 _ 62.50 4.50 _ 62.00 5.00 _ . _ 61.50 5.50 _ _ 61.00 6.00 Stiffen slightly and color pales with increasing depth Occasional horizons with most. _ 60.50 6.50 _ 60.00 7.00 _ DCPT 6.00 6.00 Soft, loose drilling 59.50 7.50 7.50 _ 59.00 8.00 58.50 8.50 58.00 9.00 57.50 9.50 _ .

2 Residential Lots; Cooper; Laureles Grade, APN's 416-051-015 & 016

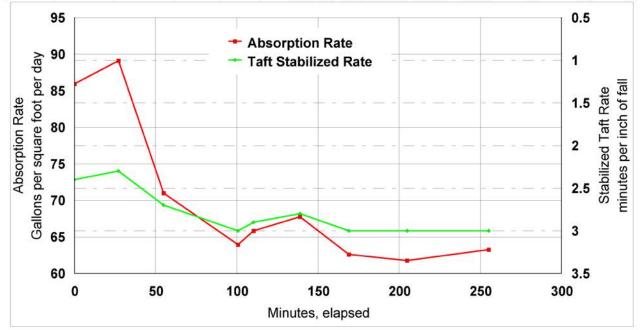
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Boring No. 13 January 25, 2023 Field BlowCount per 6 inch Standard Pen. Burmister nconfined cription uger Pen. hesion mple isture mbol ensity Depth ear lev 56.50 10.50 56.00 11.00 DCPT 11.00 50+ 50+ (CUTTINGS) MONTEREY SHALE; compact; medium hard; moist. 55.50 11.50 _ _ . Refusal to hand augur End of bore at 12.00 feet. No free water encountered 55.00 12.00 _ Bore backfilled with cutting _ 54.50 12.50 _ _ 54.00 13.00 _ 53.50 13.50 _ 53.00 14.00 _ 52.50 14.50 _ _ -52.00 15.00 _ 51.50 15.50 _ _ 51.00 16.00 _ 50.50 16.50 _ 50.00 17.00 _ 49.50 17.50 _ 49.00 18.00 48.50 18.50 48.00 19.00 47.50 19.50 _ . 47.00 20.00

2 Residential Lots; Cooper; Laureles Grade, APN's 416-051-015 & 016

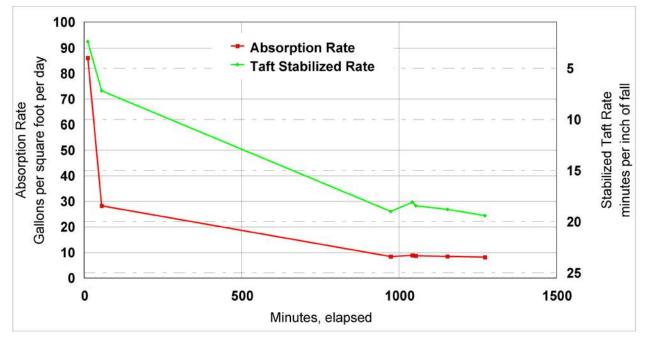
FILE No. 74902111 & 749 JOB NAME: Cooper 2 Lots CLIENT: Mr. Dave Cooper	575560 5	BORING No. 1 BORE DEPTH FROM GROUND SURFACE ELEVATION OF BORING	5.04 feet 23.50 feet		Lined 3 inch 0.25 feet
DATE DRILLED: DATE PRESOAKED:	01/25/2023	REFERANCE FOR GROUNDWATER ELEVATION OF GROUNDWATER lower than	BORE 11 -6.50 feet	AREA OF PIPE	7.07 sq. inches 0.049 sq. feet
DATE PERC'ED	09/03/2023	BOTTOM OF BORE TO GRND WATER OR MORE	30.00 feet		Pea Gravel 0.326 percent
PERFORMED BY: Lawrence E. Grice GRICE ENGINEERING INC.		DEPTH TO PRESOAK WATER LEVEL DEPTH TO RESIDUAL WATER LEVEL	1.500 feel DRY 5.042 feel		5.25 inches 0.438 feet
WITNESSED BY: None		DEPTH OF BORE USED IN TEST WALL AREA OF TESTED DEPTH INCLUDES BOT	3.5417 feel FOM 5.0182 sq.		21.65 sq. inches 0.150 sq. feet
DURATION OF TEST		minutes		NET AREA OF BORE	11.82 sq. inches
	4.25	hours		Corrected for volume of gravel BORE CIRCUMFERENCE	0.082 sq. feet 16.49 inches 1.37 feet

							APPLICATIO	N RATE FAC	TOR OF SA	FETY	8	
DATE	CLOCK TIME	ELAPSED TIME minutes	VESSEL WATER LEVEL inches	POSITION VOLUME total cubic feet	VOLUME CHANGE cubic feet	WALL AREA sq. feet	DURATION	ABSORPT cubic feet per sqr. foot per minute	gallons per sqr. foot per day	STABILIZED TAFT Percolation Rate minutes per inch	APPLICATION R Safety Factor Applied gallons per sqr. foot per day	ATE PER LAMP
09/02/2023	04:54:34 PM	0.00	31,563	5.152056	FILL	PRESAT	0.00				11	
09/02/2023	05:08:42 PM	14.13		4.351113	0.801	5.018	14.13	0.011293	121.6307	1.9	15.2	1.2
09/02/2023	05:53:02 PM	58.47	19.750	2.641618	1.709	5.018	44.33	0.007684	82.7606	2.5	10.3	1.2
09/03/2023	09:52:25 AM	0.00	31.750	5.193931	FILL PER	C	0.00			1		
09/03/2023	10:19:37 AM	27.20	26.813	4.064463	1.129	5.018	27.20	0.008275	89.1233	2.3	11.1	1.2
09/03/2023	10:47:22 AM	54.95	22.250	3.146556	0.918	5.018	27.75	0.006592	70.9941	2.7	8.9	1.2
09/03/2023	11:33:14 AM	100.82	15.250	1.780127	1.366	5.018	45.87	0.005937	63.9405	3	8.0	1.2
09/03/2023	11:42:52 AM	110.45	34.000	5.716310	RE-FILL	PERC	9.63				1	
09/03/2023	12:11:25 PM	139.00	30.125	4.814993	0.901	5.018	28.55	0.006291	67.7576	2.8	8.5	1.2
09/03/2023	12:41:27 PM	169.03	26.125	3.938811	0.876	5.018	30.03	0.005814	62.6148	3	7.8	1.2
09/03/2023	01:17:19 PM	204.90	21.125	2.906390	1.032	5.018	35.87	0.005736	61.7806	3	7.7	1.2
09/03/2023	02:07:38 PM	255.22	13.500	1.423194	1.483	5.018	50.32	0.005874	63.2664	3	7.9	1.2
second term of the second		and the second s		the second second second	AVER	AGE OF LAST	2 READINGS	0.005805	62.5235	3.0	7.8	1.2



