APPENDIX B: LABORATORY TEST RESULTS

Appendix B

Laboratory Test Results

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APPENDIX B: LABORATORY TEST RESULTS

B.1 INTRODUCTION

This appendix presents descriptions of the geotechnical laboratory testing procedures and provides the results. Selected samples recovered from the test pits and borings were tested to evaluate the index and engineering properties of soils and rocks, and to provide data that can be used for design of the project. Geotechnical laboratory testing included water content determination, grain size analysis, Atterberg limits determinations, corrosion potential, compaction characteristics, and California Bearing Ratio (CBR) value.

The tests were completed in general accordance with American Association of State Highway and Transportation Officials (AASHTO, 2015) and California Department of Transportation (Caltrans) testing methods. The geotechnical laboratory testing was performed at our laboratory in Glendale, California, and by AP Engineering and Testing, Inc. of Pomona, California. A summary of the laboratory test results is presented in Table B-1. The following sections describe the laboratory testing procedures.

B.2 GEOTECHNICAL INDEX TESTS

B.2.1 Water Content

The natural water content of selected soil samples was determined in general accordance with AASHTO T265, Laboratory Determination of Moisture Content of Soils. Comparison of natural water content of a soil with its index properties can be useful in characterizing soil unit weight, consistency, compressibility, and strength. Water contents are listed in Figure B-6, shown graphically on the boring logs presented in Appendix A, and summarized in Table B-1.

B.2.2 Grain Size Analysis

The grain size distribution of selected samples was determined in general accordance with AASHTO T27, Standard Method of Test for Sieve Analysis of Fine and Coarse Aggregates. This test is useful for classifying soils and for providing correlation with soil properties. Results of these analyses are presented as grain size distribution curves on Figure B-1 and are summarized in Table B-1.

Grain size distribution results could potentially be affected by sample type and drilling method. The sample type, or more specifically the inside diameter of the sampler, directly impacts the maximum particle size that can be sampled. For example, the largest diameter particle that can be sampled by a 2-inch SPT sampler (1.375-inch inside diameter) is

approximately 1.3 inches, regardless of the maximum particle size of the soil unit being sampled.

Grain size analysis also included performing fines content of selected samples. Fines content determination was completed in general accordance with AASHTO T11, Standard Method of Test for Material Finer than 75-µm (No. 200) Sieve in Mineral Aggregates by Washing. Determination of the fines content consists of determining the percentage of material passing the No. 200 sieve (i.e. silt- and clay-sized particles). This test is useful for classifying soils and for providing correlation with soil properties. Results of the percent fines analyses are listed in Figure B-2, shown graphically in the boring logs in Appendix A, and summarized in Table B-1.

B.2.3 Atterberg Limits

Soil plasticity was determined by performing Atterberg limits tests on selected fine-grained samples. The tests were completed in general accordance with AASHTO T89, Standard Method of Test for Determining the Liquid Limit of Soils, and AASHTO T90, Standard Method of Test for Determining the Plastic Limit and Plasticity Index of Soils. The Atterberg limits include liquid limit (LL), plastic limit (PL), and plasticity index (PI; PI=LL-PL). These limits are generally used to assist in classification of soils, to indicate soil consistency (when compared to natural water content), and to provide correlation to soil properties. The results of the Atterberg limits tests are plotted on plasticity charts on Figure B-3, shown graphically in the boring logs in Appendix A, and summarized in Table B-1.

B.3 GEOTECHNICAL ENGINEERING PROPERTY TESTS

B.3.1 Corrosion

Corrosion testing of select samples was performed for sulfate and chloride concentrations, resistivity, and pH. Testing for resistivity and pH were completed in general accordance with California Department of Transportation Test 643 Part 1, Method of Field Resistivity Survey and Sampling for Laboratory Tests, and Test 643 Part 3, Method for Determining pH of Soil, respectively (California Test Method [CTM], 2007). Sulfate content testing was performed in accordance with the California Department of Transportation Test 417, Method of Testing Soils and Waters for Sulfate Content (CTM, 2006a). Chloride content was done in accordance with California Department of Transportation Test 422, Method of Testing Soils and Waters for Chloride Content (CTM, 2006b). The tested parameters are described below:

- **Sulfate and Chloride Concentration**: Sulfate is an ion that can lead to damage of metallic and concrete structures. Chloride is an ion that converts to hydrochloric acid,

which can cause corrosion of metals. Also, its presence tends to decrease the soil resistivity. Chlorides may be found naturally in soils deposited as a result of brackish groundwater and historical geologic sea beds, from high organic content, or from the presence of pollutants.

Sulfate classification, as defined by ACI-318-14 (ACI, 2014) is presented within the table below:

Exhibit B-1: Sulfate Exposures (ACI, 2014)

Dissolved Sulfate (SO4) ppm	Sulfate Exposure
< 150	Negligible (S0)
150 - < 1,500	Moderate (S1)
1,500 – 10,000	Severe (S2)
> 10,000	Very Severe (S3)

Chloride concentrations ≥ 500 ppm are corrosive to ferrous materials (County of Los Angeles, 2013).

- **Resistivity**: Soil resistivity is a measure of the tendency for electrical currents produced during the corrosion process to flow freely through the electrolyte. A decrease in the resistivity relates to an increase in potential corrosion activity. Roberge (2012) provides corrosivity ratings based on soil resistivity, and is presented in the table below:

Exhibit B-2: Corrosivity Ratings based on Soil Resistivity (Roberge, 2012)

Soil Resistivity (ohm-cm)	Corrosivity Rating
> 20,000	Essentially non-corrosive
10,000 – 20,000	Mildly corrosive
5,000 – 10,000	Moderately corrosive
3,000 – 5,000	Corrosive
1,000 – 3,000	Highly Corrosive
< 1,000	Extremely Corrosive

NOTES:
ohm-cm = ohm centimeter

- **pH**: Soil pH is an indication of the acidity or alkalinity of soil and is measured in pH units. Soil pH is defined as the negative logarithm of the hydrogen ion concentration. The pH scale goes from 0 to 14 with a pH of 7 as the neutral point. As the amount of hydrogen ions in the soil increases, the soil pH decreases, thus becoming more acidic.

Soil with a pH of 5.5 or less are considered damaging to concrete foundations (County of Los Angeles, 2013). Typical soil pH levels range between 5.0 and 8.0 (Roberge, 2012).

The test results are presented in Table B-1. The concentration of dissolved sulfates measured were 58 ppm or less, which indicates that the onsite soils pose a negligible exposure of sulfate attack on concrete (exposure class S0). The concentration of chloride measured were 34 ppm or less, which is considered negligible. The pH test results ranged from 6.6 to 7.2, which suggest a normal range for soils in terms of corrosion potential.

The minimum resistivity test results ranged from 4,988 ohm-cm to 46,995 ohm-cm, with relatively finer-grained soils having lower results and the relatively granular soils having the relatively higher results. The table below summarizes the resistivity results:

Exhibit B-3: Resistivity Test Results

Subsurface Exploration	Geologic Unit	USCS	Resistivity (ohm-cm)
TP-1	Qts	SC	4,988
TP-2B	Qts	SC	6,818
TP-4B	Qts	SM	11,806
TP-8	Qts	SP-SC	18,225
B-12 and B-14[1]	af and Qts	SP-SC	11,850
B-22, B-24, B-25, and B-27[1]	af and Qts	SP-SC	11,950
B-28, B-29, B-31, and B-32[1]	af, Qts, Qal	SM, SP, GP	14,430
B-39[2]	Qal	SM	46,995

NOTES:
1 Combined samples
2 We collected the sample from the shoulder of the roadway

The minimum resistivity values measured in the samples indicate soils within the upper 0.5 miles of the roadway have moderately corrosive to corrosive potential, while the remaining soils are mildly to moderately corrosive to underground metallic structures.

A specialist in corrosion-resistance design should review the results for any additional corrosion hazard mitigation actions.

B.3.2 Modified Proctor

Modified Proctor tests were completed on select samples by AP Engineering and Testing, Inc., to determine compaction characteristics of the subgrade soil. The tests were completed in general accordance with AASHTO T180, Standard Method of Test for Moisture-Density Relations of Soils Using a 4.54-kg (10-lb) Rammer and a 457-mm (18-in.) Drop. The compaction test is used to estimate the maximum dry density and optimum moisture

content of the tested soil. Compaction test results are summarized in Table B-1 and presented in Figure B-4.

B.3.3 California Bearing Ratio (CBR)

California Bearing Ratio (CBR) tests were completed on select samples by AP Engineering and Testing, Inc. The tests were completed in general accordance with AASHTO T193, Standard Method of Test for The California Bearing Ratio. The CBR test is used to evaluate the mechanical strength of subgrade soils underlying the existing roadway. CBR test results are summarized in Table B-1 and presented in Figure B-5.

B.4 REFERENCES

American Association of State Highway and Transportation Officials (AASHTO), 2015, Standard specifications for transportation materials and methods of sampling and testing (35th edition): Washington, D. C., American Association of State Highway and Transportation Officials.

American Concrete Institute (ACI), 2014, Building Code Requirements for Structural Concrete and Commentary, Farmington Hills, Michigan, ACI 318-14.

California Test Methods (CTM), 2006a, Materials Engineering and Testing Services - California Test Methods: Method of Testing Soils and Waters for Sulfate Content: Sacramento, Ca., California Department of Transportation, Test 417.

California Test Methods (CTM), 2006b, Materials Engineering and Testing Services - California Test Methods: Method of Testing Soils and Waters for Chloride Content: Sacramento, Ca., California Department of Transportation, Test 422.

California Test Methods (CTM), 2007, Materials Engineering and Testing Services - California Test Methods: Method for Determining Field and Laboratory Resistivity and pH Measurements for Soil and Water: Sacramento, Ca., California Department of Transportation, Test Method 643.

County of Los Angeles, 2013, Manual for Preparation of Geotechnical Reports, Department of Public Works, County of Los Angeles: report dated July 2013.

Roberge, P.R., 2012, Handbook of corrosion engineering (2nd ed.): N.Y. McGraw-Hill.

Table B-1
Summary of Laboratory Test Results by Test Pit and Boring

SAMPLE DATA				UCSC Symbol[1]	AASHTO Classification	Natural Moisture Content	GRAIN-SIZE ANALYSIS[2]			ATTERBERG LIMITS			COMPACTION TEST		CBR[3]	CORROSION			
Boring or Test Pit	Sample	Depth (feet)					Gravel	Sand	Fines	Liquid Limit	Plastic Limit	Plasticity Index	Maximum Dry Density	Optimum Moisture		pH	Resistivity	Sulfates	Chlorides
		Top	Bottom			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(pcf)	(%)	(%)		(ohm-cm)	(ppm)	(ppm)
TP-1	S-1	2.0	5.0	SC	A-4		22	36	42	23	14	9				6.6	4,988	32	31
TP-2B	S-1	1.5	5.0	SC-SM	A-4		21	38	41	21	14	7				6.7	6,818	33	32
TP-4B	S-1	2.0	4.0	SM	A1-b		33	51	16	NV	NP	NP				7.1	11,806	40	33
TP-5	S-1	1.0	5.0			39.4													
TP-6	S-1	1.0	5.0			26.9													
TP-7	S-1	1.0	5.0			37.5													
TP-8	S-1	2.0	5.0	SM	A1-b		17	62	21	NV	NP	NP				7.1	18,225	33	32
SW-B-01	S-1	5.0	6.5			8.5													
SW-B-02	S-1	3.0	3.5			5.9													
SW-B-03	S-1	5.0	6.5		A-4	10.2				24	18	6							
SW-B-04	S-1	5.0	6.5			7.2													
	S-2	10.0	10.5																
	S-3	11.5	11.6																
SW-B-05	S-1	0.2	5.0			13.3													
	S-2	5.0	6.5			11.5			15.5										
	S-3	10.0	11.5			12													
SW-B-06	S-1	0.3	5.0			10.1													
	S-2	5.0	6.5			10.5													
	S-3	10.0	11.5	SM	A-2	8.9	25	46	29										
	S-4	15.0	16.5			15.9													
	S-5	20.0	21.5			12.6													
SW-B-07	S-1	2.0	5.0			20.8			42										
	S-2	5.0	6.5			6.3													
	S-3	10.0	11.5			7.5													
SW-B-08	S-1	5.0	5.3			8.6													
	S-2	8.5	10.0																
	S-3	10.0	10.1																
SW-B-09	S-1	5.0	6.5			15.3													
	S-2	10.0	11.5	SM		11.8	39	45	16										
	S-3	12.5	-																
SW-B-10	S-1	0.3	5.0			45.4													
	S-2	5.0	6.5			61.8													
	S-3	10.0	11.5	SP-SM		91.8	36	52	12										
	S-4	15.0	16.5			2.7													
	S-5	20.0	21.5																
	S-6	25.5	-																
SW-B-11	S-1	5.0	6.5			9.2													
	S-2	10.0	11.5			12.6			20.4										
	S-3	13.5	13.6																

SAMPLE DATA				UCSC Symbol[1]	AASHTO Classification	Natural Moisture Content	GRAIN-SIZE ANALYSIS[2]			ATTERBERG LIMITS			COMPACTION TEST		CBR[3]	CORROSION			
Boring or Test Pit	Sample	Depth (feet)					Gravel	Sand	Fines	Liquid Limit	Plastic Limit	Plasticity Index	Maximum Dry Density	Optimum Moisture		pH	Resistivity	Sulfates	Chlorides
		Top	Bottom			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(pcf)	(%)	(%)		(ohm-cm)	(ppm)	(ppm)
SW-B-12	S-1	0.2	5.0			21.7													
	S-2	5.0	6.5			12.9													
	S-3	10.0	11.5							29	21	8							
	S-4	13.0	14.5			9.3													
	S-5	15.0	15.3																
SW-B-13	S-1	5.0	6.5			21.7				27	20	7							
	S-2	10.0	11.5			16.9			27.8										
	S-3	11.5	11.5																
SW-B-14	S-1	0.3	5.0																
	S-2	5.0	6.5			8													
	S-3	8.5	-																
SW-B-15	S-1A,B	0.3	5.0			31.5													
	S-2	5.0	6.5			14.2													
	S-3	10.0	10.8			5.5													
	S-4	11.0	-																
SW-B-16	S-1	5.0	6.5			13.6													
	S-2	10.0	11.5			11.2													
	S-3	15.0	15.1																
SW-B-17	S-1	0.3	5.0			13.4													
	S-2	5.0	6.5	SM		9.9	15	36	49										
	S-3	6.5	8.5			8.7			64.4										
	S-4A	10.0	10.8			14.5													
	S-4B	10.8	11.5			14													
	S-5	12.0	14.0			12.7													
	S-6	15.0	15.5			19.3													
	S-7	20.0	20.5			11.4													
	S-8	25.0	25.3																
SW-B-18	S-1	0.4	5.0			15.2													
	S-2	5.0	6.5			21.6			20.6										
	S-3	7.5	7.7																
SW-B-19	S-1	5.0	6.5	SM		17	40	43	17										
	S-2	10.0	11.5			17.9				47	21	26							
	S-3A	15.0	15.8			15.5													
	S-3B	15.8	16.5			10.6													
	S-4	18.5	-																
SW-B-20	S-1	5.0	6.5			10.1													
	S-2	9.5	-																
SW-B-21	S-1	5.0	6.5			11.4													
SW-B-22	S-1	0.2	5.0																
	S-2	5.0	6.5			22.2				29	21	8							
	S-3	6.5	8.5																

Table B-1
Summary of Laboratory Test Results by Test Pit and Boring

SAMPLE DATA				UCSC Symbol[1]	AASHTO Classification	Natural Moisture Content	GRAIN-SIZE ANALYSIS[2]			ATTERBERG LIMITS			COMPACTION TEST		CBR[3]	CORROSION			
Boring or Test Pit	Sample	Depth (feet)					Gravel	Sand	Fines	Liquid Limit	Plastic Limit	Plasticity Index	Maximum Dry Density	Optimum Moisture		pH	Resistivity	Sulfates	Chlorides
		Top	Bottom			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(pcf)	(%)	(%)		(ohm-cm)	(ppm)	(ppm)
SW-B-23	S-1	0.2	3.0			54.7													
	S-2	3.0	5.0																
	S-3	5.0	6.5			22.8													
SW-B-24	S-1	0.2	3.0																
	S-2	4.0	5.0			28.6				NV	NP	NP							
	S-3	5.0	6.5	SC	A-2	25.1	30	44	26										
SW-B-25	S-1	0.2	3.0																
	S-2	3.0	5.0																
	S-3	5.0	6.5			35.9													
SW-B-26	S-1	0.3	5.0			11.6													
	S-2	5.0	6.5	SM	A-2	11.6	22	52	26										
SW-B-27	S-1	0.2	2.0																
	S-2	3.0	-																
SW-B-28	S-1[4]	0.3	5.0	SM	A-1-b		22	56	22	NP	NP	NP	86	18	48				
	S-2	5.0	6.5	GM		12.6	46	36	18										
SW-B-29	S-1	0.2	1.0																
	S-2	1.0	2.0	SM		13.6	38	43	19										
SW-B-30A	S-1	0.2	5.0																
SW-B-30B	S-1	0.2	5.0																
	S-2	5.0	5.5			22.8													
SW-B-31A	S-1	0.3	4.0																
SW-B-31B	S-1	0.3	3.5			11.1													
	S-2	3.5	4.6			6.5													
SW-B-32	S-1	0.3	5.0																
	S-2	5.0	6.5																
SW-B-33	S-1	5.0	6.5	SM	A-2	30.8	7	67	26										
SW-B-34	S-1	0.2	5.0			4.5													
	S-2	5.0	6.5	SP-SM		3.7	35	54	11										
SW-B-35	S-1	5.0	6.5			5.9													
SW-B-36	S-1	5.0	6.5			19.4				NV	NP	NP							
SW-B-37	S-1	5.0	6.5			18.8													
SW-B-38	S-1	5.0	6.5			52.5				NV	NP	NP							
SW-B-39	S-1[4]	0.2	5.0	SM	A-1-b		26	59	15	NP	NP	NP	95	22	8	6.9	46,995	42	34
	S-2	5.0	6.0	SM	A-2	15.8	16	52	32										
	S-3	5.0	6.0			12.8													
SW-B-40	S-1	0.3	5.0			26.2													
	S-2	5.0	5.7			14.8													
	S-3	5.0	5.7																
SW-B-41	S-1B	5.0	5.8	OH		278.2				115	84	31							
	S-1A	5.8	6.5	OH		108.4				83	63	20							
SW-B-42	S-1	0.2	5.0			17.2													
	S-2	5.0	6.5			25.5													

Table B-1
Summary of Laboratory Test Results by Test Pit and Boring

SAMPLE DATA				UCSC Symbol[1]	AASHTO Classification	Natural Moisture Content	GRAIN-SIZE ANALYSIS[2]			ATTERBERG LIMITS			COMPACTION TEST		CBR[3]	CORROSION			
Boring or Test Pit	Sample	Depth (feet)					Gravel	Sand	Fines	Liquid Limit	Plastic Limit	Plasticity Index	Maximum Dry Density	Optimum Moisture		pH	Resistivity	Sulfates	Chlorides
		Top	Bottom			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(pcf)	(%)	(%)		(ohm-cm)	(ppm)	(ppm)
SW-B-43	S-1	0.3	5.0			13.1													
	S-2	5.0	6.5	SM		11.5	7	50	43										
SW-B-44	S-2	5.0	6.5			12.9			24.4										
	S-3	7.5	9.0			10.2													
	S-4	9.0	10.5			7.4													
	S-5	12.5	14.0			14.9													
	S-6	15.0	15.2			12.4													
SW-B-45	S-2	5.0	6.5	SM		20.6	23	51	26										
	S-3	7.5	9.0			28.5													
	S-5	12.5	14.0			26.0													
	S-6	15.0	16.5			7.5													
	S-7	17.5	19.0			9.4													
	S-8	20.0	21.0			37.1													
SW-B-46	S-1	0.0	5.0	SW-SM	A-1-b		12	76	12	NP	NP	NP	126	10	34				
	S-2	5.0	6.5	SM		10.7	18	59	23										
	S-3	7.5	9.0			9.5													
	S-4	10.0	11.5			7.7													
	S-5	12.5	14.0			11.0													
	S-6	15.0	16.5			11.8													
	S-7	17.5	9.0			17.0													
	S-8	20.0	21.5	GP-GM		12.6	63	29	8										
	S-9	22.5	24.0			10.0													
	S-10	25.0	26.5			19			30.2	39	20	19							
	S-11	27.5	29.0			19.1													
	S-12	30.0	31.5			17.8													
SW-B-47	S-2	2.5	4.0			10.5			32.5										
	S-3	5.0	6.5	SW-SM		3.1	25	63	12										
	S-4	7.5	9.0			3			16.6										
	S-5	10.0	10.8			2.2													
	S-6	12.0	12.8			5.4													
SW-B-48	S-2	2.5	4.0			12.4													
	S-3	5.0	6.5	SM		9.5	16	61	23										
	S-4	7.5	9.0			3.3			12.3										
	S-5	10.0	11.5			6.3													
	S-6	12.5	14.0			5.8													
	S-7	15.0	16.5			4.7													
	S-8	16.5	17.5			8.3													

Table B-1
Summary of Laboratory Test Results by Test Pit and Boring

SAMPLE DATA				UCSC Symbol[1]	AASHTO Classification	Natural Moisture Content	GRAIN-SIZE ANALYSIS[2]			ATTERBERG LIMITS			COMPACTION TEST		CBR[3]	CORROSION			
Boring or Test Pit	Sample	Depth (feet)					Gravel	Sand	Fines	Liquid Limit	Plastic Limit	Plasticity Index	Maximum Dry Density	Optimum Moisture		pH	Resistivity	Sulfates	Chlorides
		Top	Bottom			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(pcf)	(%)	(%)		(ohm-cm)	(ppm)	(ppm)
SW-B-49	S-2	2.5	4.0			9.5													
	S-3	5.0	6.5			9			23.8										
	S-4	7.5	9.0	SM		10.6	33	52	15										
	S-5	10.0	11.5			36.1			22.5	NP	NP	NP							
	S-6	12.5	14.0			31.5			20.6										
	S-7	15.0	16.5			27.1			57.1	37	22	15							
	S-8	17.5	18.0			30.8													
	S-9	18.5	18.8			29.0													
SW-B-50	S-2	2.5	4.0			51.8													
	S-3	5.0	6.5	SP-SM		74.2*	45	46	9										
	S-4	7.5	9.0			61.2													
	S-5	10.0	11.5			6.7			15.8										
	S-6	12.5	14.0			7.8													
	S-7	15.0	16.5			9.9													
	S-8	17.5	19.0			14.3													
	S-9	19.0	20.5			14.9													
SW-B-51	S-2	2.5	4.0			14.1			18.2										
	S-3	5.0	6.5			7.9													
SW-B-12 & SW-B-14 combined	S-1	0.0	5.0										112	13	54	6.9	11,850	50	33
SW-B-22, SW-B-24, SW-B-25, & SW-B-27 combined	S-1	0.0	5.0										113	12	38	7.2	11,950	58	32
SW-B-28, SW-B-29, SW-B-31AB, SW-B-32 combined	S-1	0.0	5.0										98	19	28	7.1	14,430	36	32

Notes:

[1] Refer to Appendix A, Figure A-1 for definitions.

[2] Gravel defined as particles larger than the No. 10 seive size; Sand as particles between the No. 10 and No. 200 sieve sizes,

[3] The CBR reported for for 0.1 inch penetration at 95 percent relative compaction using the modified proctor method.

[4] SW-B-28 S-1 and SW-B-39 S-1 were samples collected from the shoulder of road at the same station the boring was drilled.

NV = No Value; NP = Non-Plastic

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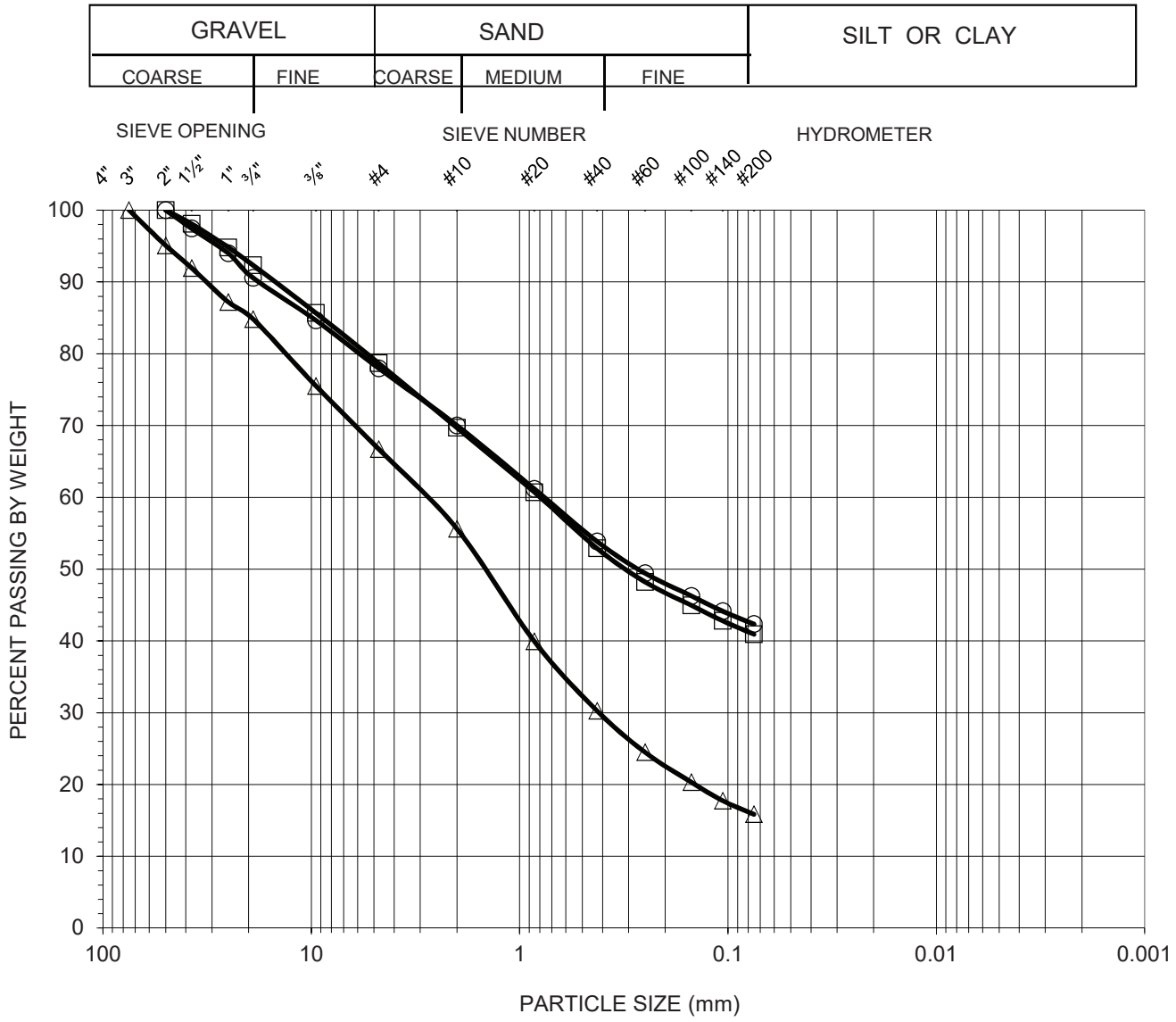
GRAIN SIZE DISTRIBUTION CURVE
AASHTO T27

Client Name:	Shannon & Wilson	Tested by:	NG	Date:	06/22/18
Project Name:	Reds Meadow - Test Pits	Computed by:	JP	Date:	06/22/18
Project Number:	100062	Checked by:	AP	Date:	06/25/18



Symbol	Test Pit No.	Sample No.	Sample Depth (feet)	Percent			Atterberg Limits LL:PL:PI	Soil Type U.S.C.S
				Gravel	Sand	Silt & Clay		
○	TP-1	1	2-5	22	36	42	23:14:9	SC
□	TP-2B	1	1.5-5	21	38	41	21:14:7	SC-SM
△	TP-4B	1	2-4	33	51	16	N/P	SM