FILE No. 74902111 & 74	917545-22.03	BORING No. 2	205	100010	PREP. OF BORE	Lined
JOB NAME: Cooper 2 Lots		BORE DEPTH FROM GROUND SURFAC	JE .	3.80 feet	DIAMETER OF PIPE	3 inch
CLIENT: Mr. Dave Coop	er	ELEVATION OF BORING		19.25 feet		0.25 feet
					AREA OF PIPE	7.07 sq. inches
DATE DRILLED:	01/25/2023	REFERANCE FOR GROUNDWATER		BORE 11		0.049 sq. feet
DATE PRESOAKED:	09/02/2023	ELEVATION OF GROUNDWATER	ower than	-6.50 feet		
DATE PERC'ED:	09/03/2023	BOTTOM OF BORE TO GRND WATER O	OR MORE	25.75 feet	ANNULAR FILL	Pea Gravel
					POROSITY OF FILL	0.326 percent
PERFORMED BY:		DEPTH TO PRESOAK WATER LEVEL		0.969 feet	N 20204202020202020	2000-00 0 002-07002-0
Lawrence E. Grice GRICE ENGINEERING INC.		DEPTH TO RESIDUAL WATER LEVEL	DRY	3.802 feet	DIAMETER OF BORE	5.25 inches 0.438 feet
		DEPTH OF BORE USED IN TEST		2.8333 feet		
WITNESSED BY: None		WALL AREA OF TESTED DEPTH INCLU	DES BOTTOM	4.0446 sq. fe	et GROSS AREA OF BORE	21.65 sq. inches 0.150 sq. feet
DURATION OF TEST		92 minutes 22 hours			NET AREA OF BORE Corrected for volume of gravel	11.82 sq. inches 0.082 sq. feet

DATE	CLOCK	ELAPSED TIME	VESSEL WATER	POSITION VOLUME	VOLUME	WALL	DURATION	ABSORPT	ION RATE	STABILIZED TAFT	APPLICATION R Safety Factor	ATE PER
		minutes	IEVEL	total cubic feet	cubic feet	sq. feet	minutes	cubic feet per sqr. foot per minute	gallons per sqr. foot per day	Percolation Rate minutes per inch	Applied gallons per sqr. foot per day	LAMP
09/02/2023	04:56:35 PM	0.00	30.438	4.887074	FILL	PERC	0.00			T	11	
09/02/2023	05:08:01 PM	11.43	28.750	4.517162	0.370	4.045	11.43	0.007999	86.1550	2.4	10.8	1.2
09/02/2023	05:52:07 PM	55.53	26.750	4.049335	0.468	4.045	44.10	0.002623	28.2490	7.2	3.5	0.8
09/03/2023	09:10:29 AM	973.90	12.000	1.152262	2.897	4.045	918.37	0.000780	8.4004	19.0	1.1	0.6
09/03/2023	10:18:48 AM	1042.22	10.813	0.923549	0.229	4.045	68.32	0.000828	8.9150	18.1	1.1	0.6
09/03/2023	10:29:42 AM	1053.12	34.063	5.730849	RE-FILL	PERC	10.90	1			T T	
09/03/2023	12:10:36 PM	1154.02	32.688	5.408191	0.323	4.045	100.90	0.000791	8.5155	18.8	1.1	0.6
09/03/2023	02:09:30 PM	1272.92	31.063	5.041339	0.367	4.045	118.90	0.000763	8.2161	19.4	1.0	0.6
			1		AVE	RAGE OF LAST	2 READINGS	0.000777	8.3658	19.1	1.0	0.6



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16.49 inches 1.37 feet

BORE CIRCUMFERENCE

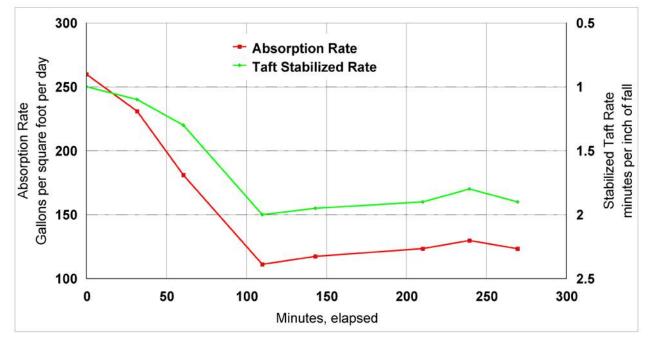
CLIENT:

DATE DRILLED: DATE PRESOAKED:

FILE No. 74902111 & 74917545-22.03 JOB NAME: Cooper 2 Lots BORING No. 3 BORE DEPTH FROM GROUND SURFACE PREP. OF BORE DIAMETER OF PIPE Lined 3 inch 0.25 feet 7.07 sq. inches 2.05 feet Mr. Dave Cooper ELEVATION OF BORING 33.50 feet AREA OF PIPE REFERANCE FOR GROUNDWATER ELEVATION OF GROUNDWATER lower than BOTTOM OF BORE TO GRND WATER OR MORE 01/25/2023 BORE 11 0.049 sq. feet -6.50 feet 40.00 feet 09/02/2023 09/03/2023 ANNULAR FILL

Pea Gravel 0.326 percent DATE PERC'ED: POROSITY OF FILL PERFORMED BY: DEPTH TO PRESOAK WATER LEVEL 0.813 feet 2.052 feet DIAMETER OF BORE Lawrence E. Grice DEPTH TO RESIDUAL WATER LEVEL DRY 5.25 inches GRICE ENGINEERING INC. 0.438 feet DEPTH OF BORE USED IN TEST 1.2396 feet 1.8541 sq. feet 21.65 sq. inches 0.150 sq. feet WITNESSED BY: WALL AREA OF TESTED DEPTH INCLUDES BOTTOM GROSS AREA OF BORE None DURATION OF TEST 269.60 minutes NET AREA OF BORE 11.82 sq. inches 0.082 sq. feet 4.49 hours Corrected for volume of gravel BORE CIRCUMFERENCE 16.49 inches

DATE	01.001/	51 10050	1150051	DODITION	1011045	18/8/1	APPLICATIO				8	
DATE	CLOCK TIME	ELAPSED TIME minutes	VESSEL WATER LEVEL	POSITION VOLUME total cubic feet	CHANGE CUDIC feet	WALL AREA sq. feet	DURATION	cubic feet per sqr. foot per minute	ION RATE gallons per sqr. foot per day	STABILIZED TAFT Percolation Rate minutes per inch	APPLICATION R Safety Factor Applied gallons per sqr. foot per day	PER LAMP
09/02/2023	05:07:22 PM	0.00	31.750	5,193931	FILL	PRESAT	0.00				1	
09/02/2023	05:14:16 PM	6.90		3.662440	1.531	1.854	6.90	0.119712	1289.3476	0.2	161.2	1.2
09/02/2023	05:51:12 PM	43.83		1.827113	1.835	1.854	36.93	0.026802	288.6687	0.9		1.2
09/03/2023	09:45:45 AM	0.00		3.611676	FILL PER	c	0.00					
09/03/2023	10:17:25 AM	31.67	18.250	2.352256	1.259	1.854	31.67	0.021451	231.0323	1.1	28.9	1.2
09/03/2023	10:46:22 AM	60.62	13.625	1.449357	0.903	1.854	28.95	0.016821	181.1738	1.3	22.6	1.2
09/03/2023	11:35:41 AM	109.93	8.500	0.504495	0.945	1.854	49.32	0.010334	111.2958	2	13.9	1.2
09/03/2023	12:08:55 PM	143.17	35.000	5.944258	RE-FILL	PERC	33.23					
09/03/2023	01:16:01 PM	210.27	28.750	4.517162	1.427	1.854	67.10	0.011471	123.5478	1.9	15.4	1.2
09/03/2023	01:45:15 PM	239.50	25.750	3.863727	0.653	1.854	29.23	0.012056	129.8460	1.8	16.2	1.2
09/03/2023	02:15:21 PM	269.60	22.625	3.224201	0.640	1.854	30.10	0.011460	123.4232	1.9	15.4	1.2
					AVER	RAGE OF LAST	2 READINGS	0.011758	126.6346	1.9	15.8	1.2