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GRAIN SIZE DISTRIBUTION CURVE
AASHTO T27

Client Name:	Shannon & Wilson	Tested by:	NG	Date:	06/22/18
Project Name:	Reds Meadow - Test Pits	Computed by:	JP	Date:	06/22/18
Project Number:	100062	Checked by:	AP	Date:	06/25/18

Symbol	Test Pit No.	Sample No.	Sample Depth (feet)	Percent			Atterberg Limits LL:PL:PI	Soil Type U.S.C.S
				Gravel	Sand	Silt & Clay		
○	TP-8	1	2-5	17	62	21	N/P	SM

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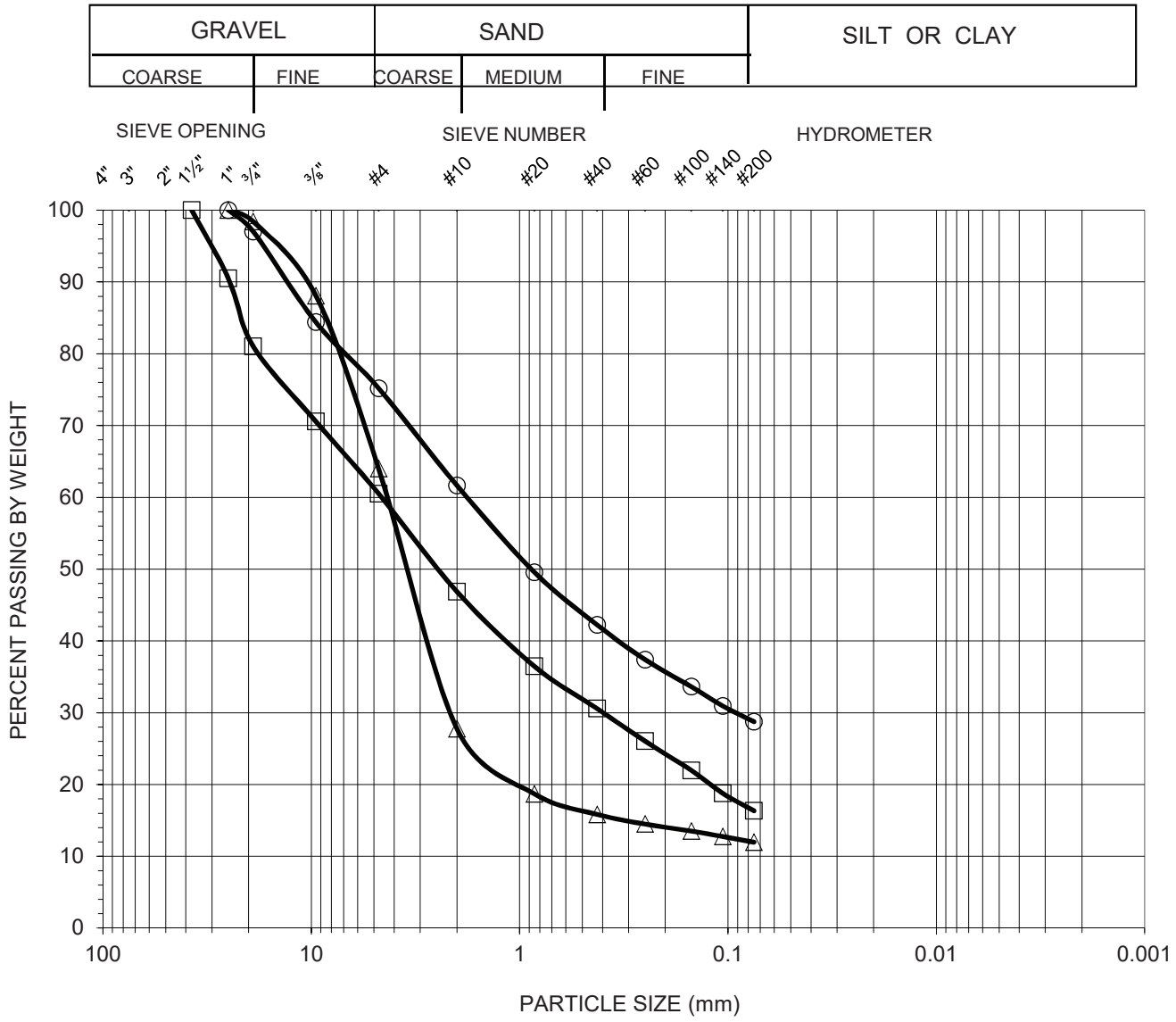
GRAIN SIZE DISTRIBUTION CURVE
AASHTO T27

Client Name:	Shannon & Wilson	Tested by:	NG	Date:	06/22/18
Project Name:	Reds Meadow - G2 Borings	Computed by:	JP	Date:	06/22/18
Project Number:	100062	Checked by:	AP	Date:	06/22/18



Symbol	Boring No.	Sample No.	Sample Depth (feet)	Percent			Atterberg Limits LL:PL:PI	Soil Type U.S.C.S
				Gravel	Sand	Silt & Clay		
○	B-6	3	10-11.5	25	46	29	N/A	SM
□	B-9	2	10-11.5	39	45	16	N/A	SM
△	B-10	3	10-11.5	36	52	12	N/A	SP-SM*

**Note: Sample contains pieces of white porous material*

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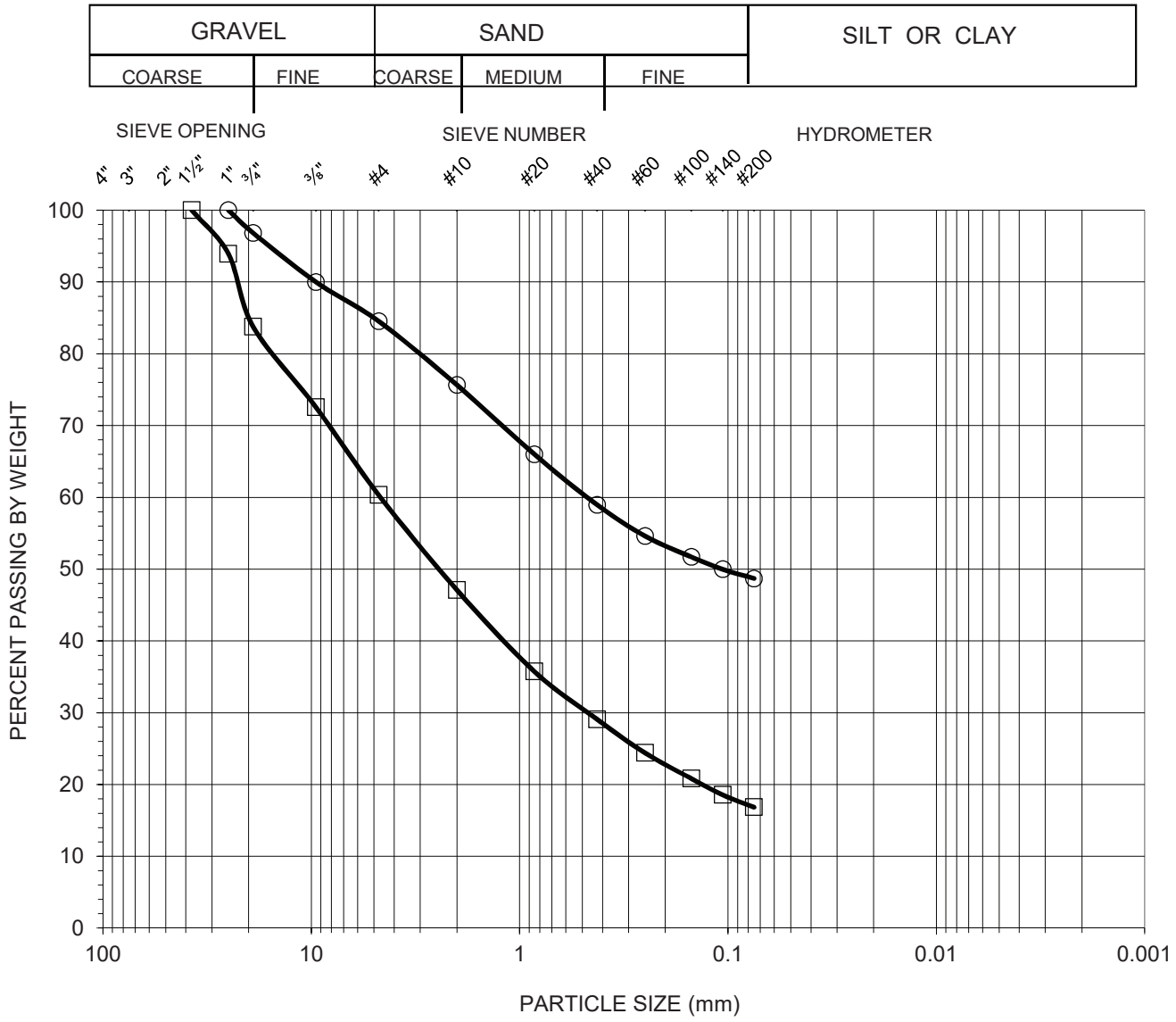
GRAIN SIZE DISTRIBUTION CURVE
AASHTO T27

Client Name:	Shannon & Wilson	Tested by:	NG	Date:	06/22/18
Project Name:	Reds Meadow - G2 Borings	Computed by:	JP	Date:	06/22/18
Project Number:	100062	Checked by:	AP	Date:	06/22/18



Symbol	Boring No.	Sample No.	Sample Depth (feet)	Percent			Atterberg Limits LL:PL:PI	Soil Type U.S.C.S
				Gravel	Sand	Silt & Clay		
○	B-17	2	5-6.5	15	36	49	N/A	SM
□	B-19	1	5-6.5	40	43	17	N/A	SM

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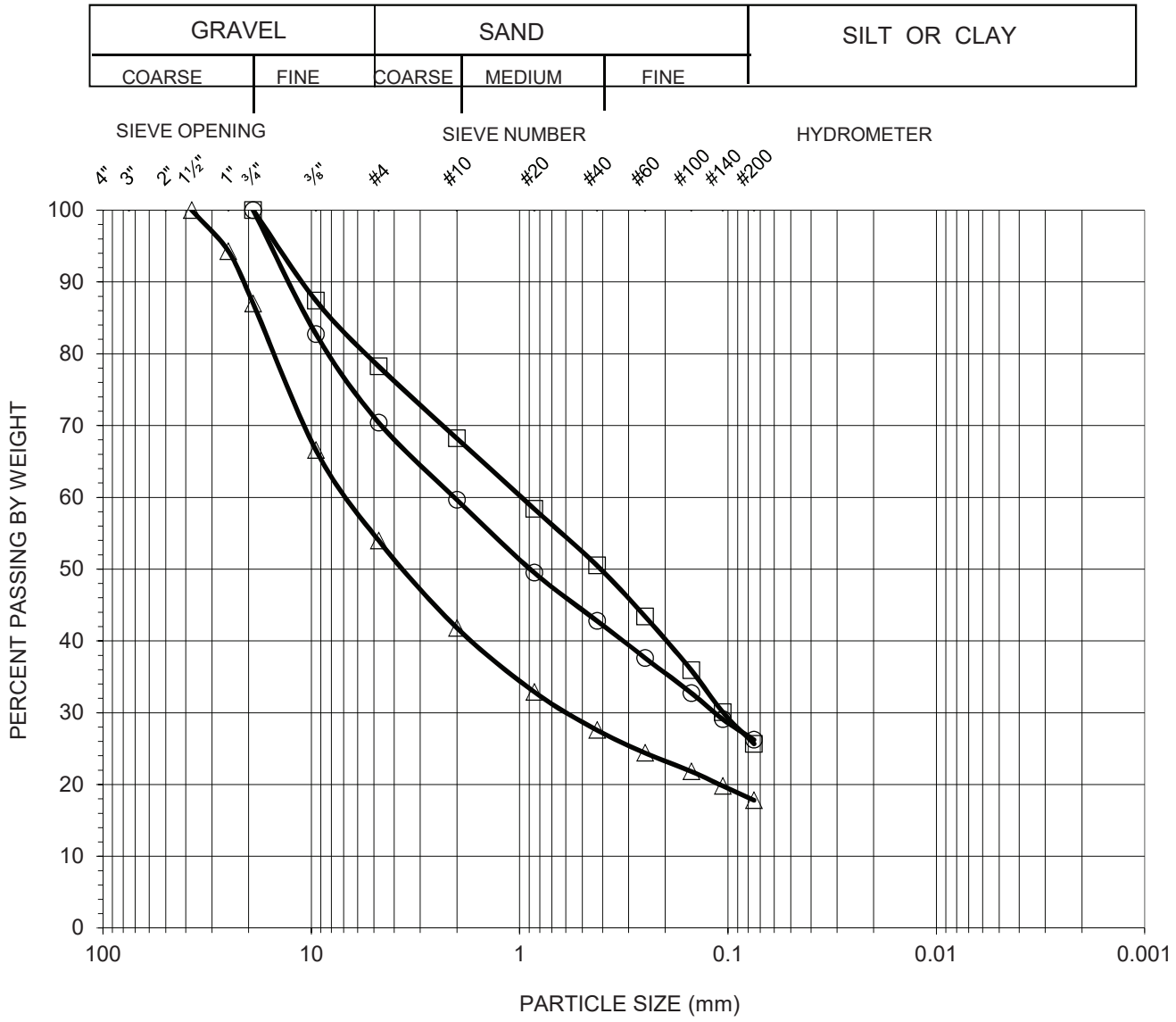
GRAIN SIZE DISTRIBUTION CURVE
AASHTO T27

Client Name:	Shannon & Wilson	Tested by:	NG	Date:	06/23/18
Project Name:	Reds Meadow - V1 Borings	Computed by:	JP	Date:	06/26/18
Project Number:	100062	Checked by:	AP	Date:	06/27/18



Symbol	Boring No.	Sample No.	Sample Depth (feet)	Percent			Atterberg Limits LL:PL:PI	Soil Type U.S.C.S
				Gravel	Sand	Silt & Clay		
○	B-24	3	5-6.5	30	44	26	N/A	SC*
□	B-26	2	5-6.5	22	52	26	N/A	SM
△	B-28	2	5-6.5	46	36	18	N/A	GM

**Note: Based on visual classification of sample*

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GRAIN SIZE DISTRIBUTION CURVE
AASHTO T27

Client Name:	Shannon & Wilson	Tested by:	NG	Date:	06/23/18
Project Name:	Reds Meadow - V1 Borings	Computed by:	JP	Date:	06/26/18
Project Number:	100062	Checked by:	AP	Date:	06/27/18

Symbol	Boring No.	Sample No.	Sample Depth (feet)	Percent			Atterberg Limits LL:PL:PI	Soil Type U.S.C.S
				Gravel	Sand	Silt & Clay		
○	B-29	2	1-2.0	38	43	19	N/A	SM
□	B-33	1	5-6.5	7	67	26	N/A	SM
△	B-34	2	5-6.5	35	54	11	N/A	SP-SM

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GRAIN SIZE DISTRIBUTION CURVE
AASHTO T27

Client Name:	Shannon & Wilson	Tested by:	NG	Date:	06/23/18
Project Name:	Reds Meadow - V1 Borings	Computed by:	JP	Date:	06/26/18
Project Number:	100062	Checked by:	AP	Date:	06/27/18

Symbol	Boring No.	Sample No.	Sample Depth (feet)	Percent			Atterberg Limits LL:PL:PI	Soil Type U.S.C.S
				Gravel	Sand	Silt & Clay		
○	B-39	2	5-6.5	16	52	32	N/A	SM
□	B-43	2	5-6.5	7	50	43	N/A	SM

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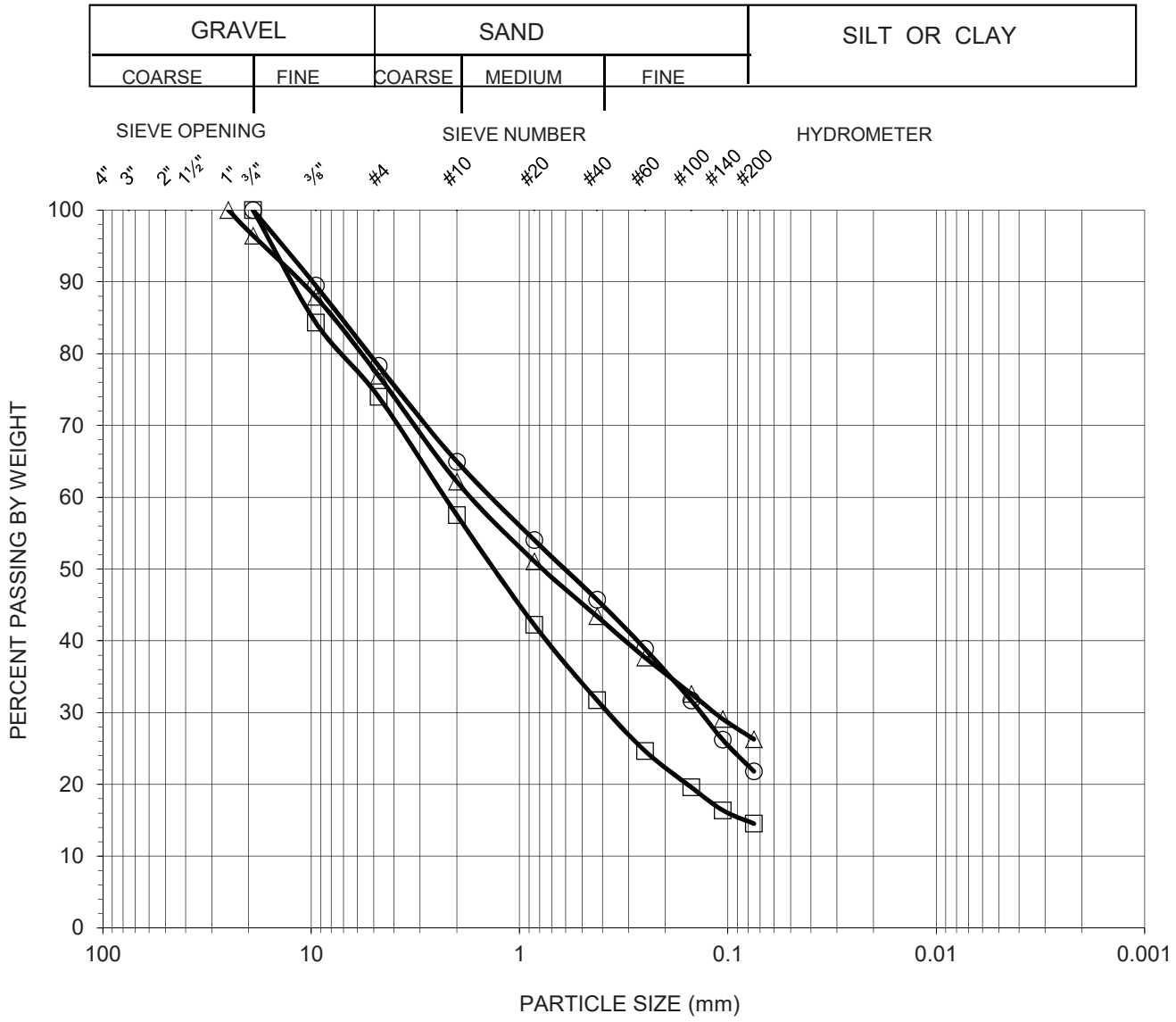
GRAIN SIZE DISTRIBUTION CURVE
AASHTO T27

Client Name:	Shannon & Wilson	Tested by:	AM	Date:	11/21/18
Project Name:	Reds Meadow Road	Computed by:	JP	Date:	11/21/18
Project Number:	100062-002	Checked by:	AP	Date:	11/21/18



Symbol	Boring No.	Sample No.	Sample Depth (feet)	Percent			Atterberg Limits LL:PL:PI	Soil Type U.S.C.S
				Gravel	Sand	Silt & Clay		
○	B-28	1	0	22	56	22	N/P	SM
□	B-39	1	0	26	59	15	N/P	SM
△	B-45	2	5	23	51	26	N/A	SM

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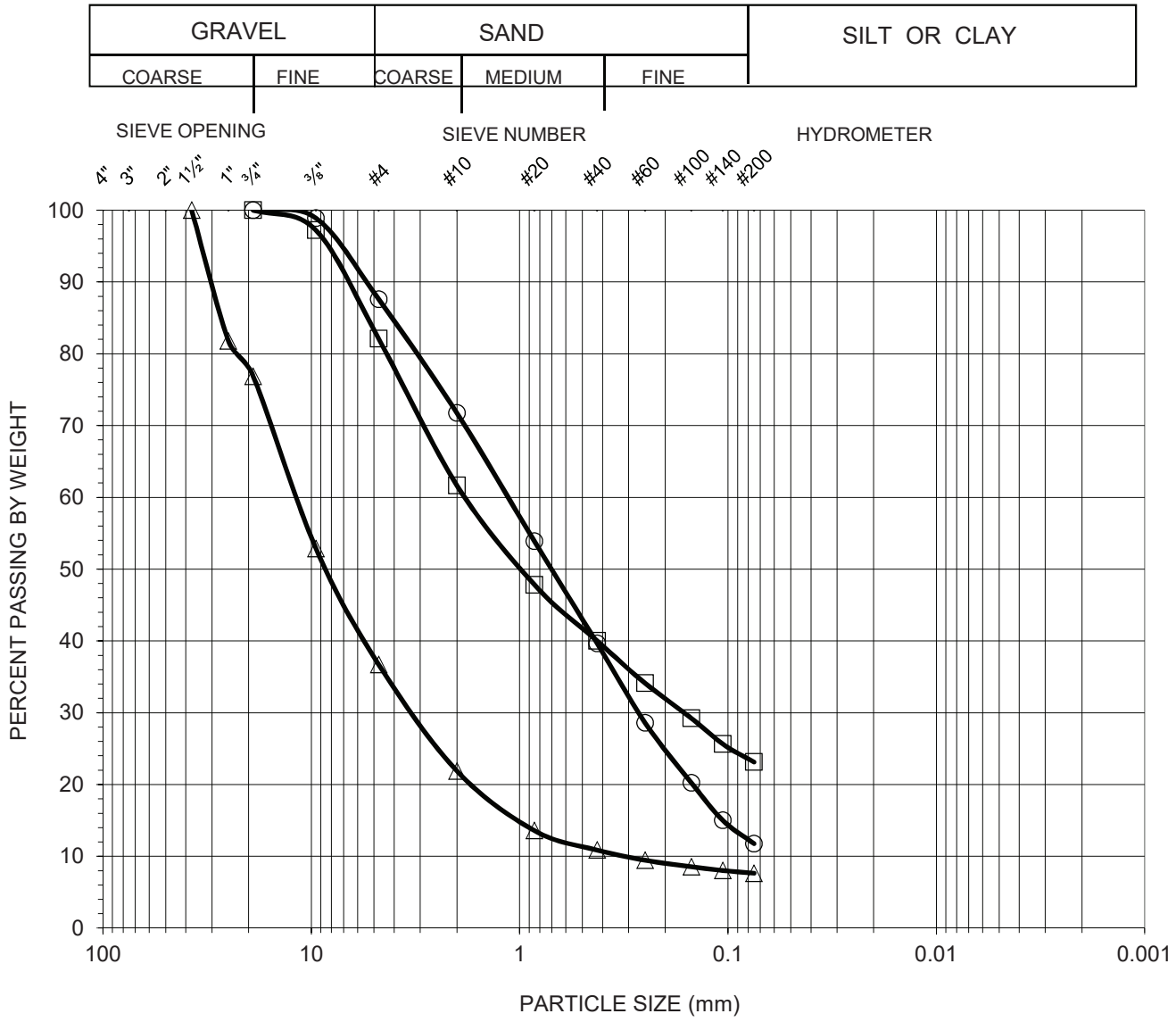
GRAIN SIZE DISTRIBUTION CURVE
AASHTO T27

Client Name:	Shannon & Wilson	Tested by:	AM	Date:	11/21/18
Project Name:	Reds Meadow Road	Computed by:	JP	Date:	11/21/18
Project Number:	100062-002	Checked by:	AP	Date:	11/21/18



Symbol	Boring No.	Sample No.	Sample Depth (feet)	Percent			Atterberg Limits LL:PL:PI	Soil Type U.S.C.S
				Gravel	Sand	Silt & Clay		
○	B-46	1	0	12	76	12	N/P	SW-SM
□	B-46	2	5	18	59	23	N/A	SM
△	B-46	8	20	63	29	8	N/A	GP-GM

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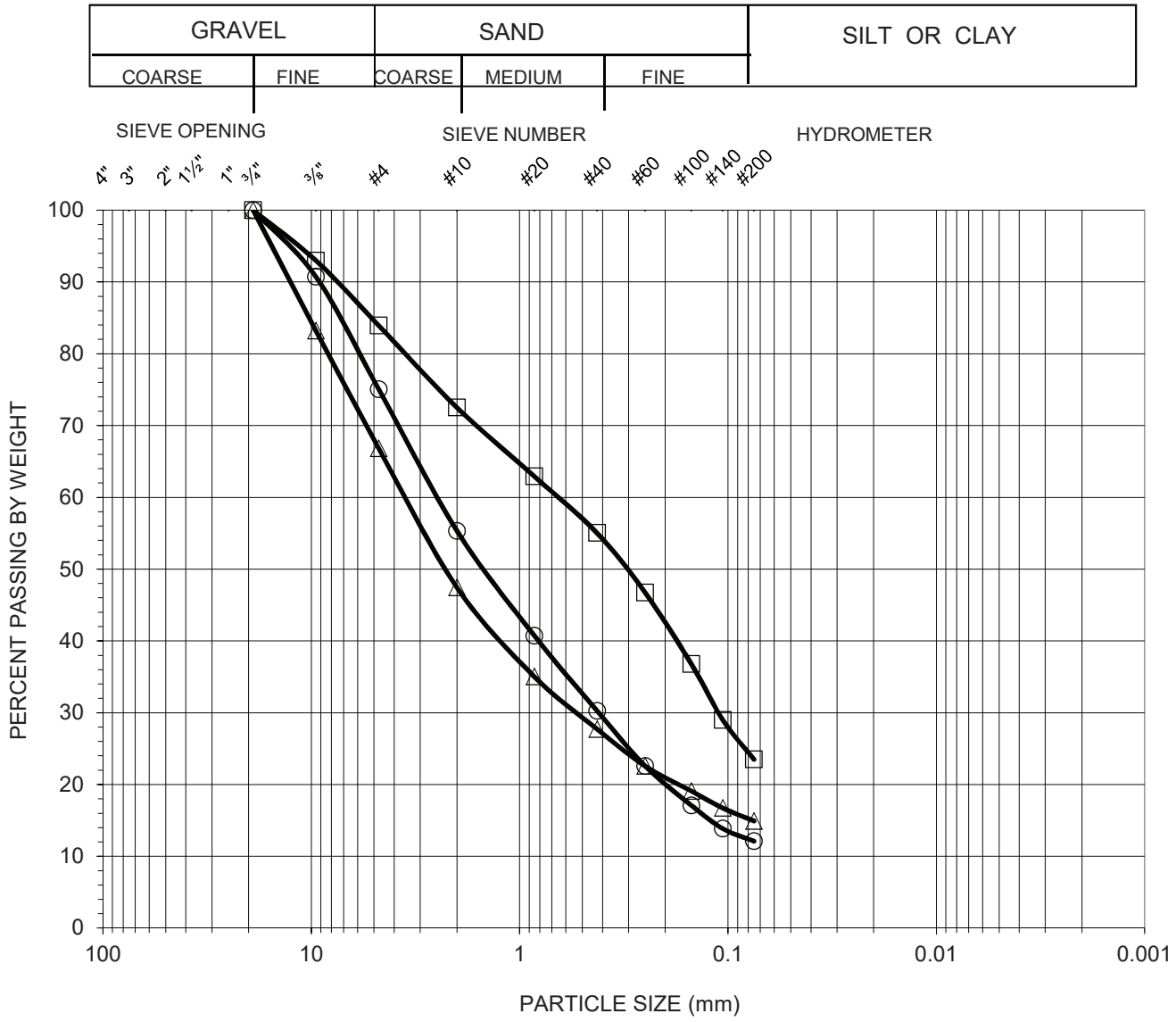
GRAIN SIZE DISTRIBUTION CURVE
AASHTO T27