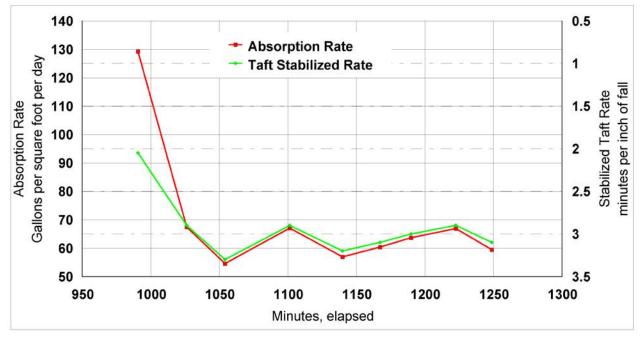


1.37 feet

FILE No. 74902111 & 74917545-22.03 JOB NAME: Cooper 2 Lots CLIENT: Mr. Dave Cooper BORING No. 4A BORE DEPTH FROM GROUND SURFACE ELEVATION OF BORING PREP. OF BORE DIAMETER OF PIPE Lined 5.23 feet 38.50 feet AREA OF PIPE 01/25/2023 REFERANCE FOR GROUNDWATER BORE 11

FILE No.	74902111 & 749	17545-22.03	BORING No.	4A				PREP. OF BORE	Lined	
JOB NAME:	Cooper 2 Lots		BORE DEPTH FRC	OM GROUND SURF	ACE	5.23	feet	DIAMETER OF PIPE	3	inch
CLIENT:	Mr. Dave Coope	er	ELEVATION OF BC	DRING		38.50	feet		0.25	feet
								AREA OF PIPE	7.07	sq. inches
DATE DRILLE	D:	01/25/2023	REFERANCE FOR	GROUNDWATER		BORE 11			0.049	sq. feet
DATE PRESO	AKED:	09/02/2023	ELEVATION OF GR	ROUNDWATER	lower than	-6.50	feet			
DATE PERC'E	ED:	09/03/2023	BOTTOM OF BORE	E TO GRND WATER	R OR MORE	45.00	feet	ANNULAR FILL	Pea Gravel	
								POROSITY OF FILL	0.326	percent
PERFORMED	BY:		DEPTH TO PRESO	OAK WATER LEVEL		1.917	feet			
Lawrence E. C	Grice		DEPTH TO RESIDU	UAL WATER LEVEL	DRY	5.234	feet	DIAMETER OF BORE	5.25	inches
GRICE ENGIN	NEERING INC.								0.438	feet
			DEPTH OF BORE	USED IN TEST		3.3177	feet			
WITNESSED	BY:		WALL AREA OF TE	ESTED DEPTH INCL	UDES BOTTOM	4.7103	sq. feet	GROSS AREA OF BORE	21.65	sq. inches
None									0.150	sq. feet
DURATION O	E TEST	258	08 minutes					NET AREA OF BORE	11.82	sq. inches
bolotholdo	I ILOI		30 hours					Corrected for volume of gravel		so, feet
		- -	00 110013					Corrected for Volume of graver	0.002	39.1001
								BORE CIRCUMFERENCE	16,49	inches
									1.37	feet

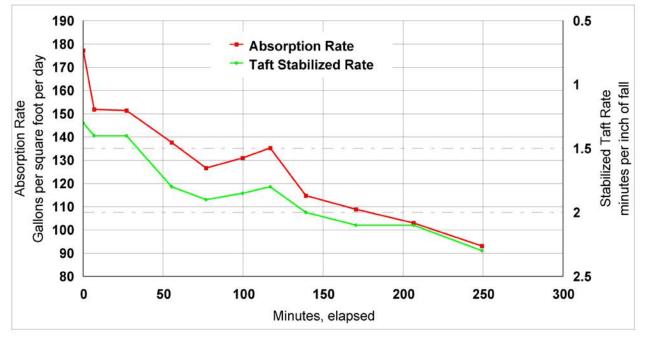
DATE	CLOCK	ELAPSED	VESSEL	POSITION	VOLUME	WALL	APPLICATIO DURATION		ION RATE	STABILIZED	APPLICATION R	ATE
	TIME	TIME	WATER LEVEL inches	VOLUME total cubic feet	CHANGE cubic feet	AREA sq. feet	minutes	cubic feet per sqr. foot per minute	gallons per sqr. foot per day	TAFT Percolation Rate minutes per inch	Safety Factor Applied gallons per sqr. foot per day	PER LAMP
09/02/2023	05:12:56 PM	0.00	34.500	5.831064	FILL	PRESAT	0.00				1	
09/02/2023	05:50:32 PM	37.60		2.689758	3.141	4.710	37.60	0.017737	191.0297	1.2	23.9	1.
09/03/2023	09:43:40 AM	990.73	34.750	5.887661	FILL PER	C	0.00					
09/03/2023	10:19:14 AM	1026.30	30.250	4.837418	1.050	4.710	35.57	0.006269	67.5189	2.9	8.4	1.
09/03/2023	10:47:10 AM	1054.23	27.250	4.170360	0.667	4.710	27.93	0.005070	54.6034	3.3	6.8	1.
09/03/2023	11:34:20 AM	1101.40	20.500	2.786039	1.384	4.710	47.17	0.006231	67.1089	2.9	8.4	1.
09/03/2023	12:12:49 PM	1139.88	15.500	1.827113	0.959	4.710	38.48	0.005290	56.9759	3.2	7.1	1.
09/03/2023	12:40:12 PM	1167.27	11.750	1.103293	0.724	4.710	27.38	0.005612	60.4398	3.1	7.6	1.
09/03/2023	01:02:53 PM	1189.95	34.938	5.930108	RE-FILL	PERC	22.68				1	
09/03/2023	01:35:35 PM	1222.65	30.750	4.972338	0.958	4.710	32.70	0.006218	66.9718	2.9	8.4	1.
09/03/2023	02:01:45 PM	1248.82	27.750	4.291384	0.681	4.710	26.17	0.005525	59.5042	3.1	7.4	1.
					AVER	RAGE OF LAST	2 READINGS	0.005871	63.2380	3.0	7.9	1.



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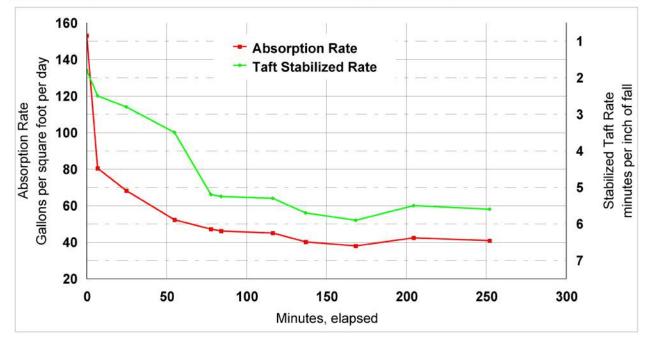
FILE No. JOB NAME: CLIENT:	74902111 & 74 Cooper 2 Lots Mr. Dave Coop)	BORING №. BORE DEPTH F ELEVATION OF	5A FROM GROUND SURF. F BORING	ACE		4.13 60.50	feet feet	PREP. OF BORE DIAMETER OF PIPE AREA OF PIPE	0.25	
DATE DRILLE	2.000	01/25/2023			OR GROUNDWATER	lower than	BC	RE 11 -6.50	feet	AREA OF PIPE		sq. inches sq. feet
DATE PERC'E	ED:	09/03/2023	I	BOTTOM OF BO	ORE TO GRND WATER	R OR MORE		67.00	feet	ANNULAR FILL POROSITY OF FILL	Pea Gravel 0.326	percent
PERFORMED Lawrence E. C GRICE ENGIN					ESOAK WATER LEVEL SIDUAL WATER LEVEL	D	RY	1.833 4.125		DIAMETER OF BORE	5.25 0.438	inches feet
WITNESSED None	BY:				RE USED IN TEST F TESTED DEPTH INCL	UDES BOTTO	МС	2.2917 3.3001	feet sq. feet	GROSS AREA OF BORE		sq. inches sq. feet
DURATION O	F TEST		ERR I	minutes hours						NET AREA OF BORE Corrected for volume of gravel		sq. inches sq. feet
										BORE CIRCUMFERENCE	16.49 1.37	inches feet

DATE	CLOCK	ELAPSED TIME	VESSEL	POSITION VOLUME	VOLUME	WALL	DURATION	ABSORPT	ION RATE	STABILIZED TAFT	APPLICATION R Safety Factor	ATE PER
		minutes	LEVEL	total cubic feet	cubic feet	sq. feet	minutes	cubic feet per sqr. foot per minute	gallons per sqr. foot per day	Percolation Rate minutes per inch	Applied gallons per sqr. foot per day	LAMP
09/02/2023	05:25:01 PM	0.00	34.000	5.716310	FILL	PRESAT	0.00					
09/02/2023	05:49:26 PM	24.42		4.200616	1.516	3.300	24.42	0.018810	202.5950	1.2	25.3	1.3
09/03/2023	09:48:27 AM	0.00	34.500	5.831064	FILL PERC		0.00		and the strength	+	+	
09/03/2023	09:55:19 AM	6.87	33.125	5.511595	0.319	3.300	6.87	0.014098	151.8400	1.4	19.0	1.3
09/03/2023	10:15:35 AM	27.13	29.000	4.571313	0.940	3.300	20.27	0.014059	151.4186	1.4	18.9	1.3
09/03/2023	10:43:50 AM	55.38	23.375	3.379490	1.192	3.300	28.25	0.012784	137.6882	1.8	17.2	1.3
09/03/2023	11:05:20 AM	76.88	19.250	2.545337	0.834	3.300	21.50	0.011757	126.6225	1.9	15.8	1.3
09/03/2023	11:28:08 AM	99.68	34.125	5.745389	RE-FILL F	PERC	22.80					
09/03/2023	11:45:27 AM	117.00	31.000	5.027539	0.718	3.300	17.32	0.012562	135.2923	1.8	16.9	1.3
09/03/2023	12:07:40 PM	139.22	27.563	4.246000	0.782	3.300	22.22	0.010660	114.8087	2	14.4	1.3
09/03/2023	12:39:04 PM	170.62	22.500	3.198319	1.048	3.300	31.40	0.010110	108.8937	2.1	13.6	1.3
09/03/2023	01:15:03 PM	206.60	16.750	2.062375	1.136	3.300	35.98	0.009566	103.0289	2.1	12.9	1.3
09/03/2023	01:57:50 PM	249.38	10.375	0.842391	1.220	3.300	42.78	0.008641	93.0642	2.3	11.6	1.3
	2011/2012/02/02/02			L'and the second second second	AVER	AGE OF LAST :	2 READINGS	0.009103	98.0466	2.2	12.3	1.3



FILE No. 74902111 8 JOB NAME: Cooper 2 Lo CLIENT: Mr. Dave C		BORING No. 6 BORE DEPTH FROM GROUND SURFACE ELEVATION OF BORING	5.29 feet 65.50 feet	PREP. OF BORE DIAMETER OF PIPE AREA OF PIPE	Lined 3 inch 0.25 feet 7.07 sq. inches
DATE DRILLED: DATE PRESOAKED:	01/25/2023 09/02/2023	REFERANCE FOR GROUNDWATER ELEVATION OF GROUNDWATER lower than	BORE 11 -6.50 feet	AREA OF FIFE	0.049 sq. feet
DATE PERC'ED:	09/03/2023	BOTTOM OF BORE TO GRND WATER OR MORE	72.00 feet	ANNULAR FILL POROSITY OF FILL	Pea Gravel 0.326 percent
PERFORMED BY: Lawrence E. Grice GRICE ENGINEERING INC	D.	DEPTH TO PRESOAK WATER LEVEL DEPTH TO RESIDUAL WATER LEVEL DR'	1.083 feet 7 5.292 feet	DIAMETER OF BORE	5.25 inches 0.438 feet
WITNESSED BY: None		DEPTH OF BORE USED IN TEST WALL AREA OF TESTED DEPTH INCLUDES BOTTOM	4.2083 feet 1 5.9345 sq. feet	GROSS AREA OF BORE	21.65 sq. inches 0.150 sq. feet
DURATION OF TEST		ERR minutes ERR hours		NET AREA OF BORE Corrected for volume of gravel	11.82 sq. inches 0.082 sq. feet
				BORE CIRCUMFERENCE	16.49 inches 1.37 feet

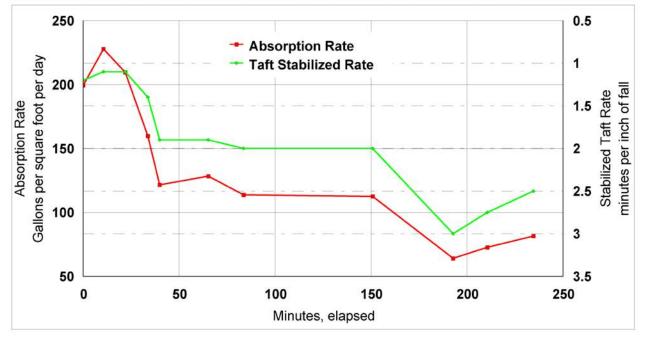
DATE	CLOCK TIME	ELAPSED TIME	VESSEL WATER LEVEL	POSITION VOLUME	VOLUME CHANGE	WALL AREA	DURATION	cubic feet per	ION RATE gallons per	STABILIZED TAFT Percolation Rate	APPLICATION R Safety Factor Applied gallons per	ATE PER LAMP
		minutes	inches	total cubic feet	cubic feet	sq. feet	minutes	sqr. foot per minute	sqr. foot per day	minutes per inch	sqr. foot per day	
09/02/2023	05:35:09 PM	0.00	34.250	5.774467	FILL	PRESAT	0.00				11	
09/02/2023	05:48:10 PM	13.02	27.188	4.155232	1.619	5.934	13.02	0.020962	225.7668	1.1	28.2	1.2
09/03/2023	09:49:41 AM	0.00	25.750	3.863727	FILL PER	C	0.00			+	+ +	
09/03/2023	09:56:31 AM	6.83	24.250	3.560662	0.303	5.934	6.83	0.007473	80.4923	2.5	10.1	1.2
09/03/2023	10:14:33 AM	24.87	21.000	2.882320	0.678	5.934	18.03	0.006339	68.2688	2.8	8.5	1.2
09/03/2023	10:44:39 AM	54.97	16.500	2.015057	0.867	5.934	30.10	0.004855	52.2919	3.5	6.5	1.2
09/03/2023	11:07:25 AM	77.73	13.500	1.423194	0.592	5.934	22.77	0.004381	47.1815	5.2	5.9	1.2
09/03/2023	11:13:52 AM	84.18	34.375	5.802766	RE-FILL	PERC	6.45				11	
09/03/2023	11:46:10 AM	116.48	30.875	4.999938	0.803	5.934	32.30	0.004188	45.1097	5.3	5.6	1.2
09/03/2023	12:06:44 PM	137.05	28.875	4.544238	0.456	5.934	20.57	0.003734	40.2129	5.7	5.0	1.2
09/03/2023	12:38:00 PM	168.32	25.875	3.888755	0.655	5.934	31.27	0.003533	38.0478	5.9	4.8	1.2
09/03/2023	01:14:16 PM	204.58	21.750	3.040045	0.849	5.934	36.27	0.003943	42.4719	5.5	5.3	1.2
09/03/2023	02:01:50 PM	252.15	16.250	1.968071	1.072	5.934	47.57	0.003798	40.9008	5.6	5.1	1.2
	Constantine of the			and a second second	AVEF	RAGE OF LAST	2 READINGS	0.003870	41.6863	5.6	5.2	1.2