Client Name:	Shannon & Wilson	Tested by:	AM	Date:	11/21/18
Project Name:	Reds Meadow Road	Computed by:	JP	Date:	11/21/18
Project Number:	100062-002	Checked by:	AP	Date:	11/21/18



Symbol	Boring No.	Sample No.	Sample Depth (feet)	Percent			Atterberg Limits LL:PL:PI	Soil Type U.S.C.S
				Gravel	Sand	Silt & Clay		
○	B-47	3	5	25	63	12	N/A	SW-SM
□	B-48	3	5	16	61	23	N/A	SM
△	B-49	4	7.5	33	52	15	N/A	SM

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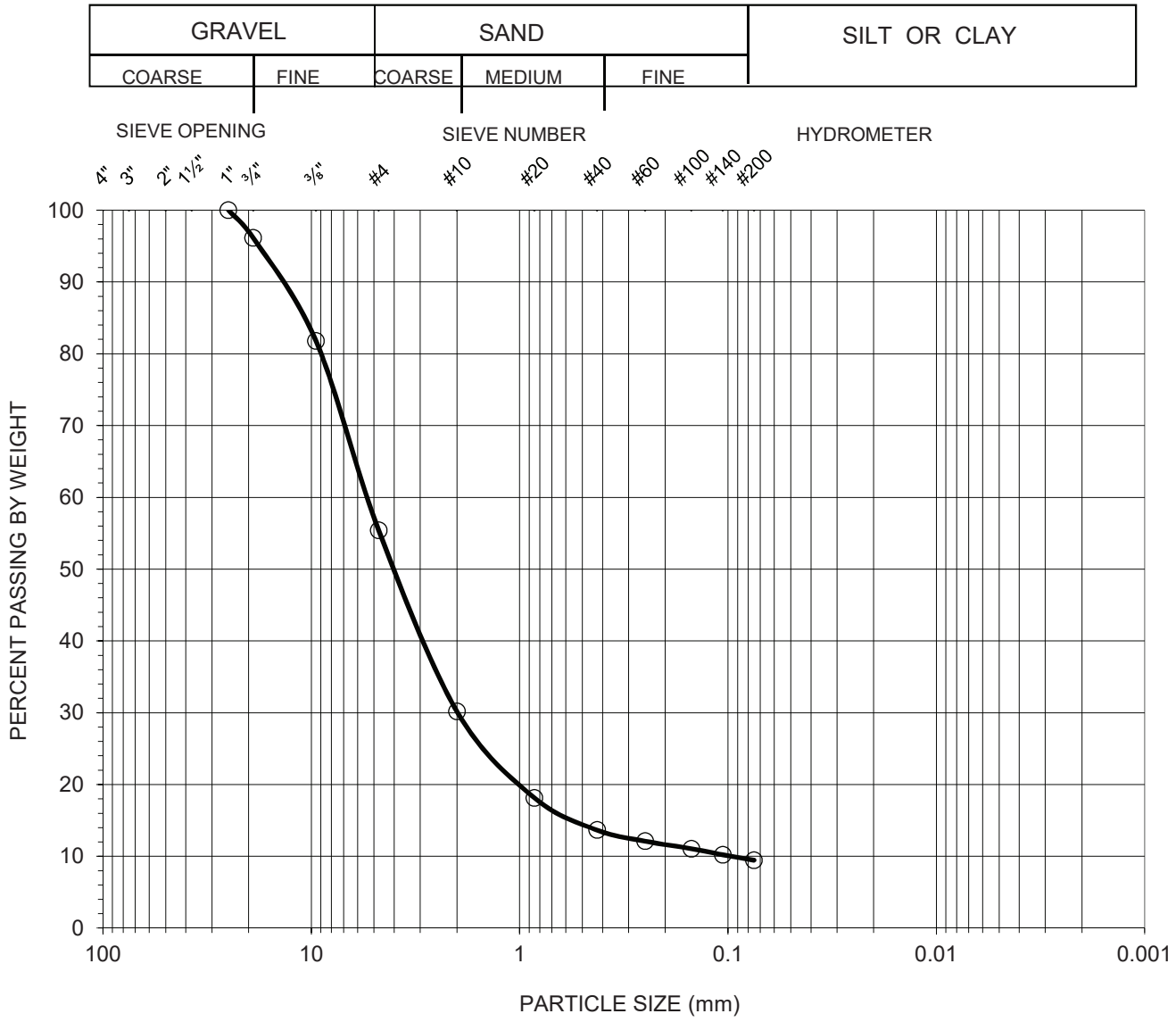
GRAIN SIZE DISTRIBUTION CURVE
AASHTO T27

Client Name:	Shannon & Wilson	Tested by:	AM	Date:	11/21/18
Project Name:	Reds Meadow Road	Computed by:	JP	Date:	11/21/18
Project Number:	100062-002	Checked by:	AP	Date:	11/21/18



Symbol	Boring No.	Sample No.	Sample Depth (feet)	Percent			Atterberg Limits LL:PL:PI	Soil Type U.S.C.S
				Gravel	Sand	Silt & Clay		
○	B-50	3	5	45	46	9	N/A	SP-SM

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PERCENT PASSING NO. 200 SIEVE

AASHTO T11

Client:	Shannon & Wilson	AP Lab No.:	18-0637
Project Name:	Reds Meadow - G2 Borings	Test Date:	06/18/18
Project Number:	100062		

Boring No.	Sample No.	Depth (ft)	Percent Fines (%)
B-5	2	5-6.5	15.5
B-7	1	2-5.0	42.0
B-11	2	10-11.5	20.4
B-13	2	10-11.5	27.8
B-17	3	6.5-8.5	64.4
B-18	2	5-6.5	20.6

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PERCENT PASSING NO. 200 SIEVE

AASHTO T11

Client:	Shannon & Wilson	AP Lab No.:	18-1117
Project Name:	Reds Meadow Road	Test Date:	11/14/18
Project Number:	100062-002		

Boring No.	Sample No.	Depth (ft)	Percent Fines (%)
B-44	2	5	24.4
B-46	10	25	30.2
B-47	2	2.5	32.5
B-47	4	7.5	16.6
B-48	4	7.5	12.3
B-49	3	5	23.8
B-49	5	10	22.5
B-49	6	12.5	20.6
B-49	7	15	57.1
B-50	5	10	15.8
B-51	2	2.5	18.2

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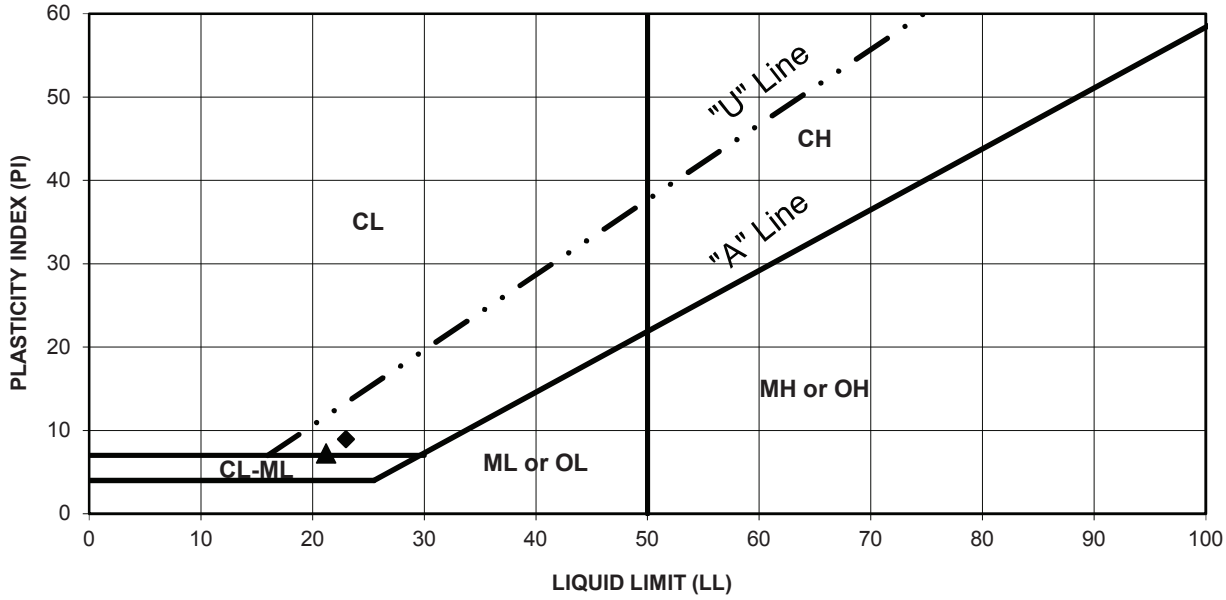
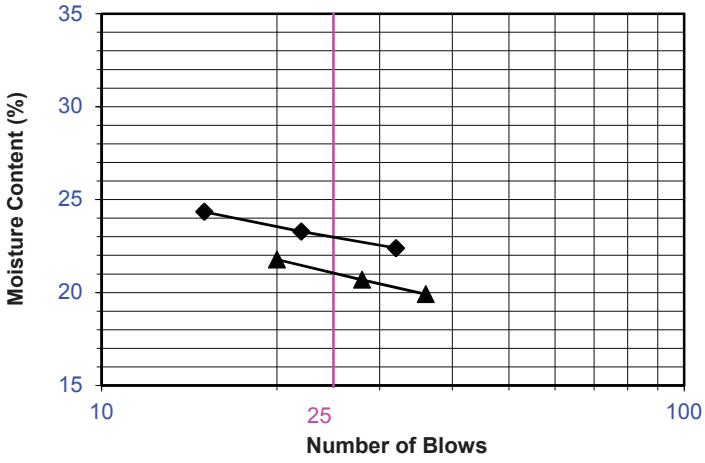
ATTERBERG LIMITS
AASHTO T89 & T90

Project Name: Reds Meadow - Test Pits **Tested By:** DK Date: 06/19/18
Project No.: 100062 **Checked By:** AP Date: 06/25/18



PROCEDURE USED

- ☐ Wet Preparation
- ☒ Dry Preparation
- ☒ Procedure A Multipoint Test
- ☐ Procedure B One-point Test



Symbol	Test Pit Number	Sample Number	Depth (feet)	LL	PL	PI	Plasticity Chart Symbol
♦	TP-1	1	2-5	23	14	9	CL
▲	TP-2B	1	1.5-5	21	14	7	CL-ML

* NP denotes "non-plastic"

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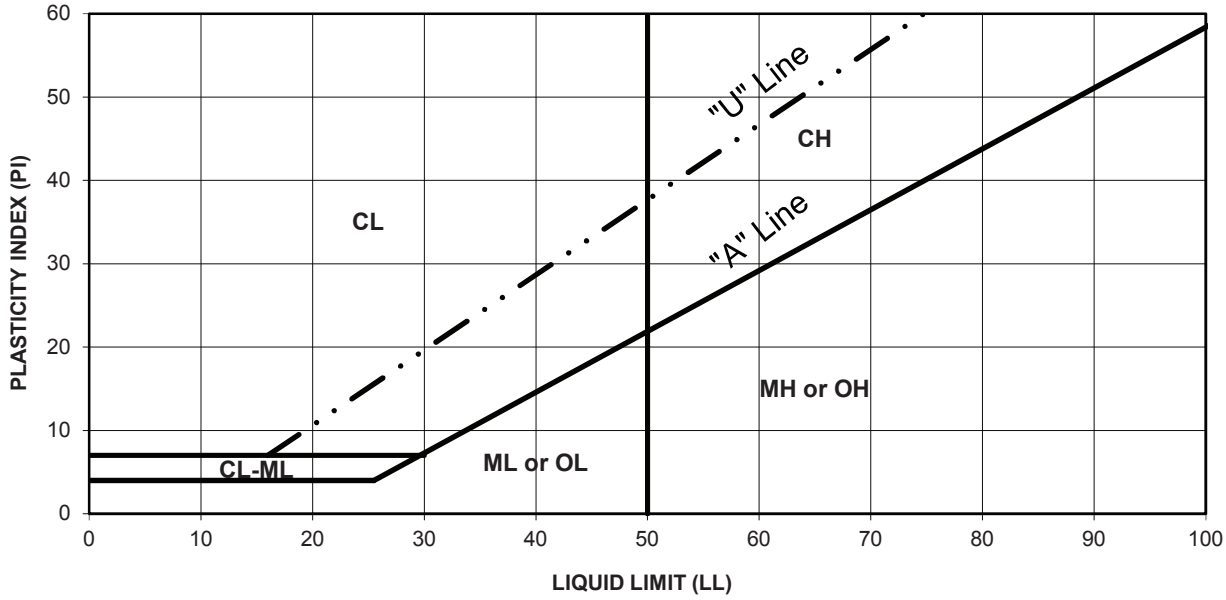
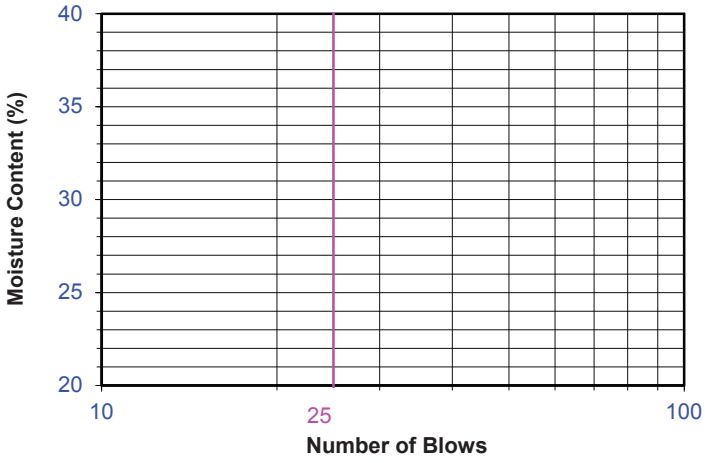
ATTERBERG LIMITS
AASHTO T89 & T90

Project Name: Reds Meadow - Test Pits **Tested By:** DK Date: 06/19/18
Project No.: 100062 **Checked By:** AP Date: 06/25/18



PROCEDURE USED

- ☐ Wet Preparation
- ☒ Dry Preparation
- ☒ Procedure A Multipoint Test
- ☐ Procedure B One-point Test



Symbol	Test Pit Number	Sample Number	Depth (feet)	LL	PL	PI	Plasticity Chart Symbol
	TP-4B	1	2-4	NP	NP	NP	
	TP-8	1	2-5	NP	NP	NP	

* NP denotes "non-plastic"

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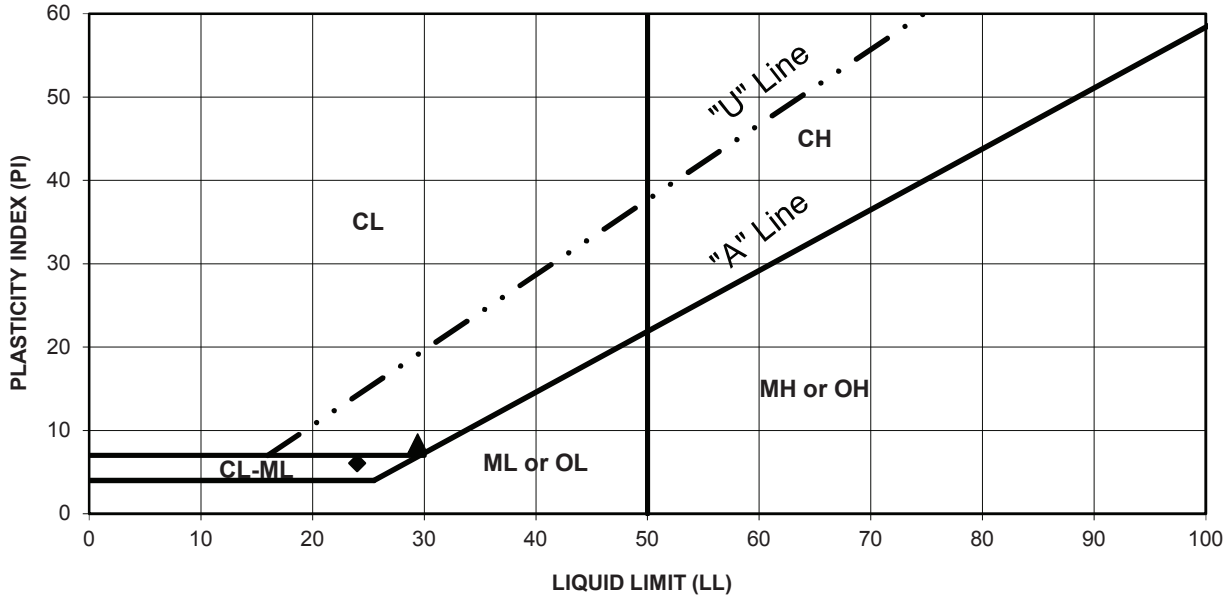
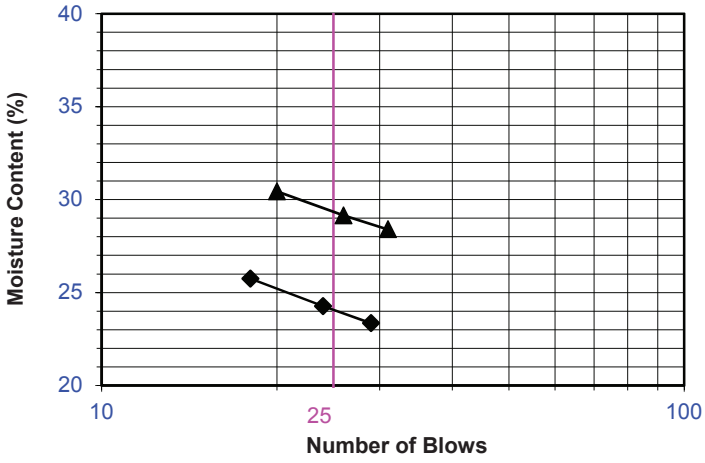
ATTERBERG LIMITS
AASHTO T89 & T90

Project Name: Reds Meadow - G2 Borings **Tested By:** LS Date: 06/21/18
Project No.: 100062 **Checked By:** AP Date: 06/22/18



PROCEDURE USED

- ☐ Wet Preparation
- ☒ Dry Preparation
- ☒ Procedure A Multipoint Test
- ☐ Procedure B One-point Test



Symbol	Boring Number	Sample Number	Depth (feet)	LL	PL	PI	Plasticity Chart Symbol
♦	B-3	1	5-6.5	24	18	6	CL-ML
▲	B-12	3	10-11.5	29	21	8	CL

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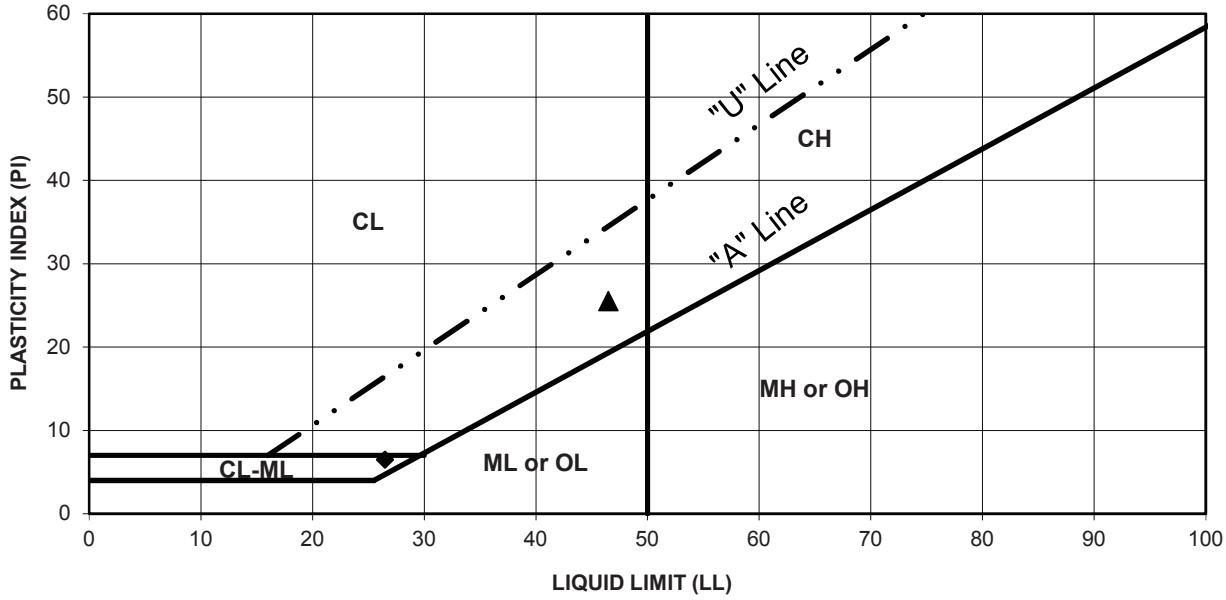
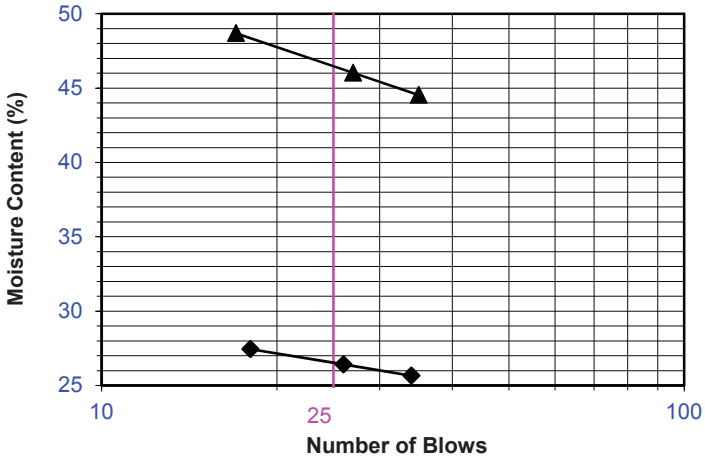
ATTERBERG LIMITS
AASHTO T89 & T90

Project Name: Reds Meadow - G2 Borings **Tested By:** LS Date: 06/21/18
Project No.: 100062 **Checked By:** AP Date: 06/22/18



PROCEDURE USED

- ☐ Wet Preparation
- ☒ Dry Preparation
- ☒ Procedure A Multipoint Test
- ☐ Procedure B One-point Test



Symbol	Boring Number	Sample Number	Depth (feet)	LL	PL	PI	Plasticity Chart Symbol
♦	B-13	1	5-6.5	27	20	7	CL-ML
▲	B-19	2	10-11.5	47	21	26	CL

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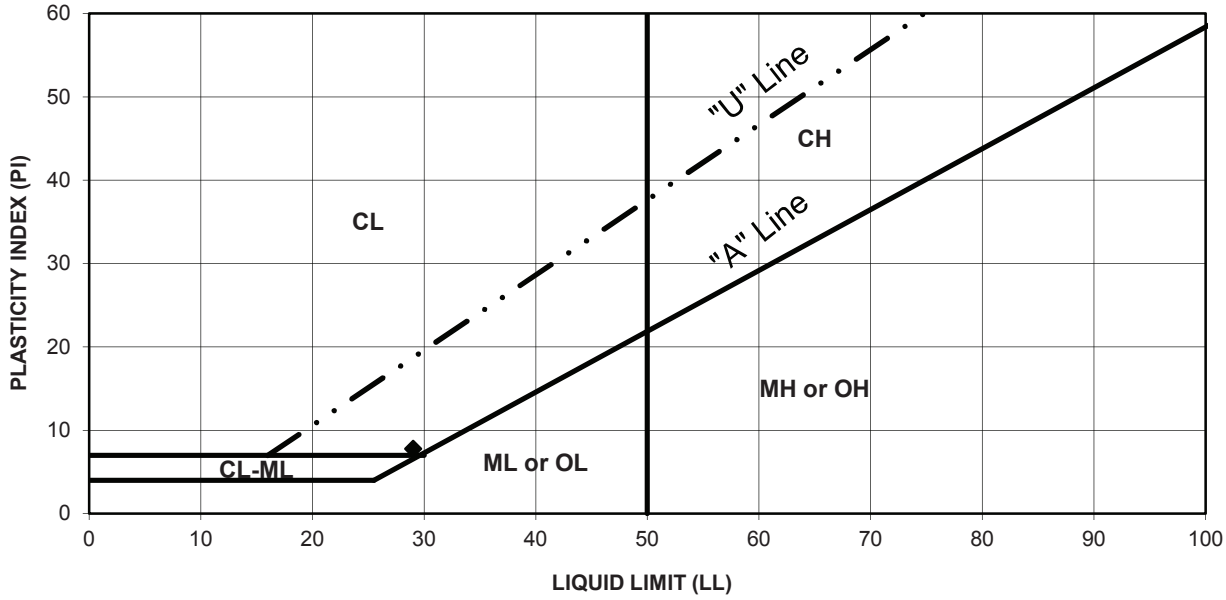
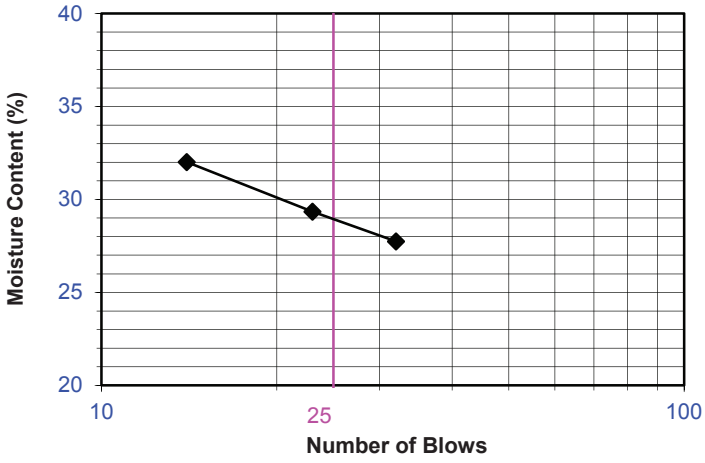
ATTERBERG LIMITS
AASHTO T89 & T90

Project Name: Reds Meadow - V1 Borings **Tested By:** DK Date: 06/19/18
Project No.: 100062 **Checked By:** AP Date: 06/28/18



PROCEDURE USED

- ☐ Wet Preparation
- ☒ Dry Preparation
- ☒ Procedure A Multipoint Test
- ☐ Procedure B One-point Test



Symbol	Boring Number	Sample Number	Depth (feet)	LL	PL	PI	Plasticity Chart Symbol
♦	B-22	2	5-6.5	29	21	8	CL
	B-24	2	4-5.0	NP	NP	NP	

* NP denotes "non-plastic"