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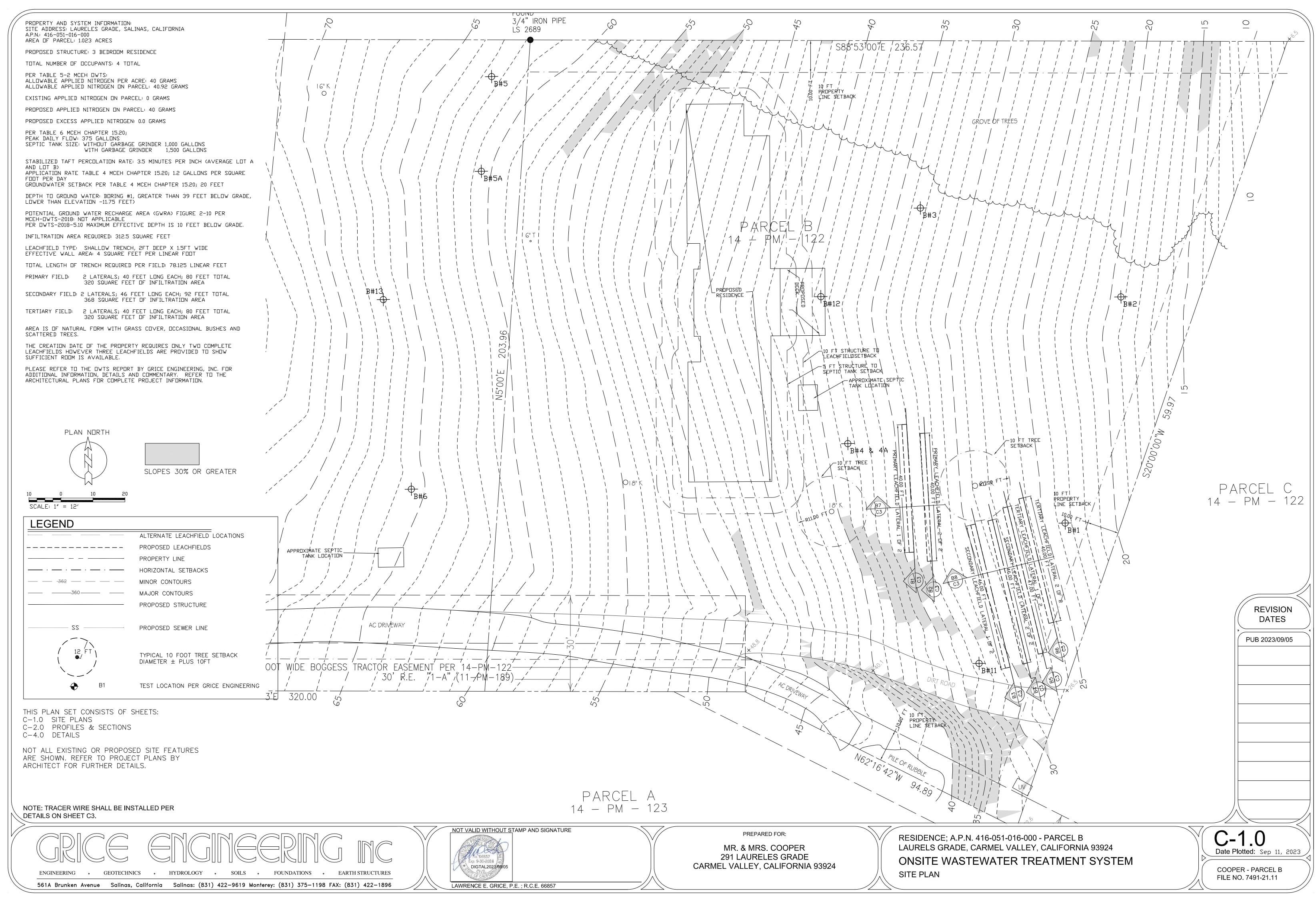
FILE No.	74902111 & 749	917545-22.03	BORING No.	8				PREP. OF BORE	Lined	
JOB NAME:	Cooper 2 Lots		BORE DEPTH FROM	M GROUND SURF	ACE	2.42	feet	DIAMETER OF PIPE	3	inch
CLIENT:	Mr. Dave Coope	er	ELEVATION OF BO	RING		72.25	feet		0.25	feet
								AREA OF PIPE	7.07	sq. inches
DATE DRILLE	ED:	01/25/2023	REFERANCE FOR	GROUNDWATER		BORE 11			0.049	so, feet
DATE PRESC	DAKED:	09/02/2023	ELEVATION OF GR	OUNDWATER	lower than	-6.50	feet			
DATE PERC'	ED:	09/03/2023	BOTTOM OF BORE	TO GRND WATER	R OR MORE	78.75	feet	ANNULAR FILL	Pea Gravel	
								POROSITY OF FILL	0.326	percent
PERFORMED	BY:		DEPTH TO PRESO/	K WATER LEVEL		0.667	feet			1. OAR - 2. OAR - 2. O
Lawrence E. C	Grice		DEPTH TO RESIDU	AL WATER LEVEL	DR	Y 2.417	feet	DIAMETER OF BORE	5.25	inches
GRICE ENGI	NEERING INC.								0.438	feet
			DEPTH OF BORE U	SED IN TEST		1,7500	feet			
WITNESSED	BY:		WALL AREA OF TE	STED DEPTH INCL	UDES BOTTOM	A 2.5556	sq. feet	GROSS AREA OF BORE	21.65	sq. inches
None							1			so, feet
DURATION C	F TEST	234.6) minutes					NET AREA OF BORE	11.82	sq. inches
12-12-12-12-12-12-12-12-12-12-12-12-12-1		3.9	1 hours					Corrected for volume of gravel		so, feet
										3
								BORE CIRCUMFERENCE	16.49	inches
									1.37	