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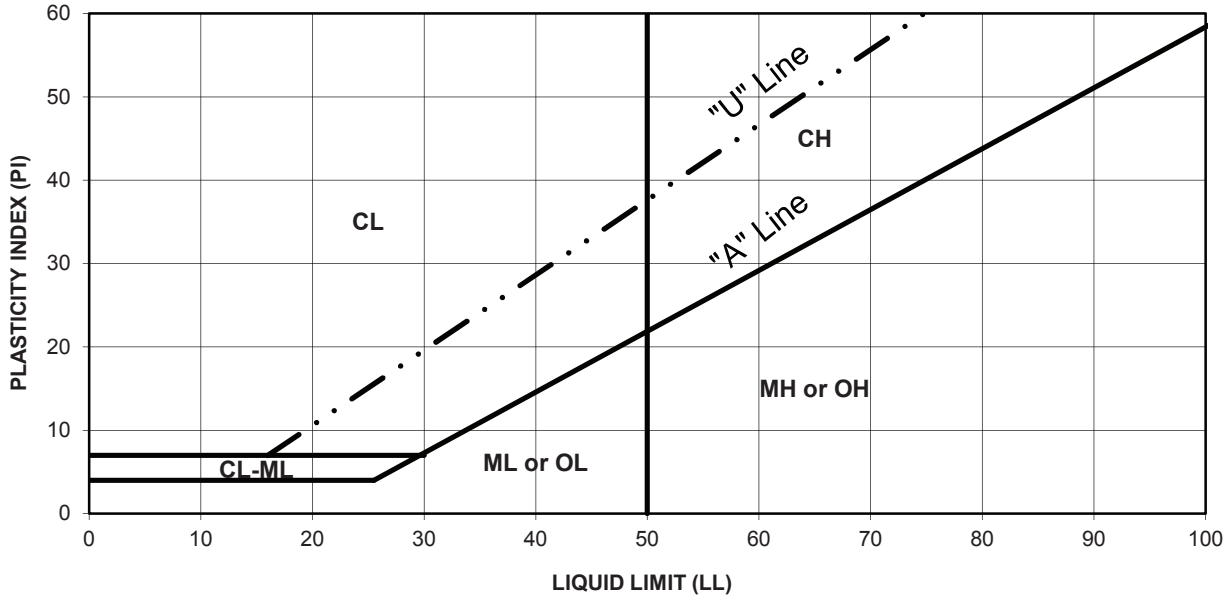
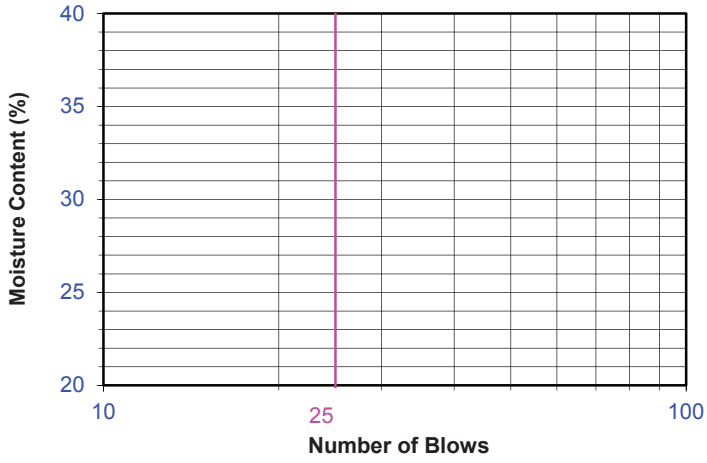
ATTERBERG LIMITS
AASHTO T89 & T90

Project Name: Reds Meadow - V1 Borings **Tested By:** DK Date: 06/19/18
Project No.: 100062 **Checked By:** AP Date: 06/28/18



PROCEDURE USED

- ☐ Wet Preparation
- ☒ Dry Preparation
- ☒ Procedure A Multipoint Test
- ☐ Procedure B One-point Test



Symbol	Boring Number	Sample Number	Depth (feet)	LL	PL	PI	Plasticity Chart Symbol
	B-36	1	5-6.5	NP	NP	NP	
	B-38	1	5-6.5	NP	NP	NP	

* NP denotes "non-plastic"

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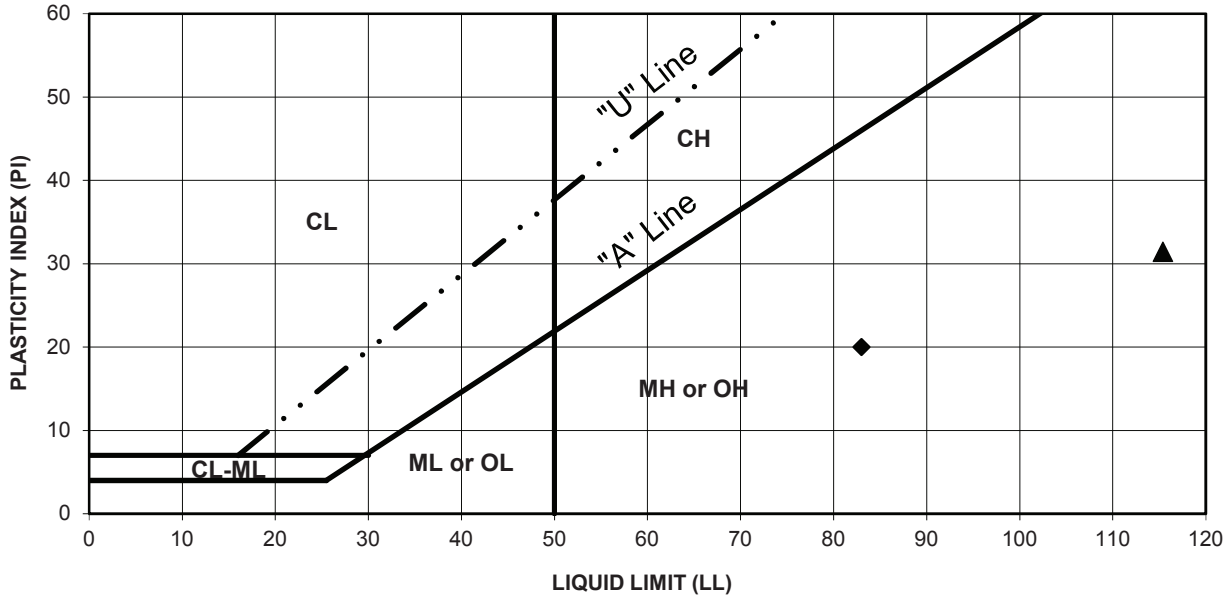
ATTERBERG LIMITS
AASHTO T89 & T90

Project Name: Reds Meadow - V1 Borings **Tested By:** DK Date: 06/19/18
Project No.: 100062 **Checked By:** AP Date: 06/28/18



PROCEDURE USED

- ☐ Wet Preparation
- ☒ Dry Preparation
- ☒ Procedure A Multipoint Test
- ☐ Procedure B One-point Test

Symbol	Boring Number	Sample Number	Depth (feet)	LL	PL	PI	Plasticity Chart Symbol
♦	B-41	1A	5-5.75	83	63	20	OH
▲	B-41	1B	5.75-6.5	115	84	31	OH

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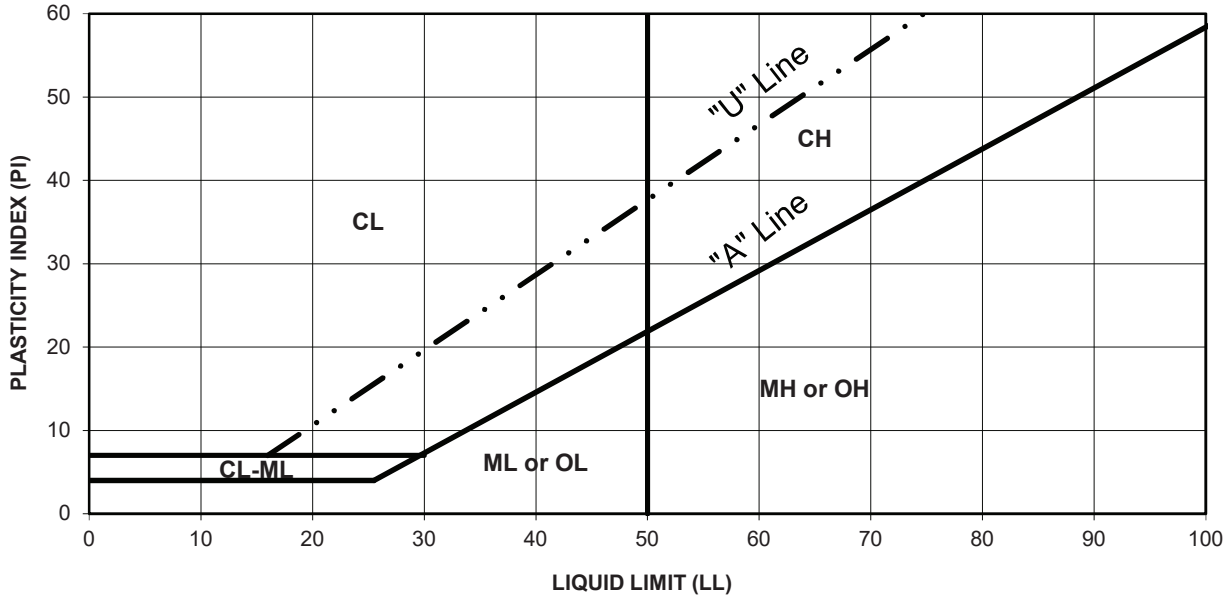
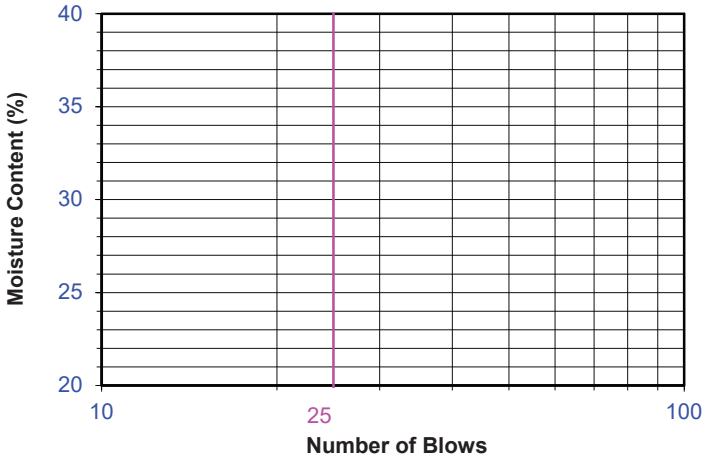
ATTERBERG LIMITS
AASHTO T89 & T90

Project Name: Reds Meadow Road **Tested By:** DK Date: 11/19/18
Project No.: 100062-002 **Checked By:** AP Date: 11/21/18



PROCEDURE USED

- ☐ Wet Preparation
- ☒ Dry Preparation
- ☒ Procedure A Multipoint Test
- ☐ Procedure B One-point Test



Symbol	Boring Number	Sample Number	Depth (feet)	LL	PL	PI	Plasticity Chart Symbol
	B-28	1	0	NP	NP	NP	
	B-39	1	0	NP	NP	NP	

* NP denotes "non-plastic"

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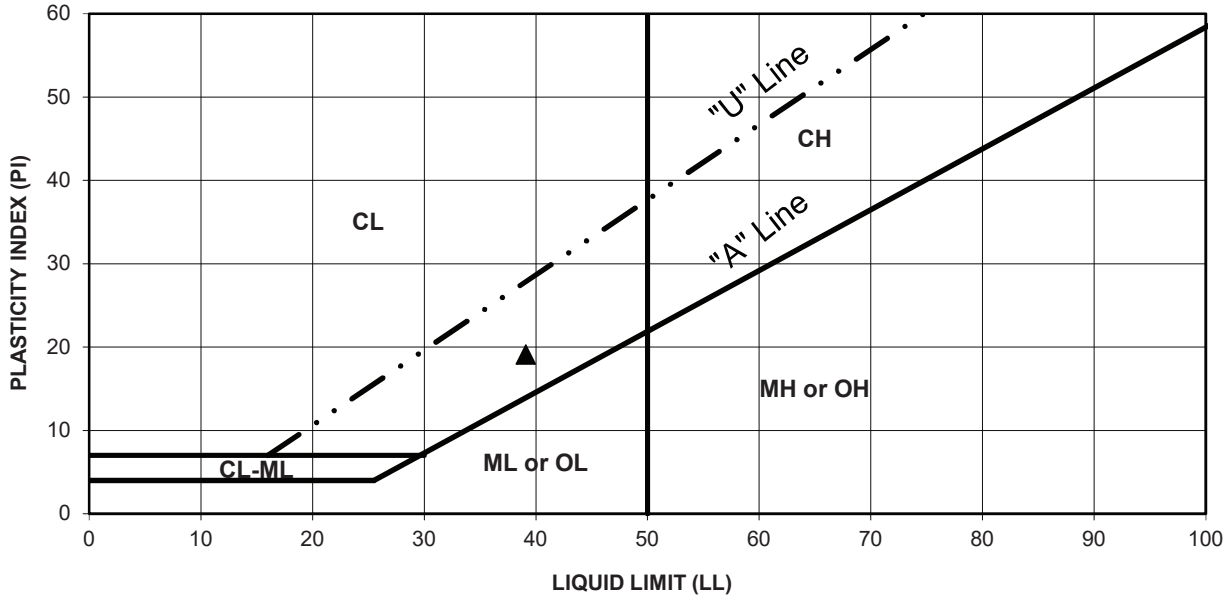
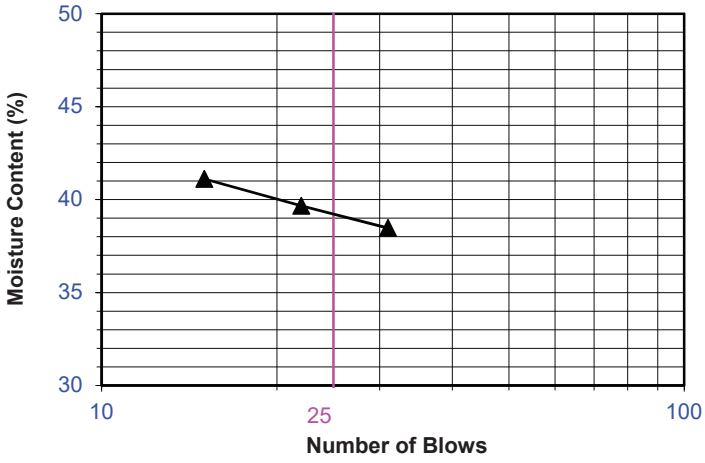
ATTERBERG LIMITS
AASHTO T89 & T90

Project Name: Reds Meadow Road **Tested By:** DK Date: 11/19/18
Project No.: 100062-002 **Checked By:** AP Date: 11/21/18



PROCEDURE USED

- ☐ Wet Preparation
- ☒ Dry Preparation
- ☒ Procedure A Multipoint Test
- ☐ Procedure B One-point Test



Symbol	Boring Number	Sample Number	Depth (feet)	LL	PL	PI	Plasticity Chart Symbol
	B-46	1	0	NP	NP	NP	
▲	B-46	10	25	39	20	19	CL

* NP denotes "non-plastic"

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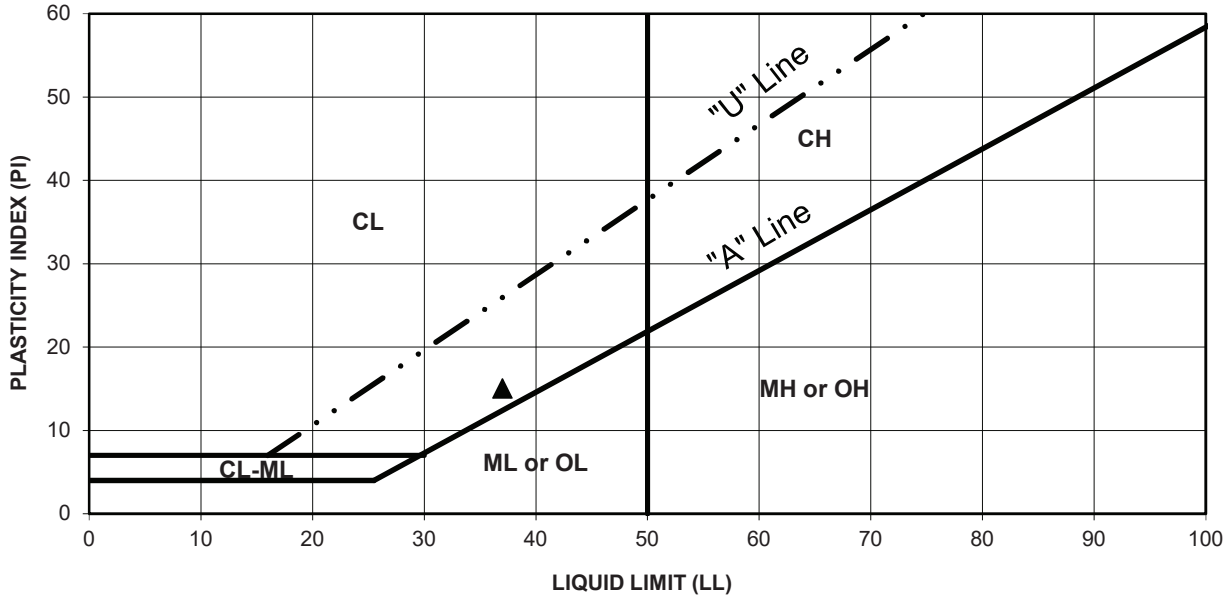
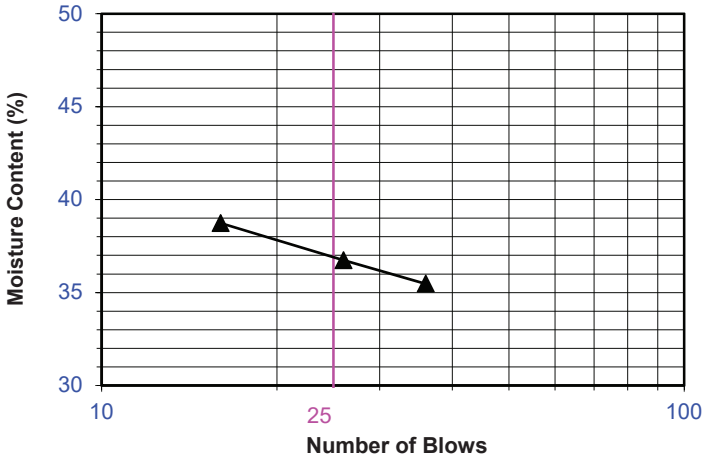
ATTERBERG LIMITS
AASHTO T89 & T90

Project Name: Reds Meadow Road **Tested By:** DK Date: 11/19/18
Project No.: 100062-002 **Checked By:** AP Date: 11/21/18



PROCEDURE USED

- ☐ Wet Preparation
- ☒ Dry Preparation
- ☒ Procedure A Multipoint Test
- ☐ Procedure B One-point Test



Symbol	Boring Number	Sample Number	Depth (feet)	LL	PL	PI	Plasticity Chart Symbol
	B-49	5	10	NP	NP	NP	
▲	B-49	7	15	37	22	15	CL

* NP denotes "non-plastic"

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COMPACTION TEST

Client: Shannon & Wilson
Project Name: Reds Meadow - V1 CBR
Project No. : 100062
Boring No.: B-12 & B-14
Sample No.: 1
Visual Sample Description: Silty Sand w/gravel

AP Number: 18-0637
Tested By: ST Date: 06/19/18
Calculated By: JP Date: 06/20/18
Checked By: AP Date: 06/27/18
Depth(ft.): 0-5

METHOD: C
MOLD VOLUME (CU.FT): 0.0752

Compaction Method: [X] AASHTO T180 [ ] AASHTO T99
Preparation Method: [ ] Moist [X] Dry

Wt. Comp. Soil + Mold (gm.)	6583	6827	6769	6587		
Wt. of Mold (gm.)	2646	2646	2646	2646		
Net Wt. of Soil (gm.)	3937	4181	4123	3941		
Container No.						
Wt. of Container (gm.)	149.86	138.22	142.20	135.77		
Wet Wt. of Soil + Cont. (gm.)	657.63	636.96	714.30	726.30		
Dry Wt. of Soil + Cont. (gm.)	608.84	578.34	636.70	637.82		
Moisture Content (%)	10.63	13.32	15.69	17.62		
Wet Density (pcf)	115.42	122.57	120.87	115.54		
Dry Density (pcf)	104.33	108.16	104.48	98.22		

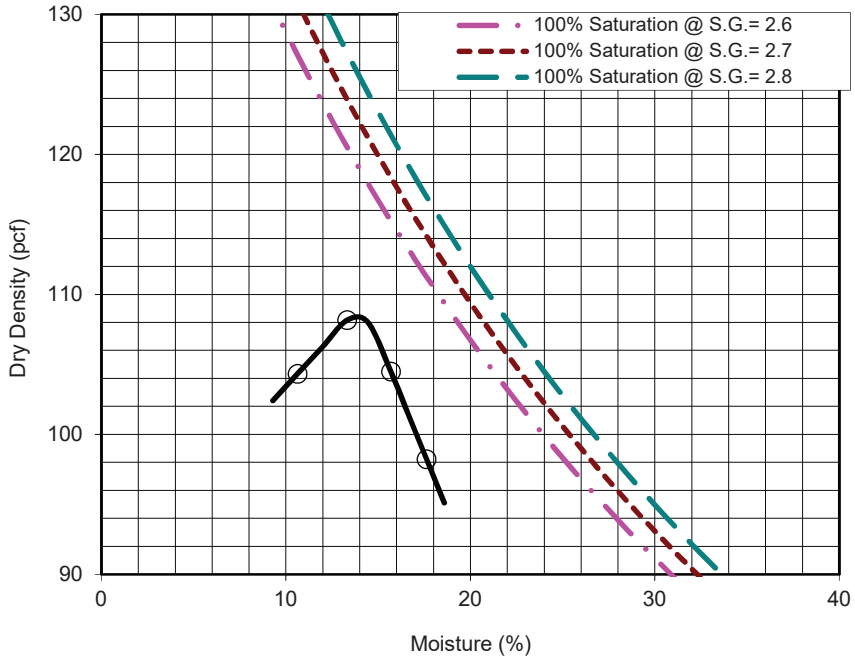
Maximum Dry Density (pcf): **108.3**
Maximum Dry Density w/ Rock Correction (pcf): **112.2**
Optimum Moisture Content (%): **14.0**
Optimum Moisture Content w/ Rock Correction (%): **12.7**

PROCEDURE USED

[ ] *METHOD A: Percent of Oversize:* N/A
Soil Passing No. 4 (4.75 mm) Sieve
Mold : 4 in. (101.6 mm) diameter
Layers : 5 (Five)
Blows per layer : 25 (twenty-five)

[ ] *METHOD B: Percent of Oversize:* N/A
Soil Passing 3/8 in. (9.5 mm) Sieve
Mold : 4 in. (101.6 mm) diameter
Layers : 5 (Five)
Blows per layer : 25 (twenty-five)

[X] *METHOD D: Percent of Oversize:* 9.6%
Soil Passing 3/4 in. (19.0 mm) Sieve
Mold : 6 in. (152.4 mm) diameter
Layers : 5 (Five)
Blows per layer : 56 (fifty-six)



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COMPACTION TEST

Client:	Shannon & Wilson			AP Number:	18-0637
Project Name:	Reds Meadow - V1 CBR	Tested By:	JT	Date:	06/21/18
Project No. :	100062	Calculated By:	JP	Date:	06/22/18
Boring No.:	B-22, B-24, B-25 & B-27	Checked By:	AP	Date:	06/27/18
Sample No.:	1	Depth(ft.):	0-5		
Visual Sample Description:	Silty Sand				

Compaction Method	X	AASHTO T180	
		AASHTO T99	
Preparation Method		Moist	
	X	Dry	

METHOD	C
MOLD VOLUME (CU.FT)	0.0752

Wt. Comp. Soil + Mold (gm.)	6977	6915	6838	6587		
Wt. of Mold (gm.)	2641	2641	2641	2641		
Net Wt. of Soil (gm.)	4336	4274	4197	3946		
Container No.						
Wt. of Container (gm.)	139.11	149.66	148.71	155.43		
Wet Wt. of Soil + Cont. (gm.)	434.43	511.97	459.05	493.10		
Dry Wt. of Soil + Cont. (gm.)	401.12	465.44	429.27	466.82		
Moisture Content (%)	12.71	14.73	10.61	8.44		
Wet Density (pcf)	127.12	125.30	123.04	115.68		
Dry Density (pcf)	112.78	109.21	111.23	106.68		

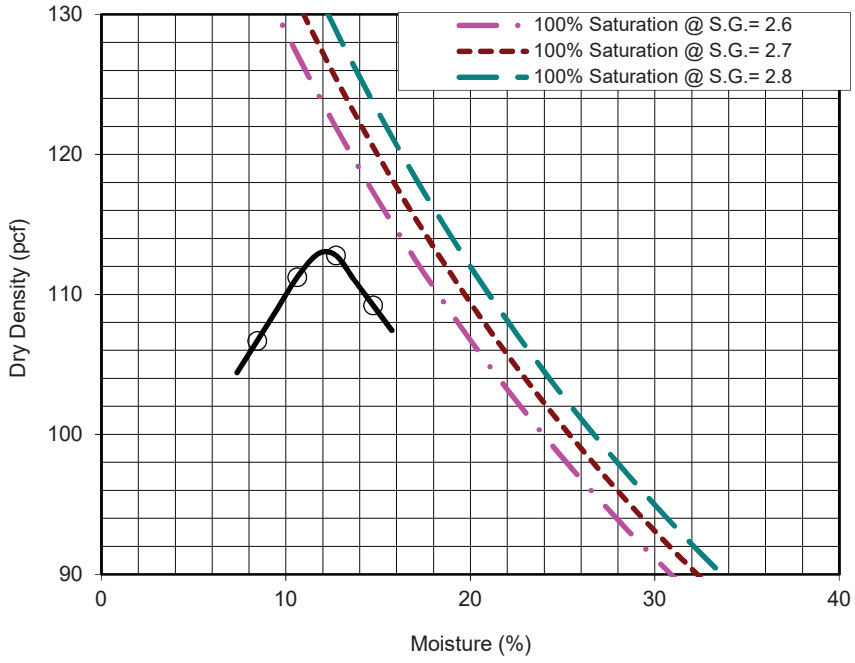
Maximum Dry Density (pcf)	113.0	Optimum Moisture Content (%)	12.0
Maximum Dry Density w/ Rock Correction (pcf)	N/A	Optimum Moisture Content w/ Rock Correction (%)	N/A

PROCEDURE USED

☐ *METHOD A: Percent of Oversize:* N/A
Soil Passing No. 4 (4.75 mm) Sieve
Mold : 4 in. (101.6 mm) diameter
Layers : 5 (Five)
Blows per layer : 25 (twenty-five)

☐ *METHOD B: Percent of Oversize:* N/A
Soil Passing 3/8 in. (9.5 mm) Sieve
Mold : 4 in. (101.6 mm) diameter
Layers : 5 (Five)
Blows per layer : 25 (twenty-five)

☒ *METHOD D: Percent of Oversize:* 0.7%
Soil Passing 3/4 in. (19.0 mm) Sieve
Mold : 6 in. (152.4 mm) diameter
Layers : 5 (Five)
Blows per layer : 56 (fifty-six)



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COMPACTION TEST

Client:	Shannon & Wilson			AP Number:	18-0637
Project Name:	Reds Meadow - V1 CBR	Tested By:	LS	Date:	06/20/18
Project No. :	100062	Calculated By:	JP	Date:	06/20/18
Boring No.:	B-28, B-29, B-31AB & B-32	Checked By:	AP	Date:	06/27/18
Sample No.:	1	Depth(ft.):	0-5		
Visual Sample Description:	Silty Sand				

		Compaction Method	[X] AASHTO T180
			[ ] AASHTO T99
METHOD	C	Preparation Method	[ ] Moist
MOLD VOLUME (CU.FT)	0.0752		[X] Dry

Wt. Comp. Soil + Mold (gm.)	6569	6545	6320	6500		
Wt. of Mold (gm.)	2641	2641	2641	2641		
Net Wt. of Soil (gm.)	3928	3904	3679	3859		
Container No.						
Wt. of Container (gm.)	142.54	152.07	145.04	149.05		
Wet Wt. of Soil + Cont. (gm.)	517.24	603.18	418.04	413.62		
Dry Wt. of Soil + Cont. (gm.)	452.63	535.03	384.26	363.20		
Moisture Content (%)	20.84	17.80	14.12	23.54		
Wet Density (pcf)	115.15	114.45	107.84	113.13		
Dry Density (pcf)	95.30	97.16	94.50	91.57		

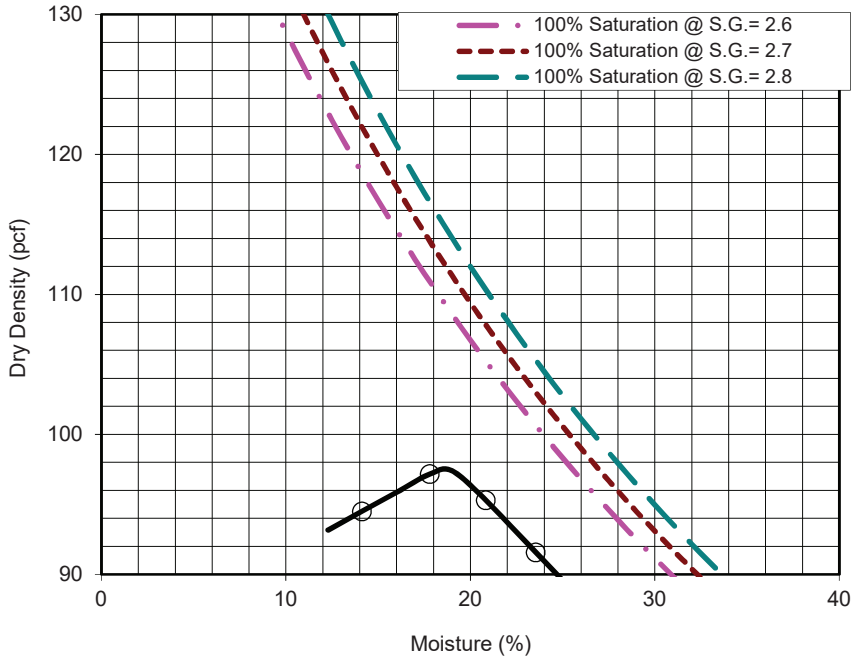
Maximum Dry Density (pcf)	**97.5**	Optimum Moisture Content (%)	**18.6**
Maximum Dry Density w/ Rock Correction (pcf)	**N/A**	Optimum Moisture Content w/ Rock Correction (%)	**N/A**

PROCEDURE USED

[ ] *METHOD A: Percent of Oversize:* *N/A*
Soil Passing No. 4 (4.75 mm) Sieve
Mold : 4 in. (101.6 mm) diameter
Layers : 5 (Five)
Blows per layer : 25 (twenty-five)

[ ] *METHOD B: Percent of Oversize:* *N/A*
Soil Passing 3/8 in. (9.5 mm) Sieve
Mold : 4 in. (101.6 mm) diameter
Layers : 5 (Five)
Blows per layer : 25 (twenty-five)

[X] *METHOD D: Percent of Oversize:* *1.0%*
Soil Passing 3/4 in. (19.0 mm) Sieve
Mold : 6 in. (152.4 mm) diameter
Layers : 5 (Five)
Blows per layer : 56 (fifty-six)



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COMPACTION TEST

Client: Shannon & Wilson
Project Name: Reds Meadow Road
Project No. : 100062-002
Boring No.: B-28
Sample No.: 1
Visual Sample Description: Silty Sand w/gravel & organics

AP Number: 18-1117
Tested By: JT Date: 11/14/18
Calculated By: JP Date: 11/15/18
Checked By: AP Date: 11/26/18
Depth(ft.): 0

Compaction Method: [X] AASHTO T180 [ ] AASHTO T99
Preparation Method: [ ] Moist [X] Dry

METHOD: C
MOLD VOLUME (CU.FT): 0.0752

Wt. Comp. Soil + Mold (gm.)	6024	6088	5843	6051		
Wt. of Mold (gm.)	2633	2633	2633	2633		
Net Wt. of Soil (gm.)	3391	3455	3210	3418		
Container No.						
Wt. of Container (gm.)	149.10	135.71	151.12	328.86		
Wet Wt. of Soil + Cont. (gm.)	365.30	335.36	376.92	495.19		
Dry Wt. of Soil + Cont. (gm.)	333.98	302.45	347.93	465.64		
Moisture Content (%)	16.94	19.74	14.73	21.60		
Wet Density (pcf)	99.41	101.30	94.11	100.20		
Dry Density (pcf)	85.01	84.60	82.02	82.40		

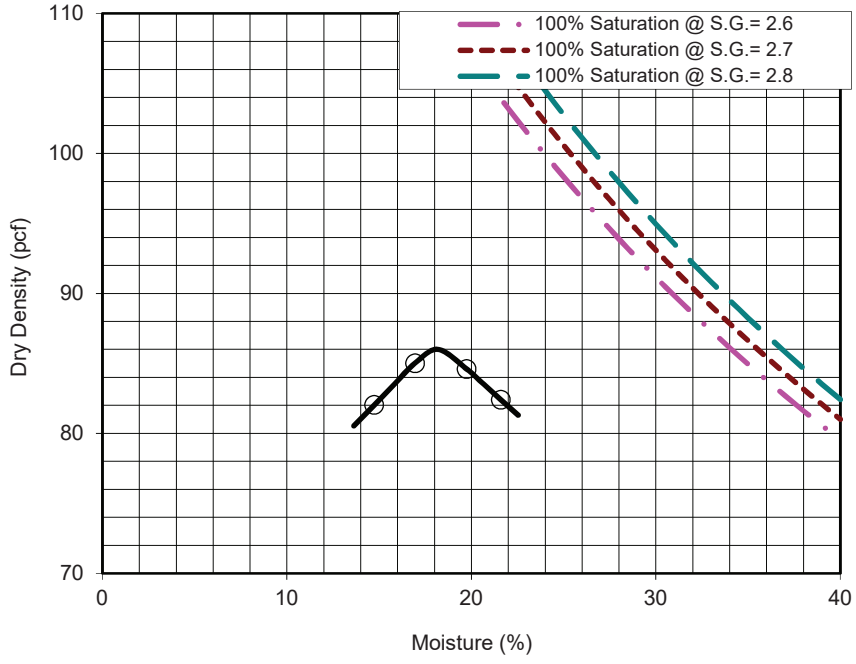
Maximum Dry Density (pcf): **86.0**
Maximum Dry Density w/ Rock Correction (pcf): **N/A**
Optimum Moisture Content (%): **18.0**
Optimum Moisture Content w/ Rock Correction (%): **N/A**

PROCEDURE USED

[ ] *METHOD A: Percent of Oversize:* N/A
Soil Passing No. 4 (4.75 mm) Sieve
Mold : 4 in. (101.6 mm) diameter
Layers : 5 (Five)
Blows per layer : 25 (twenty-five)

[ ] *METHOD B: Percent of Oversize:* N/A
Soil Passing 3/8 in. (9.5 mm) Sieve
Mold : 4 in. (101.6 mm) diameter
Layers : 5 (Five)
Blows per layer : 25 (twenty-five)

[X] *METHOD D: Percent of Oversize:* 1.1%
Soil Passing 3/4 in. (19.0 mm) Sieve
Mold : 6 in. (152.4 mm) diameter
Layers : 5 (Five)
Blows per layer : 56 (fifty-six)



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COMPACTION TEST

Client:	Shannon & Wilson			AP Number:	18-0637
Project Name:	Reds Meadow - V1 CBR	Tested By:	JT	Date:	06/18/18
Project No. :	100062	Calculated By:	JP	Date:	06/19/18
Boring No.:	B-39	Checked By:	AP	Date:	06/27/18
Sample No.:	1	Depth(ft.):	0-5		
Visual Sample Description:	Clayey Sand				

METHOD	C	Compaction Method	[X] AASHTO T180
MOLD VOLUME (CU.FT)	0.0752		[ ] AASHTO T99
		Preparation Method	[ ] Moist
			[X] Dry

Wt. Comp. Soil + Mold (gm.)	6568	6525	6466	6587		
Wt. of Mold (gm.)	2641	2641	2641	2641		
Net Wt. of Soil (gm.)	3927	3884	3825	3946		
Container No.						
Wt. of Container (gm.)	149.70	142.97	147.97	145.15		
Wet Wt. of Soil + Cont. (gm.)	386.06	327.96	419.68	411.52		
Dry Wt. of Soil + Cont. (gm.)	345.19	291.34	376.48	362.22		
Moisture Content (%)	20.91	24.68	18.91	22.71		
Wet Density (pcf)	115.13	113.86	112.13	115.68		
Dry Density (pcf)	95.22	91.32	94.31	94.27		

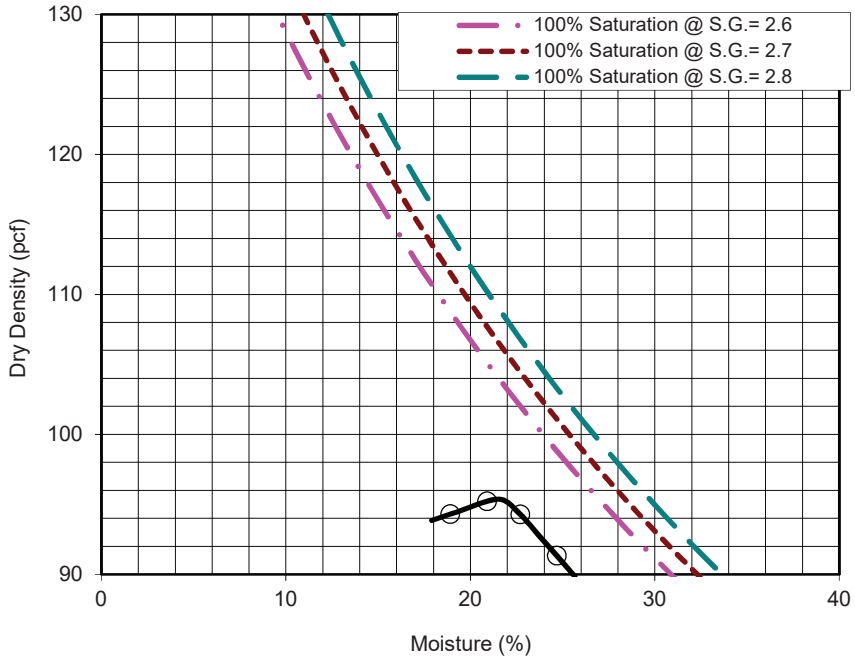
Maximum Dry Density (pcf)	**95.4**	Optimum Moisture Content (%)	**21.5**
Maximum Dry Density w/ Rock Correction (pcf)	**N/A**	Optimum Moisture Content w/ Rock Correction (%)	**N/A**

PROCEDURE USED

[ ] *METHOD A: Percent of Oversize:* *N/A*
Soil Passing No. 4 (4.75 mm) Sieve
Mold : 4 in. (101.6 mm) diameter
Layers : 5 (Five)
Blows per layer : 25 (twenty-five)

[ ] *METHOD B: Percent of Oversize:* *N/A*
Soil Passing 3/8 in. (9.5 mm) Sieve
Mold : 4 in. (101.6 mm) diameter
Layers : 5 (Five)
Blows per layer : 25 (twenty-five)

[X] *METHOD D: Percent of Oversize:* *0.2%*
Soil Passing 3/4 in. (19.0 mm) Sieve
Mold : 6 in. (152.4 mm) diameter
Layers : 5 (Five)
Blows per layer : 56 (fifty-six)



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COMPACTION TEST

Client:	Shannon & Wilson			AP Number:	18-1117
Project Name:	Reds Meadow Road	Tested By:	JT	Date:	11/14/18
Project No. :	100062-002	Calculated By:	JP	Date:	11/15/18
Boring No.:	B-46	Checked By:	AP	Date:	11/26/18
Sample No.:	1	Depth(ft.):	0		
Visual Sample Description:	Well-Graded Sand w/silt				

		Compaction Method	[X] AASHTO T180
			[ ] AASHTO T99
METHOD	C	Preparation Method	[ ] Moist
MOLD VOLUME (CU.FT)	0.0752		[X] Dry

Wt. Comp. Soil + Mold (gm.)	7136	7287	7331	7250		
Wt. of Mold (gm.)	2633	2633	2633	2633		
Net Wt. of Soil (gm.)	4503	4654	4698	4617		
Container No.						
Wt. of Container (gm.)	144.46	149.77	136.31	145.34		
Wet Wt. of Soil + Cont. (gm.)	479.66	503.96	512.49	377.81		
Dry Wt. of Soil + Cont. (gm.)	457.81	474.83	475.46	351.68		
Moisture Content (%)	6.97	8.96	10.92	12.66		
Wet Density (pcf)	132.01	136.44	137.73	135.35		
Dry Density (pcf)	123.41	125.22	124.17	120.14		

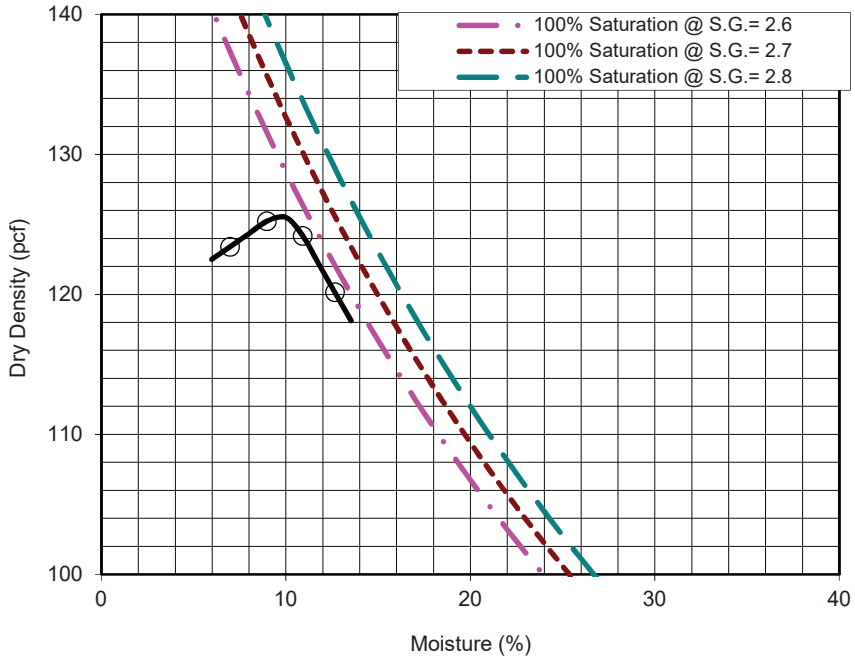
Maximum Dry Density (pcf)	**125.5**	Optimum Moisture Content (%)	**10.0**
Maximum Dry Density w/ Rock Correction (pcf)	**N/A**	Optimum Moisture Content w/ Rock Correction (%)	**N/A**

PROCEDURE USED

[ ] *METHOD A: Percent of Oversize:* *N/A*
Soil Passing No. 4 (4.75 mm) Sieve
Mold : 4 in. (101.6 mm) diameter
Layers : 5 (Five)
Blows per layer : 25 (twenty-five)

[ ] *METHOD B: Percent of Oversize:* *N/A*
Soil Passing 3/8 in. (9.5 mm) Sieve
Mold : 4 in. (101.6 mm) diameter
Layers : 5 (Five)
Blows per layer : 25 (twenty-five)

[X] *METHOD D: Percent of Oversize:* *0.8%*
Soil Passing 3/4 in. (19.0 mm) Sieve
Mold : 6 in. (152.4 mm) diameter
Layers : 5 (Five)
Blows per layer : 56 (fifty-six)



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CALIFORNIA BEARING RATIO (CBR) OF LABORATORY-COMPACTED SOIL

AASHTO T193

Project Name:	Reds Meadow - V1 CBR	Tested By :	JT	Date	06/20/18
Project No. :	100062	Input By:	JP	Date	06/26/18
Boring No.:	B-12 & B-14	Checked By:	AP	Date	06/27/18
Sample No.:	1				
Depth (ft.) :	0-5				
Soil Description :	Silty Sand w/gravel				

SAMPLE DESCRIPTION BEFORE SOAKING

Mold Number	D
Blows Per Layer	10
Wt of Wet Soil & Mold (gm)	11741
Weight of Mold (gm)	7829
Weight of Wet Soil (gm)	3912
Mold Volume (cu.ft)	0.0818
Container No.	
Wet Wt. Soil + Container (gm)	591.12
Dry Wt. Soil + Container (gm)	576.52
Wt. Container (gm)	474.07
Moisture Content (%)	14.25
Wet Density (pcf)	105.4
Dry Density (pcf)	92.3

SAMPLE PREPARATION

Wt of Hammer (Lbs)	10
No. of Layers	5
No. of Blows/Layer	10
Drop Height (inches)	18
Surcharge Weight (Lbs)	10
Max. Dry Density (pcf)	108.3
Molded Relative Comp (%)	85.2
Req'd % Moisture	14.0
No. of Trials	1
% Retained 3/4" Sieve	0.00%

DEFORMATION DURING SOAKING PERIOD

Sample Length (inch) 5

DATE	TIME	Mold No.:	D
		Dial Rdgs	Swell (in)
06/20/18	15:15	0.5600	
06/22/18	15:50	0.5500	
06/25/18	13:20	0.5500	-0.0100
Percent Swell/Collapse (+/-)			-0.20

AFTER SOAKING

Mold Number	D	
Wt. of Wet Soil + Mold (gm)	11931	
Weight of Mold (gm)	7829	
Weight of Wet Soil (gm)	4102	
Mold Volume (cu.ft)	0.0816	
Moisture Sample	Top	Bottom
Container No.		
Wet Wt. Soil + Container (gm)	520.76	486.46
Dry Wt. Soil + Container (gm)	458.80	428.39
Wt. Container (gm)	142.16	143.58
Mosture Content (%)	19.6	20.4
Average Moisture Content (%)	20.0	
Wet Density (pcf)	110.8	
After Test Dry Density (pcf)	92.3	

TEST LOAD DATA

Piston Diameter (inches): 1.954

Penetration	Mold No.:	D
(inch)	LOAD (lb)	Stress (psi)
0.000	0	0.00
0.025	118	39.35
0.050	305	101.71
0.075	474	158.07
0.100	640	213.42
0.125	780	260.11
0.150	910	303.46
0.175	1039	346.48
0.200	1157	385.83
0.225	1275	425.18
0.250	1385	461.86
0.275	1499	499.88
0.300	1619	539.89
0.325	1732	577.58
0.350	1836	612.26
0.375	1938	646.27
0.400	2034	678.28
0.425	2130	710.30
0.450	2227	742.64
0.475	2320	773.66
0.500	2408	803.00

TEST RESULTS

CBR @ .1": 21

CBR @ .2": 26

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CALIFORNIA BEARING RATIO (CBR) OF LABORATORY-COMPACTED SOIL

AASHTO T193

Project Name:	Reds Meadow - V1 CBR	Tested By :	JT	Date	06/20/18
Project No. :	100062	Input By:	JP	Date	06/26/18
Boring No.:	B-12 & B-14	Checked By:	AP	Date	06/27/18
Sample No.:	1				
Depth (ft.) :	0-5				
Soil Description :	Silty Sand w/gravel				

SAMPLE DESCRIPTION BEFORE SOAKING

Mold Number	E
Blows Per Layer	25
Wt of Wet Soil & Mold (gm)	11967
Weight of Mold (gm)	7827
Weight of Wet Soil (gm)	4140
Mold Volume (cu.ft)	0.0818
Container No.	
Wet Wt. Soil + Container (gm)	591.12
Dry Wt. Soil + Container (gm)	576.52
Wt. Container (gm)	474.07
Moisture Content (%)	14.25
Wet Density (pcf)	111.6
Dry Density (pcf)	97.7

SAMPLE PREPARATION

Wt of Hammer (Lbs)	10
No. of Layers	5
No. of Blows/Layer	25
Drop Height (inches)	18
Surcharge Weight (Lbs)	10
Max. Dry Density (pcf)	108.3
Molded Relative Comp (%)	90.2
Req'd % Moisture	14.0
No. of Trials	1
% Retained 3/4" Sieve	0.00%

DEFORMATION DURING SOAKING PERIOD

Sample Length (inch) 5

DATE	TIME	Mold No.:	E
		Dial Rdgs	Swell (in)
06/20/18	15:15	0.5390	
06/22/18	15:50	0.5320	
06/25/18	13:20	0.5300	-0.0090
Percent Swell/Collapse (+/-)			-0.18

AFTER SOAKING

Mold Number	E	
Wt. of Wet Soil + Mold + Base Plate (gm)	12076	
Weight of Mold+ Base Plate (gm)	7827	
Weight of Wet Soil (gm)	4249	
Mold Volume (cu.ft)	0.0817	
Moisture Sample	Top	Bottom
Container No.		
Wet Wt. Soil + Container (gm)	511.99	550.44
Dry Wt. Soil + Container (gm)	453.79	496.54
Wt. Container (gm)	149.80	180.00
Mosture Content (%)	19.1	17.0
Average Moisture Content (%)	18.1	
Wet Density (pcf)	114.7	
After Test Dry Density (pcf)	97.1	

TEST LOAD DATA

Piston Diameter (inches): 1.954

Penetration	Mold No.:	E
(inch)	LOAD (lb)	Stress (psi)
0.000	0	0.00
0.025	169	56.36
0.050	380	126.72
0.078	629	209.75
0.100	852	284.12
0.125	1091	363.82
0.150	1290	430.18
0.175	1502	500.88
0.200	1713	571.24
0.225	1913	637.93
0.250	2119	706.63
0.275	2328	776.33
0.300	2539	846.69
0.325	2764	921.72
0.350	2970	990.42
0.375	3177	1059.44
0.400	3365	1122.14
0.425	3561	1187.50
0.450	3730	1243.86
0.475	3912	1304.55
0.500	4088	1363.24

TEST RESULTS

CBR @ .1": 31

CBR @ .2": 40

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CALIFORNIA BEARING RATIO (CBR) OF LABORATORY-COMPACTED SOIL

AASHTO T193

Project Name:	Reds Meadow - V1 CBR	Tested By :	JT	Date	06/20/18
Project No. :	100062	Input By:	JP	Date	06/26/18
Boring No.:	B-12 & B-14	Checked By:	AP	Date	06/27/18
Sample No.:	1				
Depth (ft.) :	0-5				
Soil Description :	Silty Sand w/gravel				

SAMPLE DESCRIPTION BEFORE SOAKING

Mold Number	F
Blows Per Layer	50
Wt of Wet Soil & Mold (gm)	12187
Weight of Mold (gm)	7820
Weight of Wet Soil (gm)	4367
Mold Volume (cu.ft)	0.0818
Container No.	
Wet Wt. Soil + Container (gm)	591.12
Dry Wt. Soil + Container (gm)	576.52
Wt. Container (gm)	474.07
Moisture Content (%)	14.25
Wet Density (pcf)	117.7
Dry Density (pcf)	103.0

SAMPLE PREPARATION

Wt of Hammer (Lbs)	10
No. of Layers	5
No. of Blows/Layer	50
Drop Height (inches)	18
Surcharge Weight (Lbs)	10
Max. Dry Density (pcf)	108.3
Molded Relative Comp (%)	95.1
Req'd % Moisture	14.0
No. of Trials	1
% Retained 3/4" Sieve	0.00%

DEFORMATION DURING SOAKING PERIOD

Sample Length (inch) 5

DATE	TIME	Mold No.:	F
		Dial Rdgs	Swell (in)
06/20/18	15:15	0.6250	
06/22/18	15:50	0.6180	
06/25/18	13:20	0.6160	-0.0090
Percent Swell/Collapse (+/-)			-0.18

AFTER SOAKING

Mold Number	F	
Wt. of Wet Soil + Mold + Base Plate (gm)	12263	
Weight of Mold+ Base Plate (gm)	7820	
Weight of Wet Soil (gm)	4443	
Mold Volume (cu.ft)	0.0817	
Moisture Sample	Top	Bottom
Container No.		
Wet Wt. Soil + Container (gm)	461.71	488.86
Dry Wt. Soil + Container (gm)	416.07	439.60
Wt. Container (gm)	152.04	150.23
Mosture Content (%)	17.3	17.0
Average Moisture Content (%)	17.2	
Wet Density (pcf)	120.0	
After Test Dry Density (pcf)	102.4	

TEST LOAD DATA

Piston Diameter (inches): 1.954

Penetration	Mold No.:	F
(inch)	LOAD (lb)	Stress (psi)
0.000	0	0.00
0.025	138	46.02
0.050	516	172.07
0.075	929	309.80
0.100	1346	448.85
0.125	1688	562.90
0.150	1975	658.61
0.175	2253	751.32
0.200	2525	842.02
0.225	2778	926.39
0.250	2997	999.42
0.275	3220	1073.78
0.300	3431	1144.15
0.325	3610	1203.84
0.350	3796	1265.86
0.375	3998	1333.23
0.400	4191	1397.59
0.425	4380	1460.61
0.450	4543	1515.00
0.475	4648	1550.00
0.500	4702	1567.99

TEST RESULTS

CBR @ .1": 54

CBR @ .2": 61

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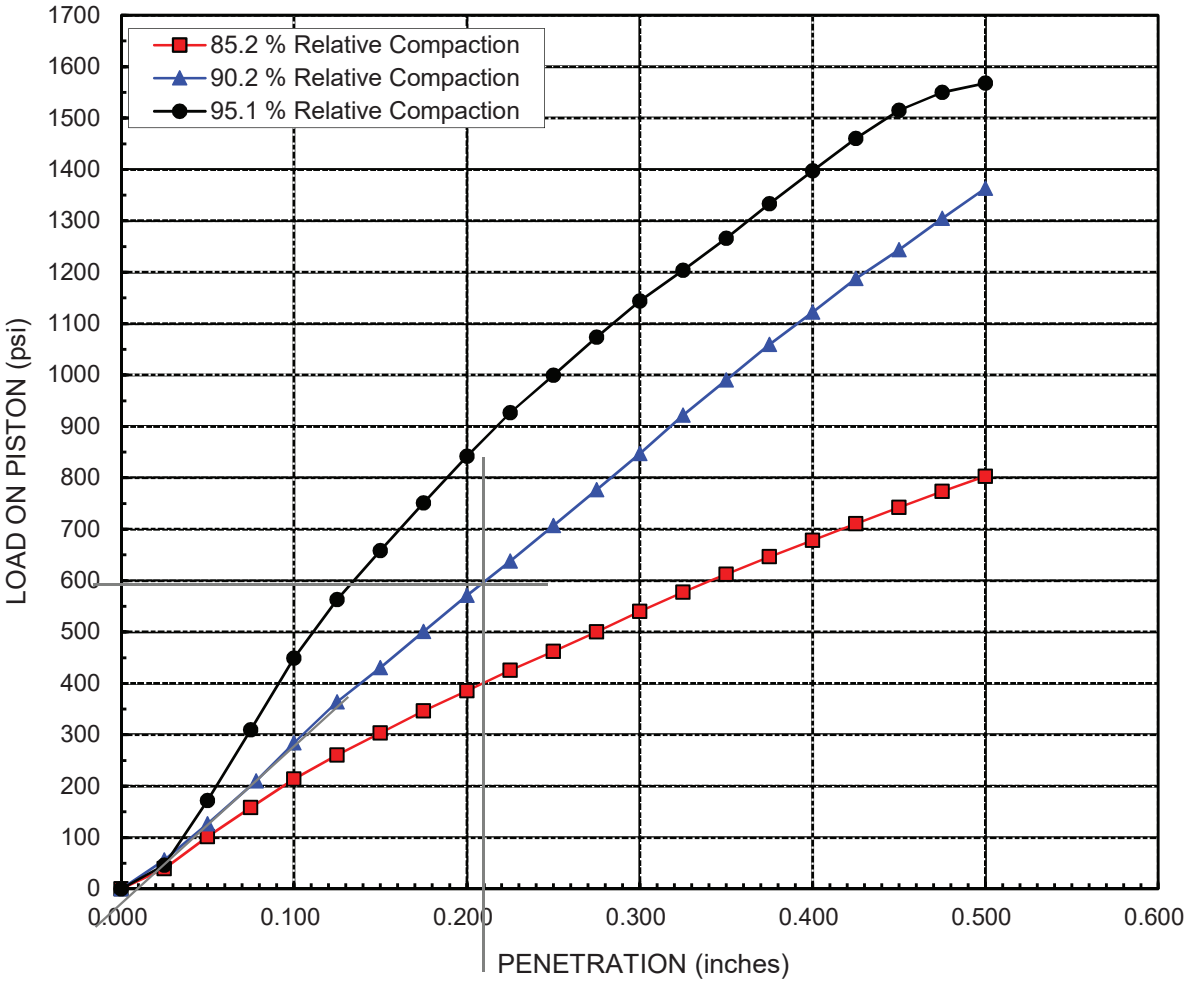
CALIFORNIA BEARING RATIO (CBR)
OF LABORATORY-COMPACTED SOIL
AASHTO T193