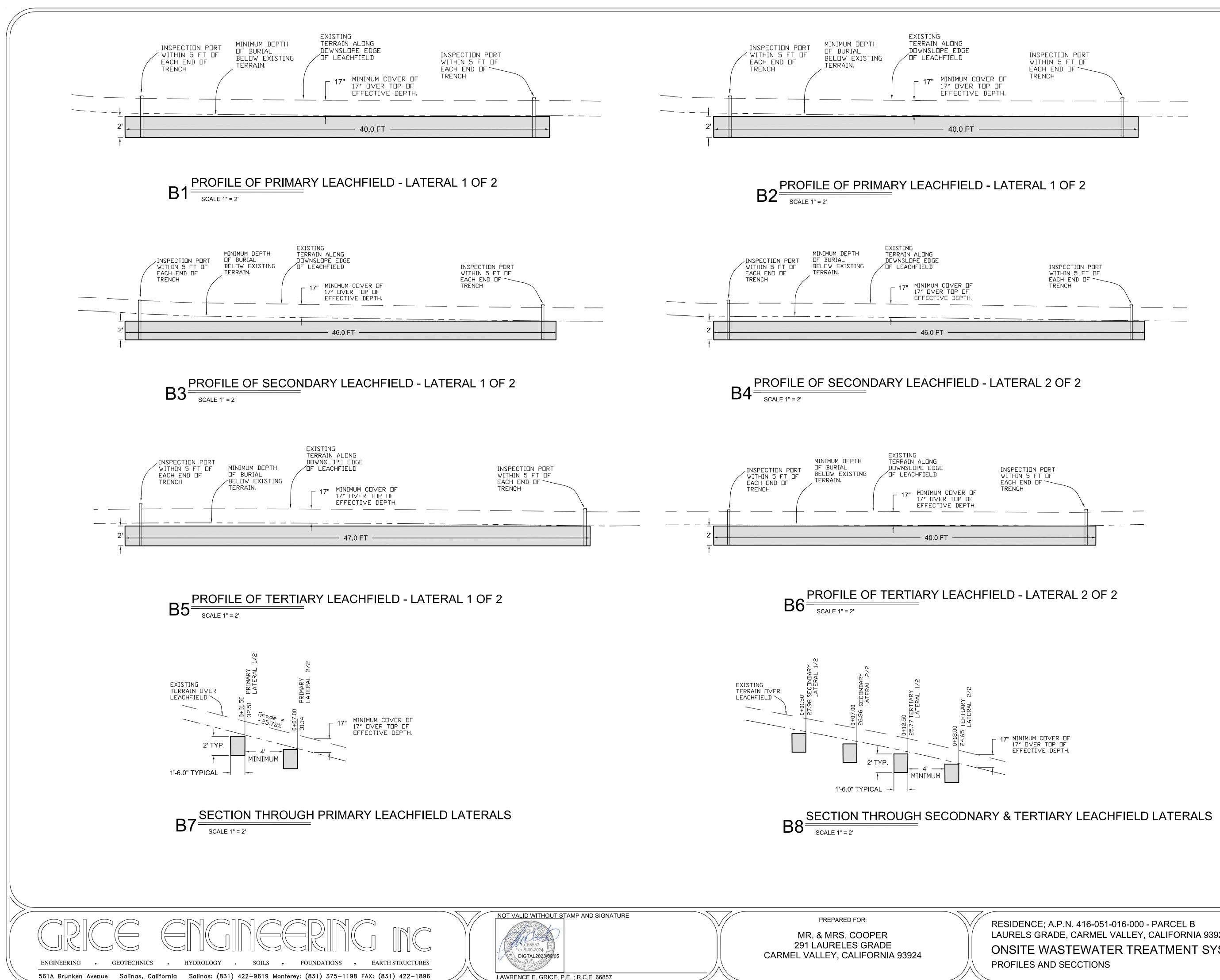
DATE	CLOCK TIME	ELAPSED TIME minutes	VESSEL WATER LEVEL	POSITION VOLUME total cubic feet	VOLUME CHANGE cubic feet	WALL AREA sq. feet	DURATION	ABSORPT cubic feet per sqr. foot per minute	gallons per sqr. foot per day	STABILIZED TAFT Percolation Rate minutes per inch	APPLICATION R Safety Factor Applied gallons per sqr. foot per day	ATE PER LAMP	
09/02/2023	05:46:49 PM	0.00	34.000	5.716310	FILL	PRESAT	0.00						
09/02/2023	05:55:30 PM	8.68	and the second s	5.363874	0.352	2.556	8.68	0.015882	171.0526	1.3	21.4	1.2	
08/10/2023	10:42:12 AM	0.00	33.500	5.599995	FILL PER	C	0.00						
08/11/2023	10:52:47 AM	10.58	31.000	5.027539	0.572	2.556	10.58	0.021165	227.9587	1.1	28.5	1.2	
08/11/2023	11:04:08 AM	21.93	28.500	4.463011	0.565	2.556	11.35	0.019462	209.6163	1.1	26.2	1.2	
08/11/2023	11:15:55 AM	33.72	26.563	4.016178	0.447	2.556	11.78	0.014838	159.8135	1.4	20.0	1.2	
08/11/2023	11:22:04 AM	39.87	25.625	3.838699	0.177	2.556	6.15	0.011292	121.6207	1.9	15.2	1.2	
08/11/2023	11:47:22 AM	65.17	21.875	3.067916	0.771	2.556	25.30	0.011921	128.3949	1.9	16.0	1.2	
08/11/2023	12:05:49 PM	83.62	19.375	2.569407	0.499	2.556	18.45	0.010573	113.8708	2	14.2	1.2	
08/11/2023	01:13:01 PM	150.82	10.000	0.772827	1.797	2.556	67.20	0.010461	112.6713	2	14.1	1.2	
08/11/2023	01:55:00 PM	192.80	6.500	0.133811	0.639	2.556	41.98	0.005956	64.1462	3	8.0	1.2	
08/11/2023	02:12:50 PM	210.63	30.125	4.814993	RE-FILL	PERC	17.83						
08/11/2023	02:36:48 PM	234.60	28.000	4.351113	0.464 AVEF	2.556 RAGE OF LAST	23.97 2 READINGS	0.007574 0.006765	81.5706 72.8584		10.2 9.1	1.2 1.2	