Project Name:	Reds Meadow - V1 CBR	Tested By :	JT	Date:	06/20/18
Project No. :	100062	Data Input By:	JP	Date:	06/26/18
Boring No.:	B-12 & B-14	Checked By:	AP	Date:	06/27/18
Sample No.:	1				
Depth (ft.) :	0-5				
Soil Description :	Silty Sand w/gravel				



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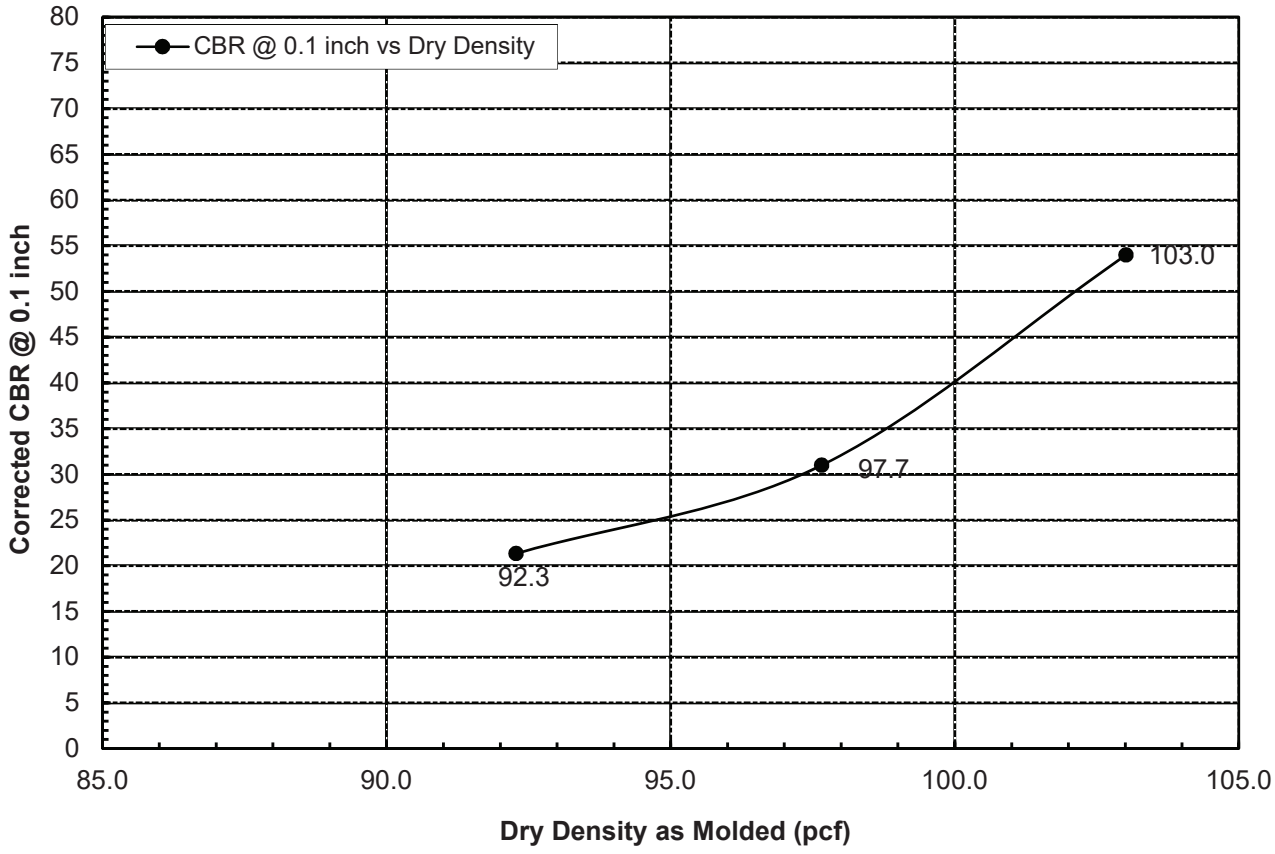
CALIFORNIA BEARING RATIO (CBR) OF LABORATORY-COMPACTED SOIL AASHTO T193

Project Name:	Reds Meadow - V1 CBR	Tested By :	JT	Date:	06/20/18
Project No. :	100062	Data Input By:	JP	Date:	06/26/18
Boring No.:	B-12 & B-14	Checked By:	AP	Date:	06/27/18
Sample No.:	1				
Depth (ft.) :	0-5				
Soil Description :	Silty Sand w/gravel				

TEST RESULTS

Dry Density (pcf)	Maximum Dry Density by AASHTO T180 (pcf)	Relative Compaction (%)	Blow Per Layer	CBR @0.1"	CBR @0.2"
92.3	108.3	85.2	10	21	26
97.7	108.3	90.2	25	31	40
103.0	108.3	95.1	50	54	61



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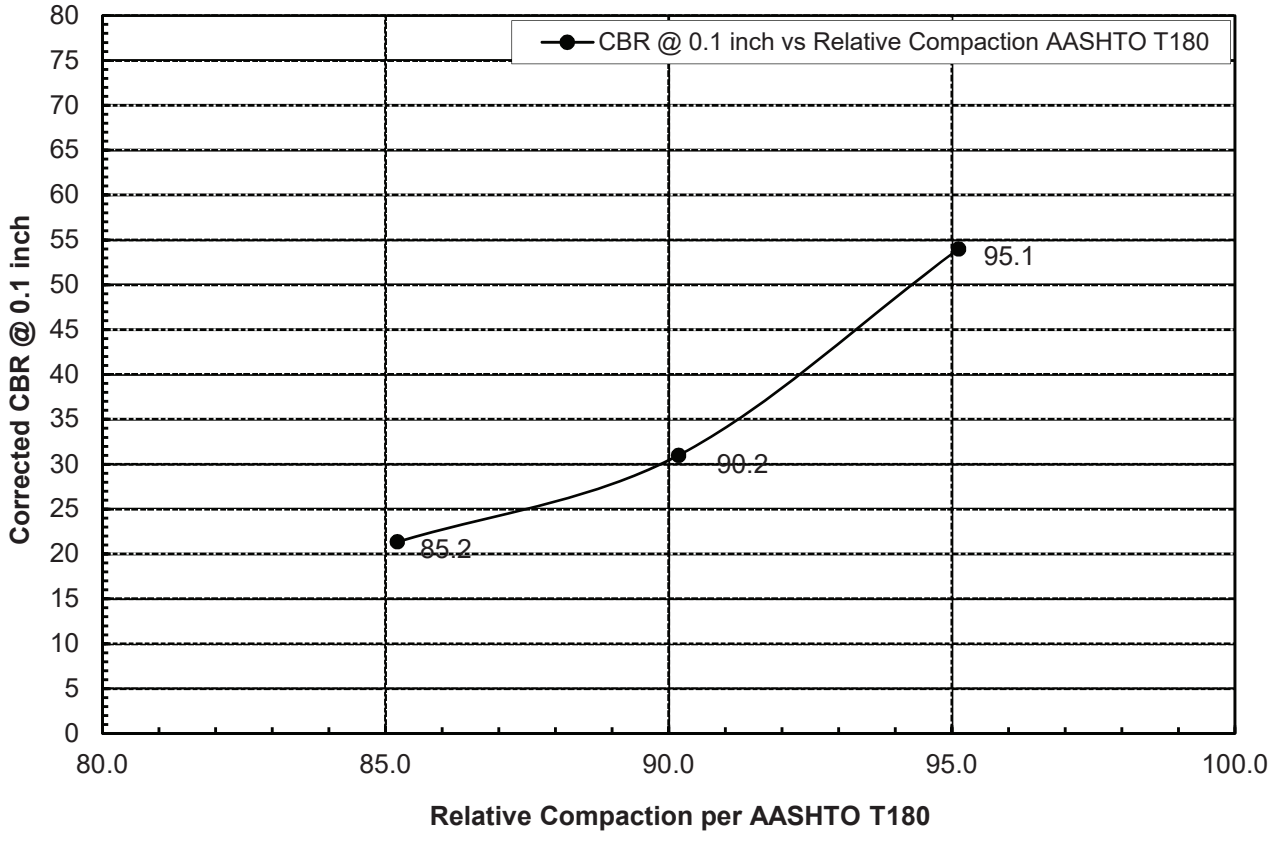
CALIFORNIA BEARING RATIO (CBR) OF LABORATORY-COMPACTED SOIL AASHTO T193

Project Name:	Reds Meadow - V1 CBR	Tested By :	JT	Date:	06/20/18
Project No. :	100062	Data Input By:	JP	Date:	06/26/18
Boring No.:	B-12 & B-14	Checked By:	AP	Date:	06/27/18
Sample No.:	1				
Depth (ft.) :	0-5				
Soil Description :	Silty Sand w/gravel				

TEST RESULTS

Dry Density (pcf)	Maximum Dry Density by AASHTO T180 (pcf)	Relative Compaction (%)	Blow Per Layer	CBR @0.1"	CBR @0.2"
92.3	108.3	85.2	10	21	26
97.7	108.3	90.2	25	31	40
103.0	108.3	95.1	50	54	61



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CALIFORNIA BEARING RATIO (CBR)
OF LABORATORY-COMPACTED SOIL
AASHTO T193

Project Name:	Reds Meadow - V1 CBR	Tested By :	JT	Date	06/22/18
Project No. :	100062	Input By:	JP	Date	06/27/18
Boring No.:	B-22, B-24, B-25 & B-27	Checked By:	AP	Date	06/27/18
Sample No.:	1				
Depth (ft.) :	0-5				
Soil Description :	Silty Sand				

SAMPLE DESCRIPTION BEFORE SOAKING

Mold Number	A
Blows Per Layer	10
Wt of Wet Soil & Mold (gm)	11976
Weight of Mold (gm)	7852
Weight of Wet Soil (gm)	4124
Mold Volume (cu.ft)	0.0818
Container No.	
Wet Wt. Soil + Container (gm)	517.01
Dry Wt. Soil + Container (gm)	496.4
Wt. Container (gm)	329.03
Moisture Content (%)	12.31
Wet Density (pcf)	111.1
Dry Density (pcf)	99.0

SAMPLE PREPARATION

Wt of Hammer (Lbs)	10
No. of Layers	5
No. of Blows/Layer	10
Drop Height (inches)	18
Surcharge Weight (Lbs)	10
Max. Dry Density (pcf)	113.0
Molded Relative Comp (%)	87.6
Req'd % Moisture	12.0
No. of Trials	1
% Retained 3/4" Sieve	0.00%

DEFORMATION DURING SOAKING PERIOD

Sample Length (inch) 5

DATE	TIME	Mold No.:	A
		Dial Rdgs	Swell (in)
06/22/18	15:45	0.5910	
06/25/18	13:05	0.5870	
06/26/18	14:15	0.5870	-0.0040
Percent Swell/Collapse (+/-)			-0.08

AFTER SOAKING

Mold Number	A	
Wt. of Wet Soil + Mold (gm)	12247	
Weight of Mold (gm)	7852	
Weight of Wet Soil (gm)	4395	
Mold Volume (cu.ft)	0.0817	
Moisture Sample	Top	Bottom
Container No.		
Wet Wt. Soil + Container (gm)	505.65	464.27
Dry Wt. Soil + Container (gm)	453.85	409.06
Wt. Container (gm)	150.04	135.62
Mosture Content (%)	17.1	20.2
Average Moisture Content (%)	18.6	
Wet Density (pcf)	118.5	
After Test Dry Density (pcf)	99.9	

TEST LOAD DATA

Piston Diameter (inches): 1.954

Penetration	Mold No.:	A
(inch)	LOAD (lb)	Stress (psi)
0.000	0	0.00
0.025	85	28.35
0.050	125	41.68
0.075	145	48.35
0.100	158	52.69
0.125	170	56.69
0.150	181	60.36
0.175	190	63.36
0.200	202	67.36
0.225	213	71.03
0.250	222	74.03
0.275	232	77.37
0.300	245	81.70
0.325	257	85.70
0.350	268	89.37
0.375	280	93.37
0.400	293	97.71
0.425	305	101.71
0.450	318	106.04
0.475	330	110.05
0.500	346	115.38

TEST RESULTS

CBR @ .1": 5
CBR @ .2": 4

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CALIFORNIA BEARING RATIO (CBR) OF LABORATORY-COMPACTED SOIL

AASHTO T193

Project Name:	Reds Meadow - V1 CBR	Tested By :	JT	Date	06/22/18
Project No. :	100062	Input By:	JP	Date	06/27/18
Boring No.:	B-22, B-24, B-25 & B-27	Checked By:	AP	Date	06/27/18
Sample No.:	1				
Depth (ft.) :	0-5				
Soil Description :	Silty Sand				

SAMPLE DESCRIPTION BEFORE SOAKING

Mold Number	B
Blows Per Layer	20
Wt of Wet Soil & Mold (gm)	12216
Weight of Mold (gm)	7833
Weight of Wet Soil (gm)	4383
Mold Volume (cu.ft)	0.0818
Container No.	
Wet Wt. Soil + Container (gm)	517.01
Dry Wt. Soil + Container (gm)	496.4
Wt. Container (gm)	329.03
Moisture Content (%)	12.31
Wet Density (pcf)	118.1
Dry Density (pcf)	105.2

SAMPLE PREPARATION

Wt of Hammer (Lbs)	10
No. of Layers	5
No. of Blows/Layer	20
Drop Height (inches)	18
Surcharge Weight (Lbs)	10
Max. Dry Density (pcf)	113.0
Molded Relative Comp (%)	93.1
Req'd % Moisture	12.0
No. of Trials	1
% Retained 3/4" Sieve	0.00%

DEFORMATION DURING SOAKING PERIOD

Sample Length (inch) 5

DATE	TIME	Mold No.:	B
		Dial Rdgs	Swell (in)
06/22/18	15:45	0.5940	
06/25/18	13:05	0.5950	
06/26/18	14:15	0.5960	0.0020
Percent Swell/Collapse (+/-)			0.04

AFTER SOAKING

Mold Number	B	
Wt. of Wet Soil + Mold + Base Plate (gm)	12401	
Weight of Mold+ Base Plate (gm)	7833	
Weight of Wet Soil (gm)	4568	
Mold Volume (cu.ft)	0.0818	
Moisture Sample	Top	Bottom
Container No.		
Wet Wt. Soil + Container (gm)	502.62	534.57
Dry Wt. Soil + Container (gm)	452.30	475.93
Wt. Container (gm)	143.28	149.99
Mosture Content (%)	16.3	18.0
Average Moisture Content (%)	17.1	
Wet Density (pcf)	123.1	
After Test Dry Density (pcf)	105.1	

TEST LOAD DATA

Piston Diameter (inches): 1.954

Penetration	Mold No.:	B
(inch)	LOAD (lb)	Stress (psi)
0.000	0	0.00
0.025	245	81.70
0.050	479	159.73
0.078	646	215.42
0.100	784	261.44
0.125	897	299.13
0.150	999	333.14
0.175	1099	366.49
0.200	1199	399.83
0.225	1293	431.18
0.250	1387	462.53
0.275	1478	492.87
0.300	1569	523.22
0.325	1658	552.90
0.350	1740	580.24
0.375	1823	607.92
0.400	1909	636.60
0.425	1999	666.61
0.450	2086	695.63
0.475	2180	726.97
0.500	2275	758.65

TEST RESULTS

CBR @ .1":	**26**
CBR @ .2":	**27**

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CALIFORNIA BEARING RATIO (CBR) OF LABORATORY-COMPACTED SOIL

AASHTO T193

Project Name:	Reds Meadow - V1 CBR	Tested By :	JT	Date	06/22/18
Project No. :	100062	Input By:	JP	Date	06/27/18
Boring No.:	B-22, B-24, B-25 & B-27	Checked By:	AP	Date	06/27/18
Sample No.:	1				
Depth (ft.) :	0-5				
Soil Description :	Silty Sand				

SAMPLE DESCRIPTION BEFORE SOAKING

Mold Number	C
Blows Per Layer	50
Wt of Wet Soil & Mold (gm)	12463
Weight of Mold (gm)	7836
Weight of Wet Soil (gm)	4627
Mold Volume (cu.ft)	0.0818
Container No.	
Wet Wt. Soil + Container (gm)	517.01
Dry Wt. Soil + Container (gm)	496.4
Wt. Container (gm)	329.03
Moisture Content (%)	12.31
Wet Density (pcf)	124.7
Dry Density (pcf)	111.0

SAMPLE PREPARATION

Wt of Hammer (Lbs)	10
No. of Layers	5
No. of Blows/Layer	50
Drop Height (inches)	18
Surcharge Weight (Lbs)	10
Max. Dry Density (pcf)	113.0
Molded Relative Comp (%)	98.3
Req'd % Moisture	12.0
No. of Trials	1
% Retained 3/4" Sieve	0.00%

DEFORMATION DURING SOAKING PERIOD

Sample Length (inch) 5

DATE	TIME	Mold No.:	C
		Dial Rdgs	Swell (in)
06/22/18	15:45	0.6150	
06/25/18	13:05	0.6120	
06/26/18	14:15	0.6110	-0.0040
Percent Swell/Collapse (+/-)			-0.08

AFTER SOAKING

Mold Number	C	
Wt. of Wet Soil + Mold + Base Plate (gm)	12567	
Weight of Mold+ Base Plate (gm)	7836	
Weight of Wet Soil (gm)	4731	
Mold Volume (cu.ft)	0.0817	
Moisture Sample	Top	Bottom
Container No.		
Wet Wt. Soil + Container (gm)	451.69	490.40
Dry Wt. Soil + Container (gm)	414.65	441.05
Wt. Container (gm)	149.54	150.29
Mosture Content (%)	14.0	17.0
Average Moisture Content (%)	15.5	
Wet Density (pcf)	127.6	
After Test Dry Density (pcf)	110.5	

TEST LOAD DATA

Piston Diameter (inches): 1.954

Penetration	Mold No.:	C
(inch)	LOAD (lb)	Stress (psi)
0.000	0	0.00
0.025	346	115.38
0.050	704	234.77
0.075	1178	392.83
0.100	1621	540.56
0.125	1999	666.61
0.150	2318	772.99
0.175	2585	862.03
0.200	2828	943.06
0.225	3062	1021.10
0.250	3296	1099.13
0.275	3521	1174.16
0.300	3739	1246.86
0.325	3973	1324.89
0.350	4198	1399.92
0.375	4437	1479.62
0.400	4650	1550.65
0.425	4874	1625.35
0.450	5089	1697.05
0.475	5318	1773.41
0.500	5558	1853.44

TEST RESULTS

CBR @ .1": 60

CBR @ .2": 65

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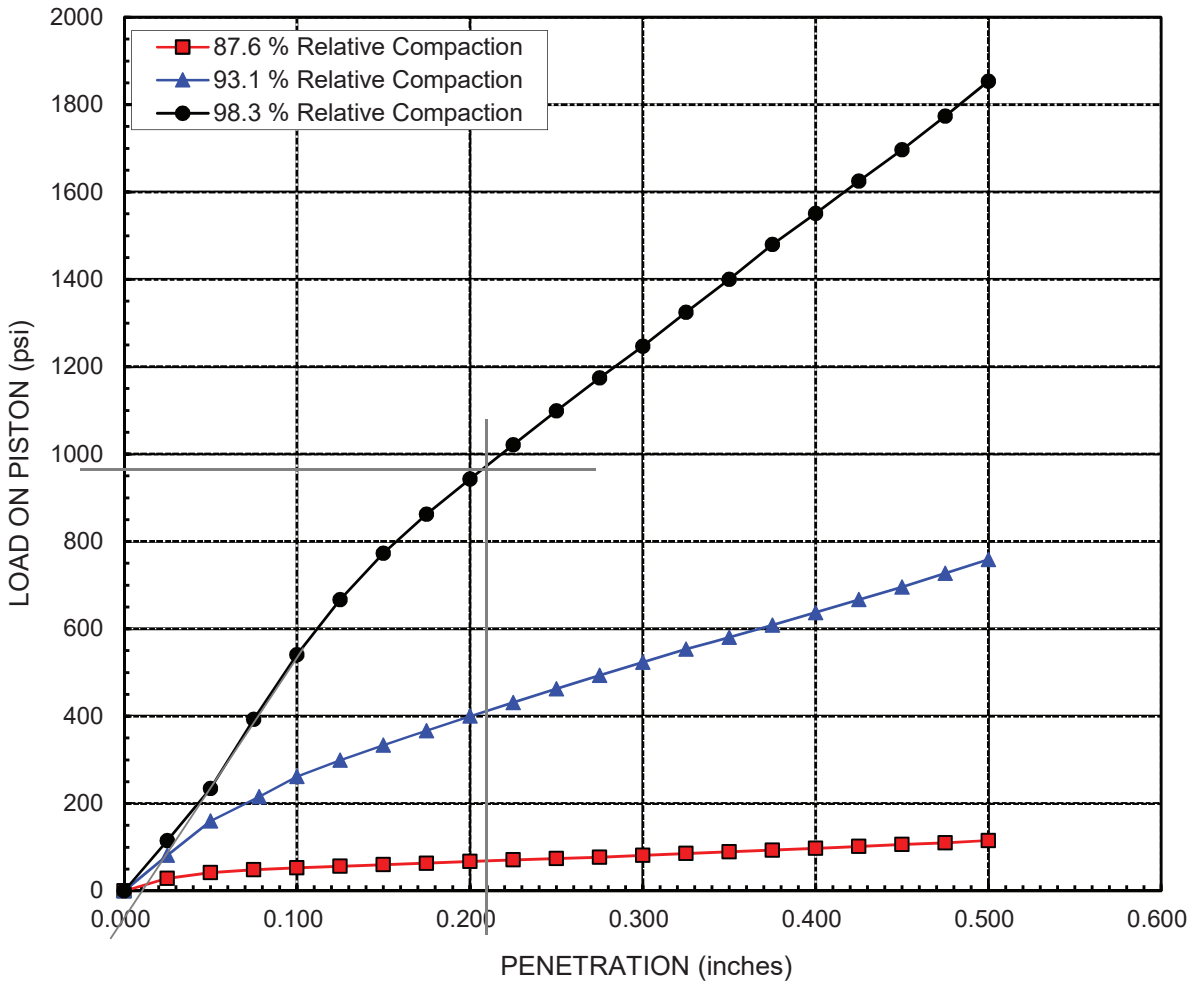
CALIFORNIA BEARING RATIO (CBR)
OF LABORATORY-COMPACTED SOIL
AASHTO T193

Project Name:	Reds Meadow - V1 CBR	Tested By :	JT	Date:	06/22/18
Project No. :	100062	Data Input By:	JP	Date:	06/27/18
Boring No.:	B-22, B-24, B-25 & B-27	Checked By:	AP	Date:	06/27/18
Sample No.:	1				
Depth (ft.) :	0-5				
Soil Description :	Silty Sand				



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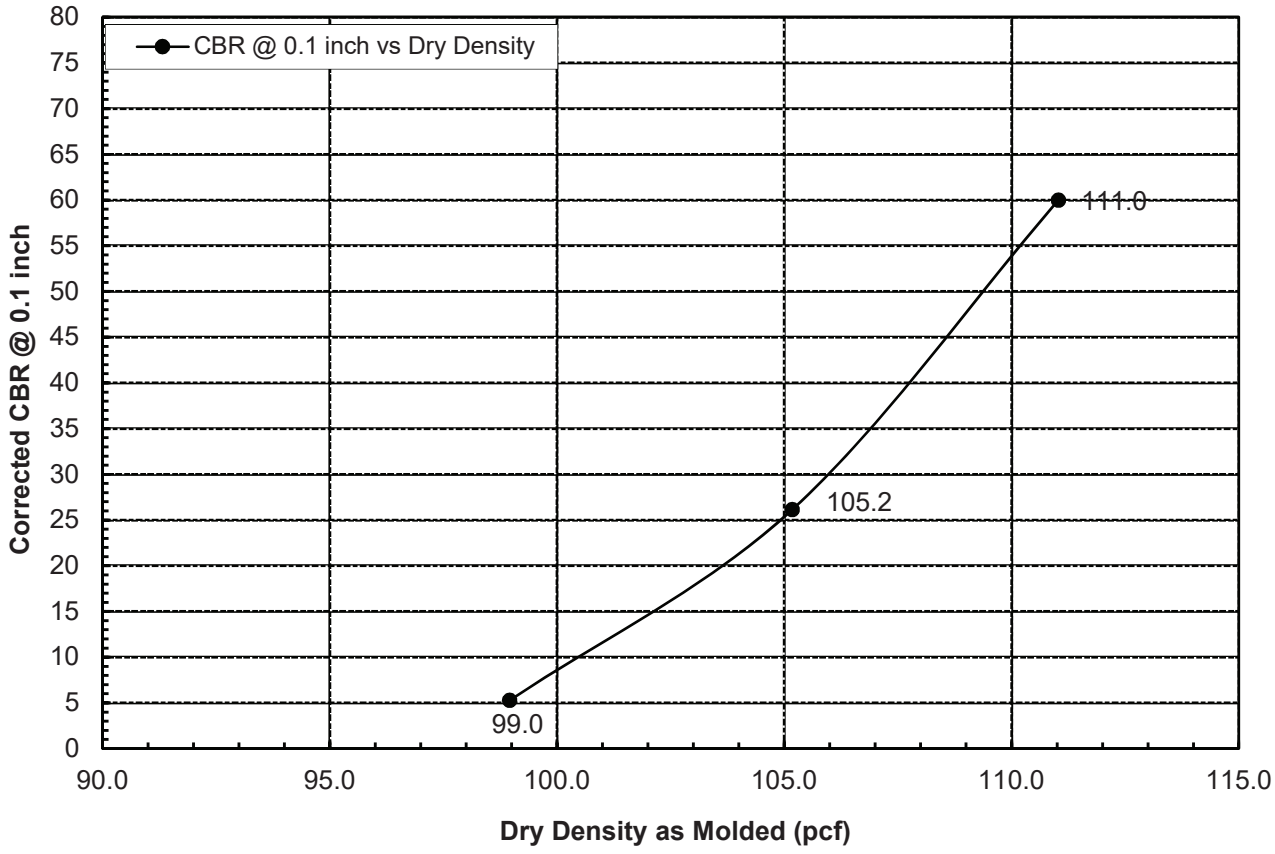
CALIFORNIA BEARING RATIO (CBR) OF LABORATORY-COMPACTED SOIL AASHTO T193

Project Name:	Reds Meadow - V1 CBR	Tested By :	JT	Date:	06/22/18
Project No. :	100062	Data Input By:	JP	Date:	06/27/18
Boring No.:	B-22, B-24, B-25 & B-27	Checked By:	AP	Date:	06/27/18
Sample No.:	1				
Depth (ft.) :	0-5				
Soil Description :	Silty Sand				

TEST RESULTS

Dry Density (pcf)	Maximum Dry Density by AASHTO T180 (pcf)	Relative Compaction (%)	Blow Per Layer	CBR @0.1"	CBR @0.2"
99.0	113.0	87.6	10	5	4
105.2	113.0	93.1	20	26	27
111.0	113.0	98.3	50	60	65



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Project Name:	Reds Meadow - V1 CBR	Tested By :	JT	Date:	06/22/18
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Boring No.:	B-22, B-24, B-25 & B-27	Checked By:	AP	Date:	06/27/18
Sample No.:	1				
Depth (ft.) :	0-5				
Soil Description :	Silty Sand				

TEST RESULTS

Dry Density (pcf)	Maximum Dry Density by AASHTO T180 (pcf)	Relative Compaction (%)	Blow Per Layer	CBR @0.1"	CBR @0.2"
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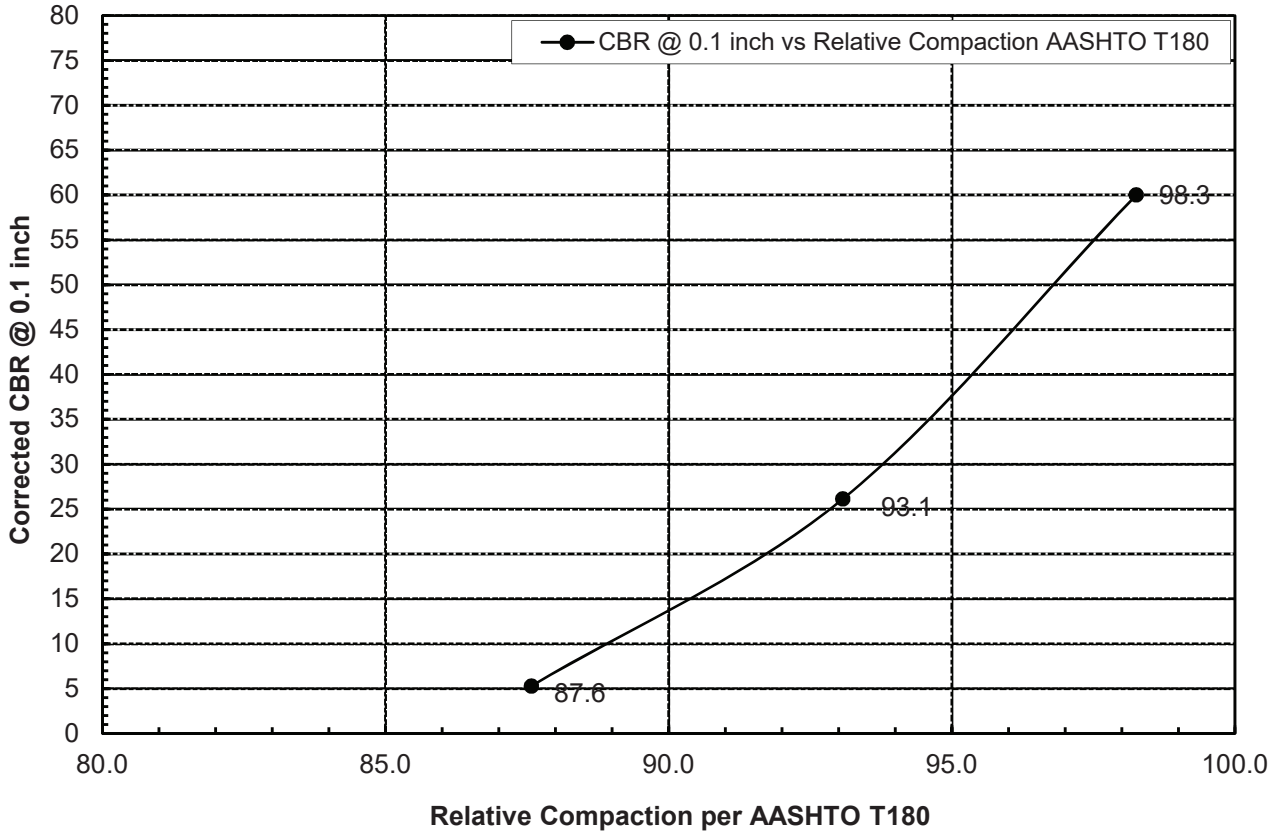

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CALIFORNIA BEARING RATIO (CBR) OF LABORATORY-COMPACTED SOIL

AASHTO T193

Project Name:	Reds Meadow - V1 CBR	Tested By :	JT	Date	06/21/18
Project No. :	100062	Input By:	JP	Date	06/26/18
Boring No.:	B-28, B-29, B-31AB & B-32	Checked By:	AP	Date	06/27/18
Sample No.:	1				
Depth (ft.) :	0-5				
Soil Description :	Silty Sand				

SAMPLE DESCRIPTION BEFORE SOAKING

Mold Number	1
Blows Per Layer	10
Wt of Wet Soil & Mold (gm)	11049
Weight of Mold (gm)	7194
Weight of Wet Soil (gm)	3855
Mold Volume (cu.ft)	0.0818
Container No.	
Wet Wt. Soil + Container (gm)	578.41
Dry Wt. Soil + Container (gm)	562.09
Wt. Container (gm)	474.05
Moisture Content (%)	18.54
Wet Density (pcf)	103.9
Dry Density (pcf)	87.6

SAMPLE PREPARATION

Wt of Hammer (Lbs)	10
No. of Layers	5
No. of Blows/Layer	10
Drop Height (inches)	18
Surcharge Weight (Lbs)	10
Max. Dry Density (pcf)	97.5
Molded Relative Comp (%)	89.9
Req'd % Moisture	18.6
No. of Trials	1
% Retained 3/4" Sieve	0.00%

DEFORMATION DURING SOAKING PERIOD

Sample Length (inch) 5

DATE	TIME	Mold No.:	1
		Dial Rdgs	Swell (in)
06/21/18	16:10	0.2798	
06/22/18	15:50	0.2718	
06/25/18	10:35	0.2716	-0.0082
Percent Swell/Collapse (+/-)			-0.16

AFTER SOAKING

Mold Number	1	
Wt. of Wet Soil + Mold (gm)	11177	
Weight of Mold (gm)	7194	
Weight of Wet Soil (gm)	3983	
Mold Volume (cu.ft)	0.0817	
Moisture Sample	Top	Bottom
Container No.		
Wet Wt. Soil + Container (gm)	476.56	461.47
Dry Wt. Soil + Container (gm)	415.24	399.93
Wt. Container (gm)	150.87	148.76
Mosture Content (%)	23.2	24.5
Average Moisture Content (%)	23.8	
Wet Density (pcf)	107.5	
After Test Dry Density (pcf)	86.8	

TEST LOAD DATA

Piston Diameter (inches): 1.954

Penetration	Mold No.:	1
(inch)	LOAD (lb)	Stress (psi)
0.000	0	0.00
0.025	76	25.34
0.050	192	64.03
0.075	319	106.38
0.100	448	149.40
0.125	573	191.08
0.150	684	228.10
0.175	787	262.44
0.200	885	295.12
0.225	981	327.14
0.250	1074	358.15
0.275	1170	390.16
0.300	1264	421.51
0.325	1355	451.86
0.350	1443	481.20
0.375	1530	510.21
0.400	1617	539.23
0.425	1705	568.57
0.450	1798	599.58
0.475	1890	630.26
0.500	1986	662.28

TEST RESULTS

CBR @ .1": 15

CBR @ .2": 20

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CALIFORNIA BEARING RATIO (CBR) OF LABORATORY-COMPACTED SOIL

AASHTO T193

Project Name:	Reds Meadow - V1 CBR	Tested By :	JT	Date	06/21/18
Project No. :	100062	Input By:	JP	Date	06/26/18
Boring No.:	B-28, B-29, B-31AB & B-32	Checked By:	AP	Date	06/27/18
Sample No.:	1				
Depth (ft.) :	0-5				
Soil Description :	Silty Sand				

SAMPLE DESCRIPTION BEFORE SOAKING

Mold Number	2
Blows Per Layer	20
Wt of Wet Soil & Mold (gm)	11238
Weight of Mold (gm)	7192
Weight of Wet Soil (gm)	4046
Mold Volume (cu.ft)	0.0818
Container No.	
Wet Wt. Soil + Container (gm)	578.41
Dry Wt. Soil + Container (gm)	562.09
Wt. Container (gm)	474.05
Moisture Content (%)	18.54
Wet Density (pcf)	109.0
Dry Density (pcf)	92.0

SAMPLE PREPARATION

Wt of Hammer (Lbs)	10
No. of Layers	5
No. of Blows/Layer	20
Drop Height (inches)	18
Surcharge Weight (Lbs)	10
Max. Dry Density (pcf)	97.5
Molded Relative Comp (%)	94.3
Req'd % Moisture	18.6
No. of Trials	1
% Retained 3/4" Sieve	0.00%

DEFORMATION DURING SOAKING PERIOD

Sample Length (inch) 5

DATE	TIME	Mold No.:	2
		Dial Rdgs	Swell (in)
06/21/18	16:10	0.2961	
06/22/18	15:50	0.2915	
06/25/18	10:35	0.2907	-0.0054
Percent Swell/Collapse (+/-)			-0.11

AFTER SOAKING

Mold Number	2	
Wt. of Wet Soil + Mold + Base Plate (gm)	11304	
Weight of Mold+ Base Plate (gm)	7192	
Weight of Wet Soil (gm)	4112	
Mold Volume (cu.ft)	0.0817	
Moisture Sample	Top	Bottom
Container No.		
Wet Wt. Soil + Container (gm)	471.23	446.01
Dry Wt. Soil + Container (gm)	415.34	386.30
Wt. Container (gm)	140.97	142.57
Mosture Content (%)	20.4	24.5
Average Moisture Content (%)	22.4	
Wet Density (pcf)	110.9	
After Test Dry Density (pcf)	90.6	

TEST LOAD DATA

Piston Diameter (inches): 1.954

Penetration	Mold No.:	2
(inch)	LOAD (lb)	Stress (psi)
0.000	0	0.00
0.025	39	13.07
0.050	110	36.82
0.078	212	70.70
0.100	336	112.05
0.125	499	166.47
0.150	686	228.90
0.175	892	297.46
0.200	1102	367.62
0.225	1308	436.18
0.250	1502	500.74
0.275	1680	560.24
0.300	1831	610.66
0.325	1984	661.61
0.350	2126	709.10
0.375	2253	751.25
0.400	2387	796.07
0.425	2514	838.49
0.450	2625	875.30
0.475	2739	913.45
0.500	2848	949.73

TEST RESULTS

CBR @ .1": 26

CBR @ .2": 35

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CALIFORNIA BEARING RATIO (CBR) OF LABORATORY-COMPACTED SOIL

AASHTO T193

Project Name:	Reds Meadow - V1 CBR	Tested By :	JT	Date	06/21/18
Project No. :	100062	Input By:	JP	Date	06/26/18
Boring No.:	B-28, B-29, B-31AB & B-32	Checked By:	AP	Date	06/27/18
Sample No.:	1				
Depth (ft.) :	0-5				
Soil Description :	Silty Sand				

SAMPLE DESCRIPTION BEFORE SOAKING

Mold Number	3
Blows Per Layer	50
Wt of Wet Soil & Mold (gm)	11487
Weight of Mold (gm)	7211
Weight of Wet Soil (gm)	4276
Mold Volume (cu.ft)	0.0818
Container No.	
Wet Wt. Soil + Container (gm)	578.41
Dry Wt. Soil + Container (gm)	562.09
Wt. Container (gm)	474.05
Moisture Content (%)	18.54
Wet Density (pcf)	115.2
Dry Density (pcf)	97.2

SAMPLE PREPARATION

Wt of Hammer (Lbs)	10
No. of Layers	5
No. of Blows/Layer	50
Drop Height (inches)	18
Surcharge Weight (Lbs)	10
Max. Dry Density (pcf)	97.5
Molded Relative Comp (%)	99.7
Req'd % Moisture	18.6
No. of Trials	1
% Retained 3/4" Sieve	0.00%

DEFORMATION DURING SOAKING PERIOD

Sample Length (inch) 5

DATE	TIME	Mold No.:	3
		Dial Rdgs	Swell (in)
06/21/18	16:10	0.5302	
06/22/18	15:50	0.5236	
06/25/18	10:35	0.5247	-0.0055
Percent Swell/Collapse (+/-)			-0.11

AFTER SOAKING

Mold Number	3	
Wt. of Wet Soil + Mold + Base Plate (gm)	11535	
Weight of Mold+ Base Plate (gm)	7211	
Weight of Wet Soil (gm)	4324	
Mold Volume (cu.ft)	0.0817	
Moisture Sample	Top	Bottom
Container No.		
Wet Wt. Soil + Container (gm)	500.13	474.61
Dry Wt. Soil + Container (gm)	438.90	416.29
Wt. Container (gm)	151.52	151.07
Mosture Content (%)	21.3	22.0
Average Moisture Content (%)	21.6	
Wet Density (pcf)	116.7	
After Test Dry Density (pcf)	95.9	

TEST LOAD DATA

Piston Diameter (inches): 1.954

Penetration	Mold No.:	3
(inch)	LOAD (lb)	Stress (psi)
0.000	0	0.00
0.025	67	22.34
0.050	168	56.02
0.075	310	103.38
0.100	495	165.07
0.125	732	244.10
0.150	1007	335.81
0.175	1333	444.52
0.200	1671	557.23
0.225	2010	670.28
0.250	2334	778.33
0.275	2632	877.70
0.300	2906	969.07
0.325	3150	1050.44
0.350	3390	1130.47
0.375	3608	1203.17
0.400	3805	1268.87
0.425	4000	1333.89
0.450	4174	1391.92
0.475	4333	1444.94
0.500	4481	1494.29

TEST RESULTS

CBR @ .1": 42

CBR @ .2": 57

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CALIFORNIA BEARING RATIO (CBR)
OF LABORATORY-COMPACTED SOIL
AASHTO T193

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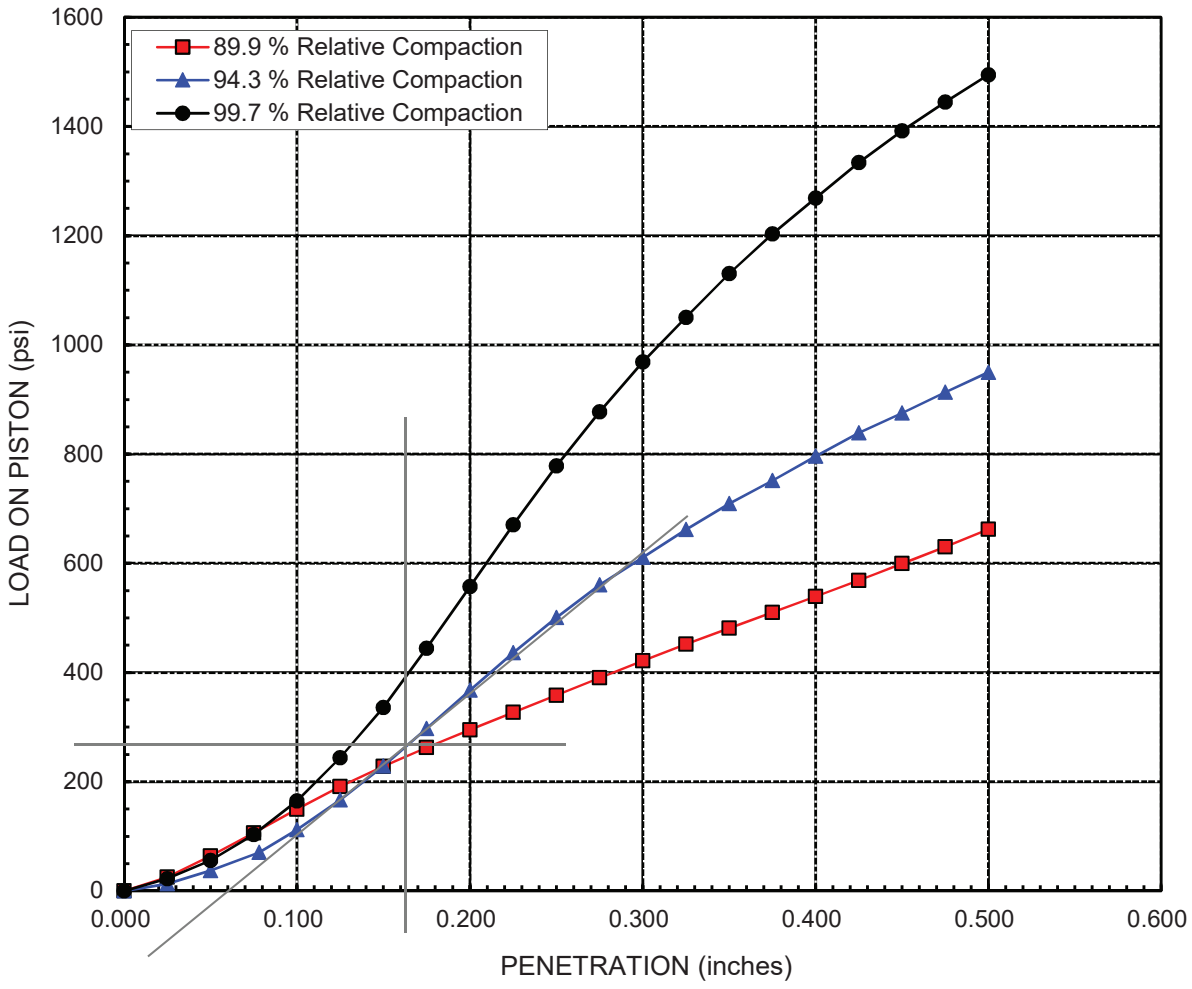
Project No. :	100062	Data Input By:	JP	Date:	06/26/18
Boring No.:	B-28, B-29, B-31AB & B-32	Checked By:	AP	Date:	06/27/18
Sample No.:	1				
Depth (ft.) :	0-5				
Soil Description :	Silty Sand				



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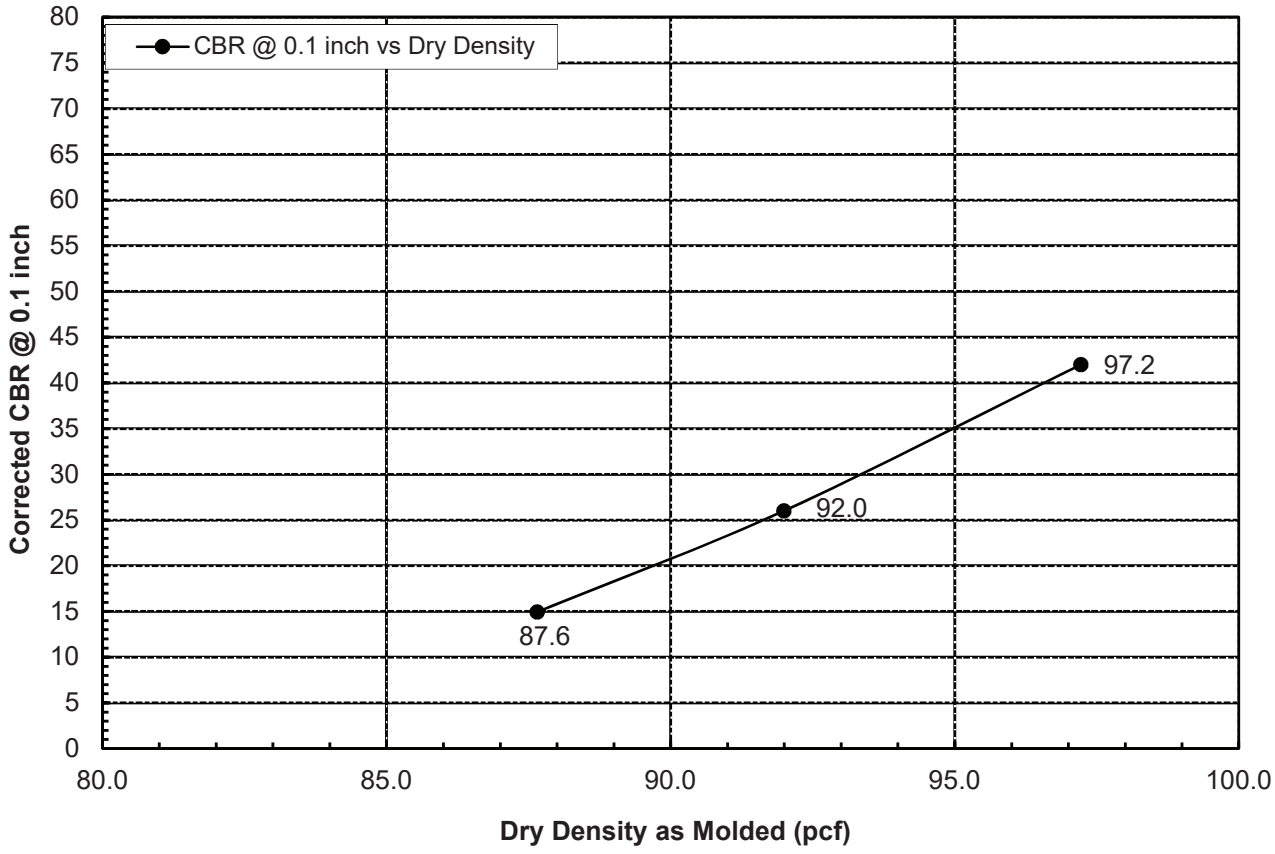
Boring No.:	B-28, B-29, B-31AB & B-32	Checked By:	AP	Date:	06/27/18
Sample No.:	1				
Depth (ft.) :	0-5				
Soil Description :	Silty Sand				

TEST RESULTS

Dry Density (pcf)	Maximum Dry Density by AASHTO T180 (pcf)	Relative Compaction (%)	Blow Per Layer	CBR @0.1"	CBR @0.2"
87.6	97.5	89.9	10	15	20
92.0	97.5	94.3	20	26	35
97.2	97.5	99.7	50	42	57



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Project No. :	100062	Data Input By:	JP	Date:	06/26/18
Boring No.:	B-28, B-29, B-31AB & B-32	Checked By:	AP	Date:	06/27/18
Sample No.:	1				
Depth (ft.) :	0-5				
Soil Description :	Silty Sand				

TEST RESULTS

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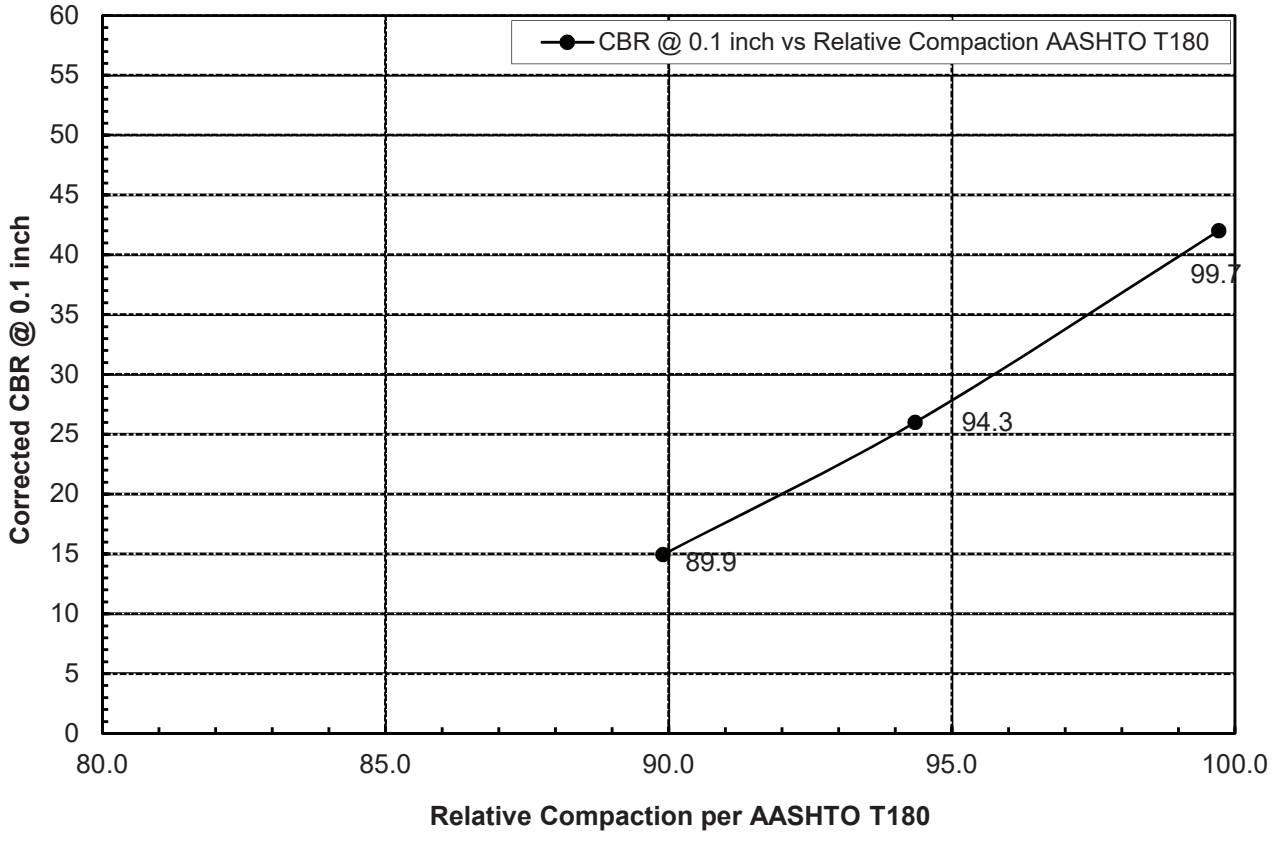
92.0	97.5	94.3	20	26	35
97.2	97.5	99.7	50	42	57



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CALIFORNIA BEARING RATIO (CBR)
OF LABORATORY-COMPACTED SOIL
AASHTO T193

Project Name:	Reds Meadow Road	Tested By :	JT	Date	11/16/18
Project No. :	100062-002	Input By:	JP	Date	11/26/18
Boring No.:	B-28	Checked By:	AP	Date	11/26/18
Sample No.:	1				
Depth (ft.) :	0				
Soil Description :	Silty Sand w/gravel & organics				

SAMPLE DESCRIPTION BEFORE SOAKING

Mold Number	D
Blows Per Layer	10
Wt of Wet Soil & Mold (gm)	11092
Weight of Mold (gm)	7827
Weight of Wet Soil (gm)	3265
Mold Volume (cu.ft)	0.0818
Container No.	
Wet Wt. Soil + Container (gm)	594.32
Dry Wt. Soil + Container (gm)	576.03
Wt. Container (gm)	474.24
Moisture Content (%)	17.97
Wet Density (pcf)	88.0
Dry Density (pcf)	74.6

SAMPLE PREPARATION

Wt of Hammer (Lbs)	10
No. of Layers	5
No. of Blows/Layer	10
Drop Height (inches)	18
Surcharge Weight (Lbs)	10
Max. Dry Density (pcf)	86.0
Molded Relative Comp (%)	86.7
Req'd % Moisture	18.0
No. of Trials	1
% Retained 3/4" Sieve	0.00%

DEFORMATION DURING SOAKING PERIOD

Sample Length (inch) 5

DATE	TIME	Mold No.:	D
		Dial Rdgs	Swell (in)
11/16/18	15:55	0.5540	
11/19/18	15:50	0.5560	
11/20/18	11:20	0.5560	0.0020
Percent Swell/Collapse (+/-)			0.04

AFTER SOAKING

Mold Number	D	
Wt. of Wet Soil + Mold (gm)	11490	
Weight of Mold (gm)	7827	
Weight of Wet Soil (gm)	3663	
Mold Volume (cu.ft)	0.0818	
Moisture Sample	Top	Bottom
Container No.		
Wet Wt. Soil + Container (gm)	437.16	475.97
Dry Wt. Soil + Container (gm)	367.39	392.80
Wt. Container (gm)	149.46	144.38
Mosture Content (%)	32.0	33.5
Average Moisture Content (%)	32.7	
Wet Density (pcf)	98.7	
After Test Dry Density (pcf)	74.3	

TEST LOAD DATA

Piston Diameter (inches): 1.954

Penetration	Mold No.:	D
(inch)	LOAD (lb)	Stress (psi)
0.000	0	0.00
0.025	57	19.01
0.050	123	41.02
0.075	179	59.69
0.100	226	75.36
0.125	268	89.37
0.150	309	103.04
0.175	346	115.38
0.200	381	127.05
0.225	414	138.06
0.250	447	149.06
0.275	479	159.73
0.300	513	171.07
0.325	539	179.74
0.350	580	193.41
0.375	617	205.75
0.400	647	215.76
0.425	677	225.76
0.450	712	237.43
0.475	745	248.44
0.500	780	260.11

TEST RESULTS

CBR @ .1": 8

CBR @ .2": 8

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CALIFORNIA BEARING RATIO (CBR) OF LABORATORY-COMPACTED SOIL

AASHTO T193

Project Name:	Reds Meadow Road	Tested By :	JT	Date	11/16/18
Project No. :	100062-002	Input By:	JP	Date	11/26/18
Boring No.:	B-28	Checked By:	AP	Date	11/26/18
Sample No.:	1				
Depth (ft.) :	0				
Soil Description :	Silty Sand w/gravel & organics				