AND DESCRIPTION	LABORATORY CLASSIFICATION CRITERIA		$\begin{array}{c c} \begin{array}{c} \begin{array}{c} \begin{array}{c} \begin{array}{c} \begin{array}{c} \begin{array}{c} \begin{array}{c} \end{array} \\ \end{array} \end{array} \end{array} \end{array} \\ \begin{array}{c} \begin{array}{c} \begin{array}{c} \begin{array}{c} \end{array} \\ \end{array} \end{array} \end{array} \end{array} \end{array} \\ \begin{array}{c} \begin{array}{c} \begin{array}{c} \begin{array}{c} \end{array} \end{array} \end{array} \end{array} \end{array} \\ \begin{array}{c} \begin{array}{c} \end{array} \end{array} \end{array} \\ \end{array} \end{array} \\ \begin{array}{c} \begin{array}{c} \begin{array}{c} \end{array} \end{array} \end{array} \end{array} \\ \end{array} \end{array} \\ \end{array} \end{array} \\ \begin{array}{c} \begin{array}{c} \end{array} \end{array} \end{array} \end{array} \\ \end{array} \end{array} \\ \begin{array}{c} \begin{array}{c} \end{array} \end{array} \end{array} \\ \end{array} \end{array} \\ \end{array} \end{array} \\ \end{array} \end{array} \\ \begin{array}{c} \end{array} \end{array} \end{array} \\ \end{array} \end{array} \\ \end{array} \end{array} \\ \end{array} \\ \end{array} \\ \end{array} \end{array} \\ \end{array} \end{array} \\ \end{array} \\ \end{array} \end{array} \\ \end{array} \end{array} \\ \end{array} \end{array} \\ \end{array} \\ \end{array} \\ \end{array} \end{array} \\ \end{array} \\ \end{array} \end{array} \\ \end{array} \end{array} \\ \end{array} \\ \end{array} \\ \end{array} \end{array} \\ \end{array} \end{array} \\ \end{array} \\ \end{array} \end{array} \\ \end{array} \\ \end{array} \\ \end{array} \\ \end{array} \\ \end{array} \\ \end{array} \\ \end{array} \\ \end{array} \end{array} \\ \end{array} \\ \end{array} \\ \end{array} \end{array} \\ \end{array} \end{array} \\ \end{array} \end{array} \\ \\ \end{array} \\ \end{array} \\ \end{array} \\ \end{array} \\ \\ \end{array} \\ \bigg \\ \\ \end{array} \\ \\ \end{array} \\ \end{array}$						Outphanks Solts SAT EQUAL VOLD MITT Toughness and dy Ranghh Increases with Increasing plasticity include Increasing plasticity									plastic limit)	After removing particles larger that the No. 40 sleve size, a specimen of soil about one-haif nch cube in size is molded to the consistency of puth, if too dny, water must be added and if sticky, the specimen should be spread out in a thin layer and allowed to be sesome matching by expension. Then the as sections the softward on a smooth surface of between the name rune at the added added core edict	inch in diameter. The thread is then folded and reroled repeatedly. Durning this manipulation the moisture content into gradually reduced and the specimen stiffens, finally losses its plasticity, and crumbles when the plastic limit is reached. After the thread crumbles, the pieces should be lumped together and a slight kneading action continued until the fund crumbles.	The burgher the thread near the plastic limit and the stiffer the lump when it finally cumbles, the more potent is the colloidal clay fraction in the soil. Weakness of the thread at the plastic limit and quick loss of coherence of the lump bedown the plastic limit charge either intropianc clay of low plasticity, or materials such as factoryse days and organic clays which occure below the A-line.	Highly organic clays have a very weak and spongy leel at the plastic limit. 103-D-347		
	ב	In the fractions as given under field identification. Determine percetages of gravel and sand from grain size curve. Depending on percentage of fines (fractin smaller than No. 200 sieve size) coarse grained soils are classified as follows: Less than 5% GM.GP, GW, SP More than 12 % GM.GC, GV, SP							t ərtt pr								e with clay binder.		TOUGHNESS (Consistency near plastic limit)	ing particles larger the ed to the consistency pread out in a thin lay rolled out by hand or	eter . The thread is the thread crumbles.	 the thread near the period of the colloidal clay fraction of the lump below the line-type clays and orgon 	nic clays have a very .	
: INCLUDING IDENTIFICATION AND	INFORMATION REQUIRED FOR DESCRIBING SOILS	Give typical name, indicate approximate percentages of sand and gravel, max.	size; angularity, surface condition, and hardness of the coarse grains; local or geologic name and other pertinent	descriptive information, and symbol in parentheses.	For undisturbed soils add information on stratification, degree of compactness,	cementation, moisure conditions and drainage characteristics.	EXAMPLE: Siity Sand , gravelly; about 20% hard,	angular gravel particles <u>7</u> inch maximum size; rounded and subangular sand grains coarse to fine, about 15 %	non-plastic lines with low ory strength, well compacted and moist in place, alluvial sand; (SM).		Give typical name, indicate degree and character of plasticity, amount and	well conditions, odor if any, local or wel conditions, odor if any, local or geologic name, and other pertinent descriptive information and symbol in	parentheses.	For undisturbed soils add information or structure, stratification, consistency in undisturbed and remolded strates,	moisure and trainage condutoris. EXAMPLE:	Clayey silt, brown, slightly plastic, small percentage of fine sand, numerous	vertical root holes, firm and dry in place, loess; (ML).	For examle GW-GC, well graded gravel-sand mixture with clay binder	R FRACTIONS nches. For field classification purposes, lerfere with the test.	TOUGHNES				Highly organ
CATION & ASTM D2487	TYPICAL NAMES	Well graded gravels, gravel-sand mixtures, little or no fines.	Poorly graded gravels, gravel-sand mixtures, little or no fines.	Silty gravels, poorly graded gravel-sand-silt mixtures.	Clayey gravels, poorly graded gravel-sand-clay mixtures.	Well graded sands, gravelly sands, little or no fines.	Poorly graded sands, gravelly sands, little or no fines.	Silty sands, poorly graded sand-silt mixtures.	Clayey sands, poorly graded sand-clay mixtures.		Inorganic silts and very vine sands, rock flour, silty or clayey fine sands withg slight plasticity.	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, sity clays, lean clays.	Organic sitts and organic silt-clays of low plasticity.	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts.	Inorganic clays of high plasticity, fat clays.	Organic clays of medium to high plasticity.	Peat and other highly organic soils.	designated by combinations of group symbols.	TIFICATION PROCEDURES FOR FINE GRAINED SOILS OR FRACTIONS and on the minus No. Job we aize paticles, approximately at inches. For field classification purposes, mendeds: simily remove by hands the coarse paticles that interfere with the test.	DRY STRENGTH (Crushing characteristics)	After removing particles larger than No. 40 sleve size, mold a pat of soil to the consistency of putty, adding water if necessary. Allow the pat to dry completely by oven, sun, or air drying, and then test its strength by breaking and orumbling between the fingers. This carength is a measure of the	rorateder and quariey or the conocal traction contained in the soli. The dry strength increases with increasing plasticity. The strength is that the term of the CH group. A typical inorganic sill possesses only very signification strength. Silly fine samd and slits have about the same slight dry strength. Unit can be locating upticated by the flexityment providenting the dried speciment. Fine sand feels gritty whereas a constratibuted by the flexityment providenting the dried speciment. Fine sand feels gritty whereas a constratibuted by the flexityment of flox.		
CLASSIFI	GROUP SYMBOLS N.	В	ß	ΔD	0 U	SW	Ъ	SM	sc		ML	сL	OL	ΗW	СН	Н	đ	f two group	FIELD IDENTIFICAT are to be performed on the screening is not intended	DRY S1	After re adding its stren	cnaract increasi High dr very slit distingu typical (5	
SOIL	nated weights	ntial amounts of all zes.	sizes with some ing.	ocedures see ML	edures see CL	ntial amounts of al zes.	sizes with some ing.	ocedures see ML	edures see CL	40 SIEVE SIZE TOUGHNESS (consistency near PLASTIC LIMIT)	None	Medium	Slight	Slight to medium	High	Slight to medium	color, odor, spongy feel and by fibrous texture.	g characteristics o lard.	FI ocedures are to bi screen		il with a le soil soft but	orously ance of water ossy. When n the surface, of water e character of	istic clay has ck reaction.	62
UNIFIED	TION PROCEDURES and basing fractions on estimated	Wide range in grain size and substantial intermediate particle sizes.	Predominally one size or a range of sizes with some intermediate sizes missing.	Non-plastic fines (for identification procedures below).	fines (for identification procedures below).	Wide range in grain sizes and substantial amounts of all intermediate particle sizes.	Predominatly one size or a range of sizes intermediate sizes missing.	on-plastic fines (for idendification procedures below).	Plastic fines (for identification procedures below).	I SMALLER THAN No. DILATANCY	Quick to slow	None to very slow	Slow	Slow to none	None	None to very slow		ns: Soils possessin hart are U.S. Stanc	These procedur		prepare a pot of moist soil with a ter if necessary to make the soil soft.	zontally, stricking vig onsists of the appear ancy and becomes gi a gloss disappear froi bidity of appearance of ssist in identifying the	reactoin whereas a plastic clay has show a moderately quick reaction.	MATION-JANUARY 19
	IDENTIFICATION PROCEDURES than 3 inches and basing fractions on esti	Wide range in grainte	Predominatly on inter	Non-plastic fines	Plastic fines (fo	Wide range in gra	Predominatly on interi	Non-plastic fines (f	Plastic fines (fo.	DURES ON FRACTION DRY STRENGTH crussing characterstics)	None to slight	Medium to high	Slight to medium	Slight to medium	High to very high	Medium to high	Readily identified by frequently	Boundary classifications: Soils possessing characteristics of two groups are All sieve sizes on this chart are U.S. Standard.			o. 40 sieve size, prep Add enough water if	hand and shake hon A positive reaction c es to a livery consist: fingers, the water ant or crumbles. The rat e during squeezing a	the quickes and most distinct re such as a typical rock flour, sh	D BUREAU OF RECLA
	FIELD IDENTIFICA particles larger than 3 inches	s size t to the ALS or no or no	coarse f o. 4 sieve equivalen	cispie LINES EIRE	More the	raction re size Mo. 4 sie No. 4 sie SANDS	IDS coarse f lo. 4 siev	SAN et than f ual classi WITH ES clable	sht enoM Iisme ei	IDENTIF	ess that	ΩN∀ S.	LTIS	eater	AND C I limit gr 07 nsrt		Y ORGANIC SOILS	N. Bou N. Allsi		DILATANCY (Reaction to shaking)	After removing portions larger than No. 40 sieve size, volume of about one-half cubic inch. Add enough wa not sticky.	Place the polin the open paim of one hand and shake horizontally, stricking vigorously against the other hand switch charges to paiviev reaction consists of the paperance of water the sufface the polyavier strictures to a interv consistancy and becomes glossy. When the sample is squeezed between the fingers, the water and gloss disappear from the surface, the polyaftiens and interview of tradence during squeezing assist in dentifying the character (of uting saking and of this dispotance during squeezing assist in dentifying the character (of	the fines in a soil. Very fine clean sands give the quickes no reaction. Inorganic silts, such as a	ADOPTED BY: CORPS OF ENGINEERS AND BUREAU OF RECLAMATION-JANUARY 1962
	Excluding p	si əz			e) SAINEC	si isilisi	tem to tle	e than h	noM Smallest ps		No. 200	nsdt 1911	sm e si l ezie	IE GR		More	ніснгу			DILA'	After volun not st	Place agair on thi the st the pu during	the fines Very fine no reaction	ADOPTEC
	in Aven		Salir Mont	JIN nas: (83 erey: (8	(1) 422 331) 37	-9619 5-1198		(831)	IC 22-189	6	C			ns te	o U	nifi	ed S	So		Cla	CHA assif	RT icatior	n)	Pa

APPENDIX C



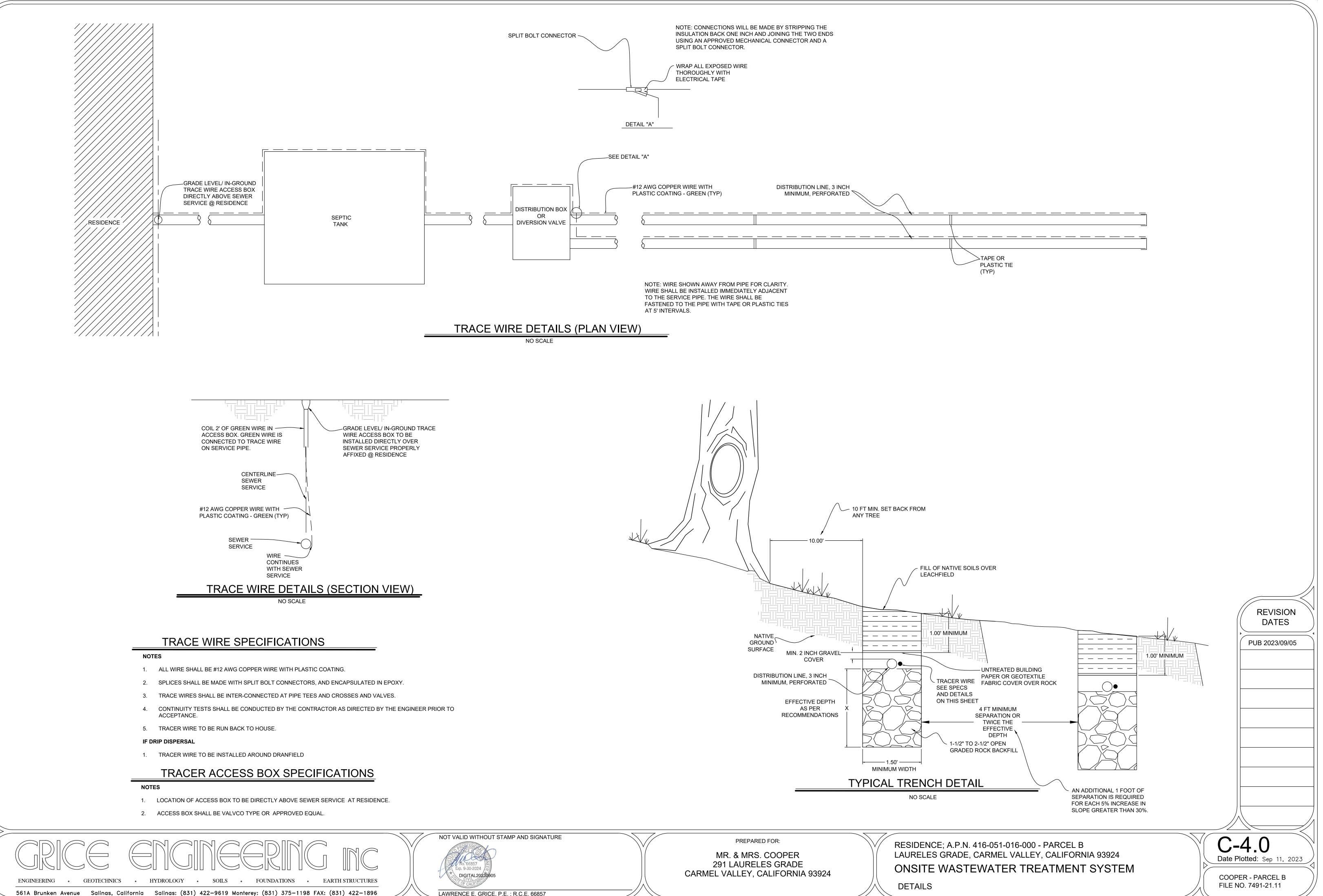


Date Plotted: Sep 11, 2023

C-2.0

REVISION DATES

PUB 2023/09/05



LAWRENCE E. GRICE, P.E.; R.C.E. 66857

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