SAMPLE DESCRIPTION BEFORE SOAKING

Mold Number	E
Blows Per Layer	35
Wt of Wet Soil & Mold (gm)	11296
Weight of Mold (gm)	7823
Weight of Wet Soil (gm)	3473
Mold Volume (cu.ft)	0.0818
Container No.	
Wet Wt. Soil + Container (gm)	594.32
Dry Wt. Soil + Container (gm)	576.03
Wt. Container (gm)	474.24
Moisture Content (%)	17.97
Wet Density (pcf)	93.6
Dry Density (pcf)	79.3

SAMPLE PREPARATION

Wt of Hammer (Lbs)	10
No. of Layers	5
No. of Blows/Layer	35
Drop Height (inches)	18
Surcharge Weight (Lbs)	10
Max. Dry Density (pcf)	86.0
Molded Relative Comp (%)	92.3
Req'd % Moisture	18.0
No. of Trials	1
% Retained 3/4" Sieve	0.00%

DEFORMATION DURING SOAKING PERIOD

Sample Length (inch) 5

DATE	TIME	Mold No.:	E
		Dial Rdgs	Swell (in)
11/16/18	15:55	0.5350	
11/19/18	15:50	0.5400	
11/20/18	11:20	0.5400	0.0050
Percent Swell/Collapse (+/-)			0.10

AFTER SOAKING

Mold Number	E	
Wt. of Wet Soil + Mold + Base Plate (gm)	11578	
Weight of Mold+ Base Plate (gm)	7823	
Weight of Wet Soil (gm)	3755	
Mold Volume (cu.ft)	0.0819	
Moisture Sample	Top	Bottom
Container No.		
Wet Wt. Soil + Container (gm)	502.37	560.00
Dry Wt. Soil + Container (gm)	432.57	462.55
Wt. Container (gm)	149.76	141.11
Mosture Content (%)	24.7	30.3
Average Moisture Content (%)	27.5	
Wet Density (pcf)	101.1	
After Test Dry Density (pcf)	79.3	

TEST LOAD DATA

Piston Diameter (inches): 1.954

Penetration	Mold No.:	E
(inch)	LOAD (lb)	Stress (psi)
0.000	0	0.00
0.025	134	44.69
0.050	333	111.05
0.078	610	203.42
0.100	849	283.12
0.125	1094	364.82
0.150	1281	427.18
0.175	1443	481.20
0.200	1585	528.56
0.225	1704	568.24
0.250	1819	606.59
0.275	1915	638.60
0.300	2013	671.28
0.325	2098	699.63
0.350	2181	727.31
0.375	2255	751.98
0.400	2334	778.33
0.425	2392	797.67
0.450	2482	827.68
0.475	2554	851.69
0.500	2619	873.37

TEST RESULTS

CBR @ .1": 33

CBR @ .2": 37

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CALIFORNIA BEARING RATIO (CBR) OF LABORATORY-COMPACTED SOIL

AASHTO T193

Project Name:	Reds Meadow Road	Tested By :	JT	Date	11/16/18
Project No. :	100062-002	Input By:	JP	Date	11/26/18
Boring No.:	B-28	Checked By:	AP	Date	11/26/18
Sample No.:	1				
Depth (ft.) :	0				
Soil Description :	Silty Sand w/gravel & organics				

SAMPLE DESCRIPTION BEFORE SOAKING

Mold Number	F
Blows Per Layer	60
Wt of Wet Soil & Mold (gm)	11500
Weight of Mold (gm)	7817
Weight of Wet Soil (gm)	3683
Mold Volume (cu.ft)	0.0818
Container No.	
Wet Wt. Soil + Container (gm)	594.32
Dry Wt. Soil + Container (gm)	576.03
Wt. Container (gm)	474.24
Moisture Content (%)	17.97
Wet Density (pcf)	99.3
Dry Density (pcf)	84.1

SAMPLE PREPARATION

Wt of Hammer (Lbs)	10
No. of Layers	5
No. of Blows/Layer	60
Drop Height (inches)	18
Surcharge Weight (Lbs)	10
Max. Dry Density (pcf)	86.0
Molded Relative Comp (%)	97.8
Req'd % Moisture	18.0
No. of Trials	1
% Retained 3/4" Sieve	0.00%

DEFORMATION DURING SOAKING PERIOD

Sample Length (inch) 5

DATE	TIME	Mold No.:	F
		Dial Rdgs	Swell (in)
11/16/18	15:55	0.5300	
11/19/18	15:50	0.5320	
11/20/18	11:20	0.5330	0.0030
Percent Swell/Collapse (+/-)			0.06

AFTER SOAKING

Mold Number	F	
Wt. of Wet Soil + Mold + Base Plate (gm)	11706	
Weight of Mold+ Base Plate (gm)	7817	
Weight of Wet Soil (gm)	3889	
Mold Volume (cu.ft)	0.0818	
Moisture Sample	Top	Bottom
Container No.		
Wet Wt. Soil + Container (gm)	518.25	650.78
Dry Wt. Soil + Container (gm)	447.15	543.92
Wt. Container (gm)	144.04	151.43
Mosture Content (%)	23.5	27.2
Average Moisture Content (%)	25.3	
Wet Density (pcf)	104.7	
After Test Dry Density (pcf)	83.6	

TEST LOAD DATA

Piston Diameter (inches): 1.954

Penetration	Mold No.:	F
(inch)	LOAD (lb)	Stress (psi)
0.000	0	0.00
0.025	171	57.02
0.050	424	141.39
0.075	902	300.79
0.100	1388	462.86
0.125	1838	612.92
0.150	2188	729.64
0.175	2466	822.35
0.200	2720	907.05
0.225	2935	978.74
0.250	3106	1035.77
0.275	3288	1096.46
0.300	3483	1161.49
0.325	3686	1229.18
0.350	3874	1291.88
0.375	4048	1349.90
0.400	4224	1408.59
0.425	4382	1461.28
0.450	4549	1516.97
0.475	4707	1569.66
0.500	4874	1625.35

TEST RESULTS

CBR @ .1": 65

CBR @ .2": 66

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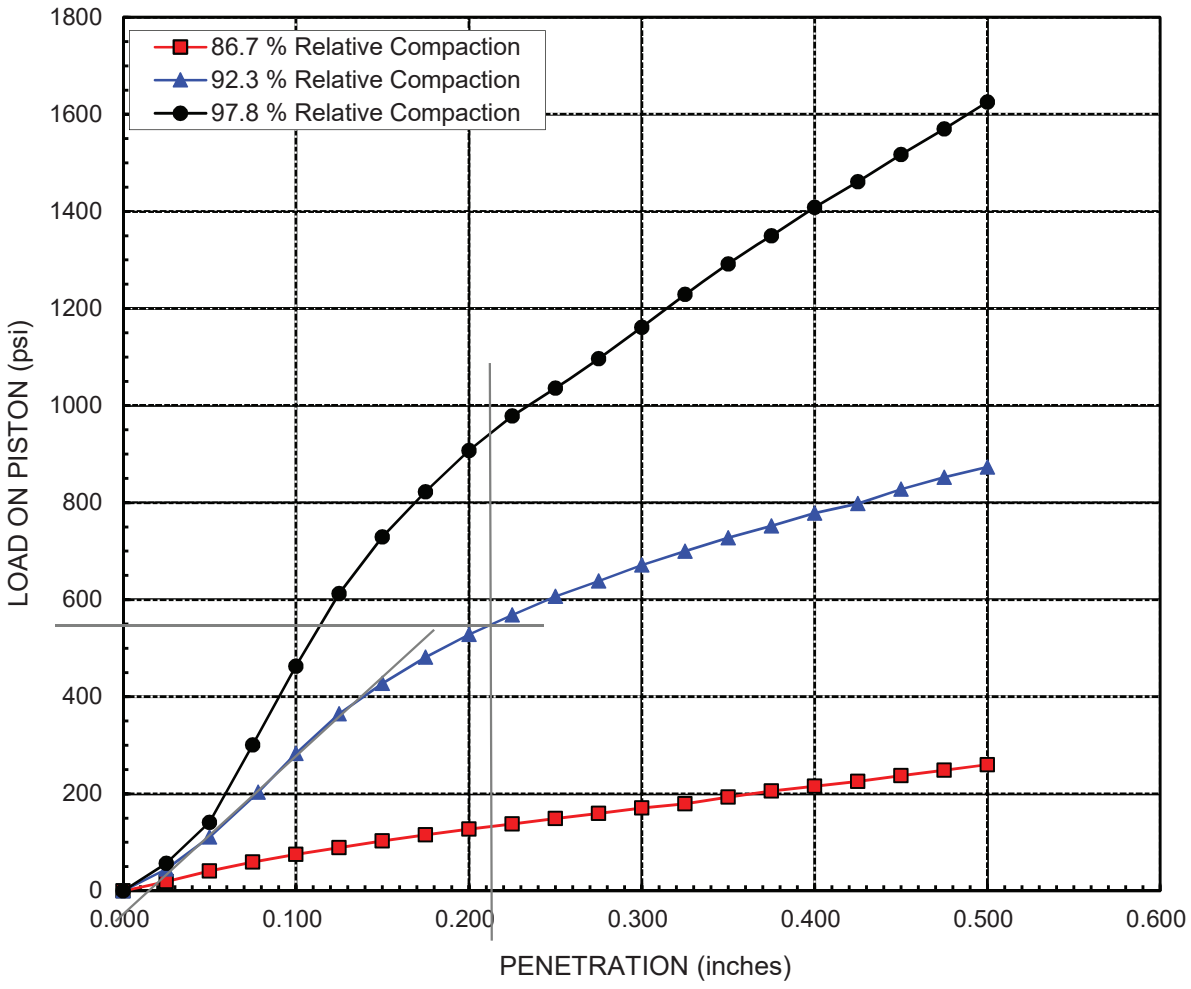
CALIFORNIA BEARING RATIO (CBR)
OF LABORATORY-COMPACTED SOIL
AASHTO T193

Project Name:	Reds Meadow Road	Tested By :	JT	Date:	11/16/18
Project No. :	100062-002	Data Input By:	JP	Date:	11/26/18
Boring No.:	B-28	Checked By:	AP	Date:	11/26/18
Sample No.:	1				
Depth (ft.) :	0				
Soil Description :	Silty Sand w/gravel & organics				



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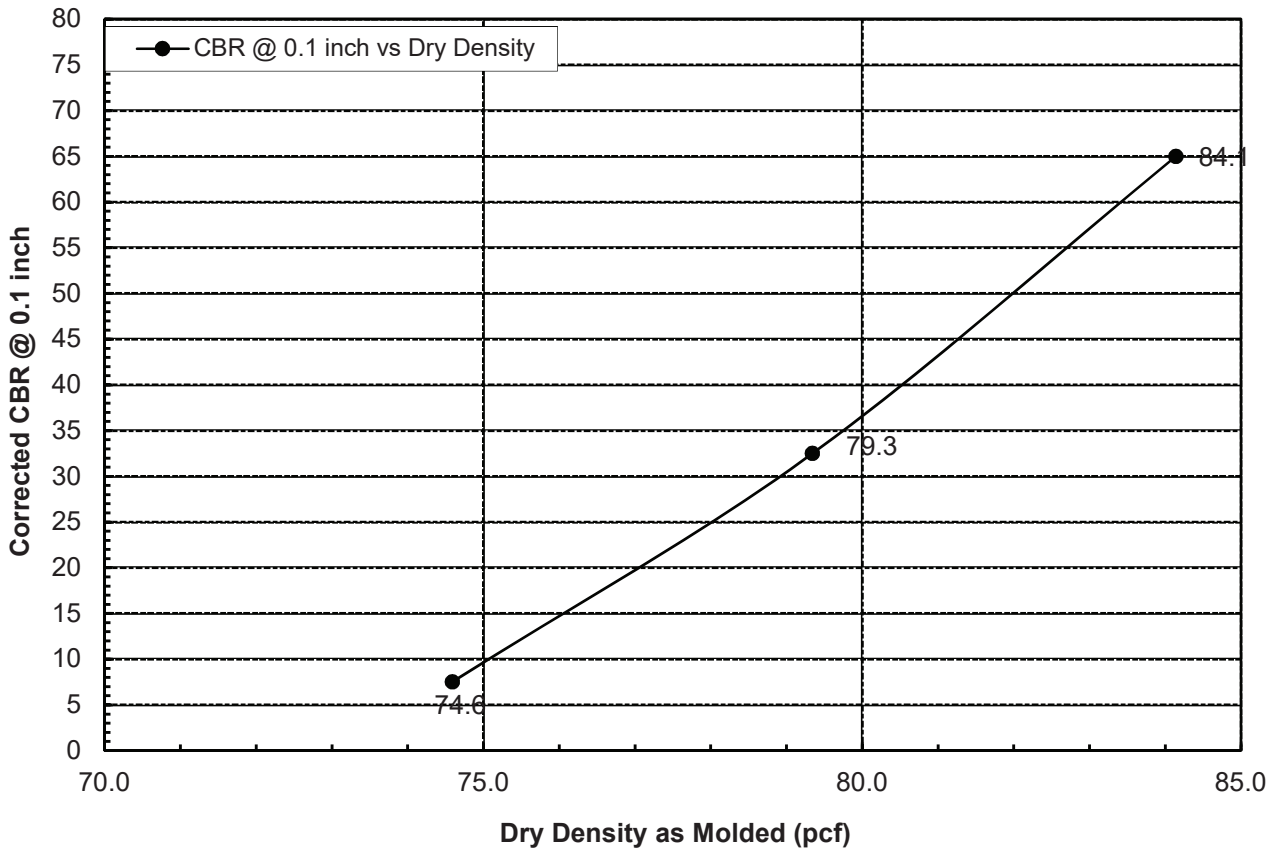
CALIFORNIA BEARING RATIO (CBR) OF LABORATORY-COMPACTED SOIL AASHTO T193

Project Name:	Reds Meadow Road	Tested By :	JT	Date:	11/16/18
Project No. :	100062-002	Data Input By:	JP	Date:	11/26/18
Boring No.:	B-28	Checked By:	AP	Date:	11/26/18
Sample No.:	1				
Depth (ft.) :	0				
Soil Description :	Silty Sand w/gravel & organics				

TEST RESULTS

Dry Density (pcf)	Maximum Dry Density by AASHTO T180 (pcf)	Relative Compaction (%)	Blow Per Layer	CBR @0.1"	CBR @0.2"
74.6	86.0	86.7	10	8	8
79.3	86.0	92.3	35	33	37
84.1	86.0	97.8	60	65	66



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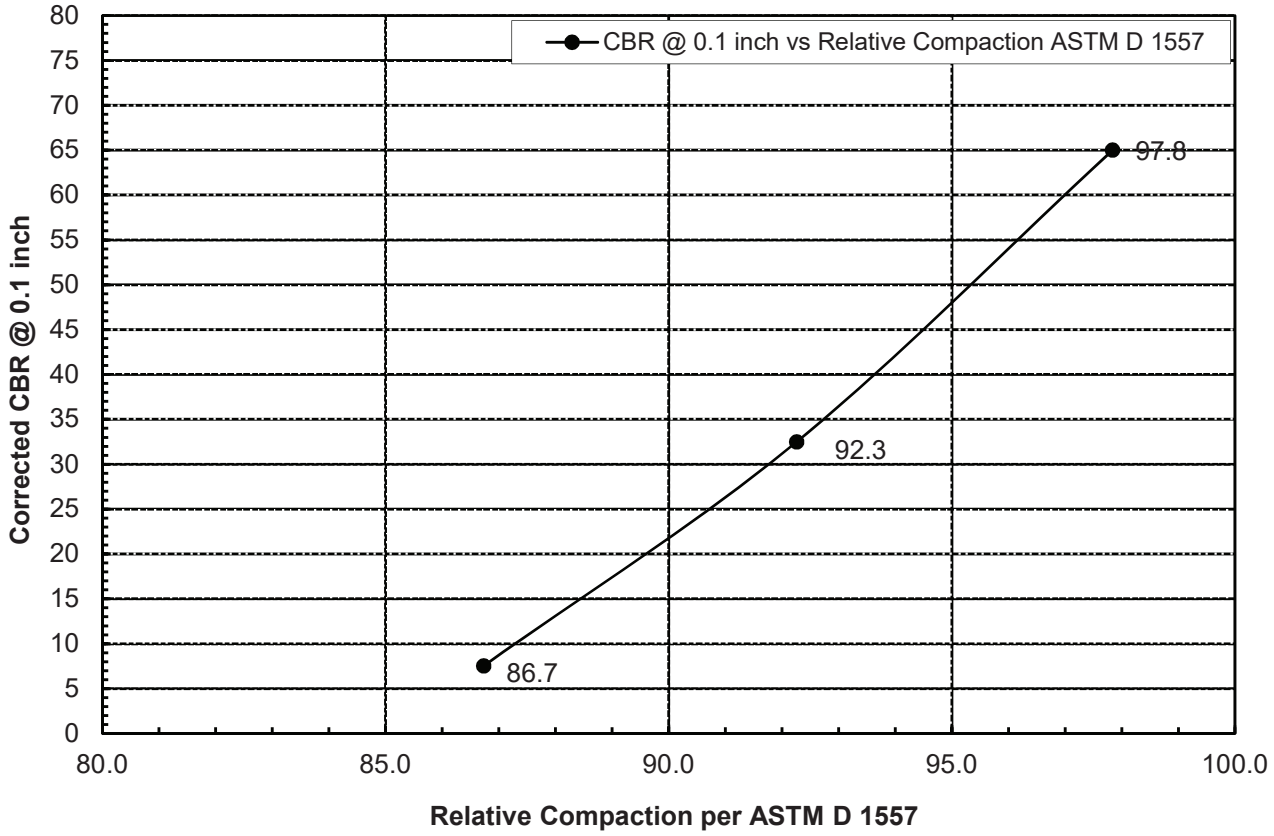
CALIFORNIA BEARING RATIO (CBR) OF LABORATORY-COMPACTED SOIL AASHTO T193

Project Name:	Reds Meadow Road	Tested By :	JT	Date:	11/16/18
Project No. :	100062-002	Data Input By:	JP	Date:	11/26/18
Boring No.:	B-28	Checked By:	AP	Date:	11/26/18
Sample No.:	1				
Depth (ft.) :	0				
Soil Description :	Silty Sand w/gravel & organics				

TEST RESULTS

Dry Density (pcf)	Maximum Dry Density by AASHTO T180 (pcf)	Relative Compaction (%)	Blow Per Layer	CBR @0.1"	CBR @0.2"
74.6	86.0	86.7	10	8	8
79.3	86.0	92.3	35	33	37
84.1	86.0	97.8	60	65	66



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CALIFORNIA BEARING RATIO (CBR) OF LABORATORY-COMPACTED SOIL

AASHTO T193

Project Name:	Reds Meadow - V1 CBR	Tested By :	JT	Date	06/20/18
Project No. :	100062	Input By:	JP	Date	06/26/18
Boring No.:	B-39	Checked By:	AP	Date	06/27/18
Sample No.:	1				
Depth (ft.) :	0-5				
Soil Description :	Clayey Sand				

SAMPLE DESCRIPTION BEFORE SOAKING

Mold Number	A
Blows Per Layer	10
Wt of Wet Soil & Mold (gm)	11829
Weight of Mold (gm)	7852
Weight of Wet Soil (gm)	3977
Mold Volume (cu.ft)	0.0818
Container No.	
Wet Wt. Soil + Container (gm)	545.45
Dry Wt. Soil + Container (gm)	507.24
Wt. Container (gm)	329.21
Moisture Content (%)	21.46
Wet Density (pcf)	107.2
Dry Density (pcf)	88.2

SAMPLE PREPARATION

Wt of Hammer (Lbs)	10
No. of Layers	5
No. of Blows/Layer	10
Drop Height (inches)	18
Surcharge Weight (Lbs)	10
Max. Dry Density (pcf)	95.4
Molded Relative Comp (%)	92.5
Req'd % Moisture	21.5
No. of Trials	1
% Retained 3/4" Sieve	0.00%

DEFORMATION DURING SOAKING PERIOD

Sample Length (inch) 5

DATE	TIME	Mold No.:	A
		Dial Rdgs	Swell (in)
06/19/18	16:55	0.5690	
06/21/18	16:10	0.5630	
06/22/18	10:55	0.5550	-0.0140
Percent Swell/Collapse (+/-)			-0.28

AFTER SOAKING

Mold Number	A	
Wt. of Wet Soil + Mold (gm)	11926	
Weight of Mold (gm)	7852	
Weight of Wet Soil (gm)	4074	
Mold Volume (cu.ft)	0.0816	
Moisture Sample	Top	Bottom
Container No.		
Wet Wt. Soil + Container (gm)	519.15	507.85
Dry Wt. Soil + Container (gm)	448.66	431.12
Wt. Container (gm)	148.71	140.77
Mosture Content (%)	23.5	26.4
Average Moisture Content (%)	25.0	
Wet Density (pcf)	110.1	
After Test Dry Density (pcf)	88.1	

TEST LOAD DATA

Piston Diameter (inches): 1.954

Penetration	Mold No.:	A
(inch)	LOAD (lb)	Stress (psi)
0.000	0	0.00
0.025	19	6.34
0.050	45	15.01
0.075	76	25.34
0.100	108	36.02
0.125	145	48.35
0.150	188	62.69
0.175	235	78.37
0.200	281	93.71
0.225	332	110.71
0.250	379	126.39
0.275	427	142.39
0.300	474	158.07
0.325	521	173.74
0.350	568	189.41
0.375	614	204.75
0.400	659	219.76
0.425	705	235.10
0.450	750	250.10
0.475	791	263.78
0.500	829	276.45

TEST RESULTS

CBR @ .1": 7

CBR @ .2": 8

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CALIFORNIA BEARING RATIO (CBR) OF LABORATORY-COMPACTED SOIL

AASHTO T193

Project Name:	Reds Meadow - V1 CBR	Tested By :	JT	Date	06/20/18
Project No. :	100062	Input By:	JP	Date	06/26/18
Boring No.:	B-39	Checked By:	AP	Date	06/27/18
Sample No.:	1				
Depth (ft.) :	0-5				
Soil Description :	Clayey Sand				

SAMPLE DESCRIPTION BEFORE SOAKING

Mold Number	B
Blows Per Layer	20
Wt of Wet Soil & Mold (gm)	11979
Weight of Mold (gm)	7833
Weight of Wet Soil (gm)	4146
Mold Volume (cu.ft)	0.0818
Container No.	
Wet Wt. Soil + Container (gm)	545.45
Dry Wt. Soil + Container (gm)	507.24
Wt. Container (gm)	329.21
Moisture Content (%)	21.46
Wet Density (pcf)	111.7
Dry Density (pcf)	92.0

SAMPLE PREPARATION

Wt of Hammer (Lbs)	10
No. of Layers	5
No. of Blows/Layer	20
Drop Height (inches)	18
Surcharge Weight (Lbs)	10
Max. Dry Density (pcf)	95.4
Molded Relative Comp (%)	96.4
Req'd % Moisture	21.5
No. of Trials	1
% Retained 3/4" Sieve	0.00%

DEFORMATION DURING SOAKING PERIOD

Sample Length (inch) 5

DATE	TIME	Mold No.:	B
		Dial Rdgs	Swell (in)
06/19/18	16:55	0.5950	
06/21/18	16:10	0.5820	
06/22/18	10:55	0.5820	-0.0130
Percent Swell/Collapse (+/-)			-0.26

AFTER SOAKING

Mold Number	B	
Wt. of Wet Soil + Mold + Base Plate (gm)	12014	
Weight of Mold+ Base Plate (gm)	7833	
Weight of Wet Soil (gm)	4181	
Mold Volume (cu.ft)	0.0816	
Moisture Sample	Top	Bottom
Container No.		
Wet Wt. Soil + Container (gm)	560.75	445.09
Dry Wt. Soil + Container (gm)	481.91	386.10
Wt. Container (gm)	144.77	143.43
Mosture Content (%)	23.4	24.3
Average Moisture Content (%)	23.8	
Wet Density (pcf)	113.0	
After Test Dry Density (pcf)	91.2	

TEST LOAD DATA

Piston Diameter (inches): 1.954

Penetration	Mold No.:	B
(inch)	LOAD (lb)	Stress (psi)
0.000	0	0.00
0.025	18	6.00
0.050	41	13.67
0.078	73	24.34
0.100	109	36.35
0.125	153	51.02
0.150	209	69.70
0.175	273	91.04
0.200	340	113.38
0.225	410	136.72
0.250	483	161.07
0.275	553	184.41
0.300	621	207.09
0.325	687	229.10
0.350	759	253.11
0.375	828	276.12
0.400	897	299.13
0.425	964	321.47
0.450	1030	343.48
0.475	1097	365.82
0.500	1162	387.50

TEST RESULTS

CBR @ .1": 9

CBR @ .2": 12

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CALIFORNIA BEARING RATIO (CBR) OF LABORATORY-COMPACTED SOIL

AASHTO T193

Project Name:	Reds Meadow - V1 CBR	Tested By :	JT	Date	06/20/18
Project No. :	100062	Input By:	JP	Date	06/26/18
Boring No.:	B-39	Checked By:	AP	Date	06/27/18
Sample No.:	1				
Depth (ft.) :	0-5				
Soil Description :	Clayey Sand				

SAMPLE DESCRIPTION BEFORE SOAKING

Mold Number	C
Blows Per Layer	40
Wt of Wet Soil & Mold (gm)	12135
Weight of Mold (gm)	7836
Weight of Wet Soil (gm)	4299
Mold Volume (cu.ft)	0.0818
Container No.	
Wet Wt. Soil + Container (gm)	545.45
Dry Wt. Soil + Container (gm)	507.24
Wt. Container (gm)	329.21
Moisture Content (%)	21.46
Wet Density (pcf)	115.9
Dry Density (pcf)	95.4

SAMPLE PREPARATION

Wt of Hammer (Lbs)	10
No. of Layers	5
No. of Blows/Layer	40
Drop Height (inches)	18
Surcharge Weight (Lbs)	10
Max. Dry Density (pcf)	95.4
Molded Relative Comp (%)	100.0
Req'd % Moisture	21.5
No. of Trials	1
% Retained 3/4" Sieve	0.00%

DEFORMATION DURING SOAKING PERIOD

Sample Length (inch) 5

DATE	TIME	Mold No.:	C
		Dial Rdgs	Swell (in)
06/19/18	16:55	0.7050	
06/21/18	16:10	0.6930	
06/22/18	10:55	0.6920	-0.0130
Percent Swell/Collapse (+/-)			-0.26

AFTER SOAKING

Mold Number	C	
Wt. of Wet Soil + Mold + Base Plate (gm)	12164	
Weight of Mold+ Base Plate (gm)	7836	
Weight of Wet Soil (gm)	4328	
Mold Volume (cu.ft)	0.0816	
Moisture Sample	Top	Bottom
Container No.		
Wet Wt. Soil + Container (gm)	607.20	489.32
Dry Wt. Soil + Container (gm)	518.22	423.79
Wt. Container (gm)	150.50	148.73
Mosture Content (%)	24.2	23.8
Average Moisture Content (%)	24.0	
Wet Density (pcf)	116.9	
After Test Dry Density (pcf)	94.3	

TEST LOAD DATA

Piston Diameter (inches): 1.954

Penetration	Mold No.:	C
(inch)	LOAD (lb)	Stress (psi)
0.000	0	0.00
0.025	13	4.40
0.050	34	11.37
0.075	68	22.74
0.100	114	38.15
0.125	173	57.59
0.150	241	80.33
0.175	316	105.28
0.200	392	130.59
0.225	468	155.90
0.250	546	181.94
0.275	626	208.72
0.300	708	236.23
0.325	793	264.48
0.350	880	293.46
0.375	961	320.60
0.400	1047	349.21
0.425	1132	377.46
0.450	1219	406.44
0.475	1311	437.25
0.500	1406	468.80

TEST RESULTS

CBR @ .1": 11

CBR @ .2": 14

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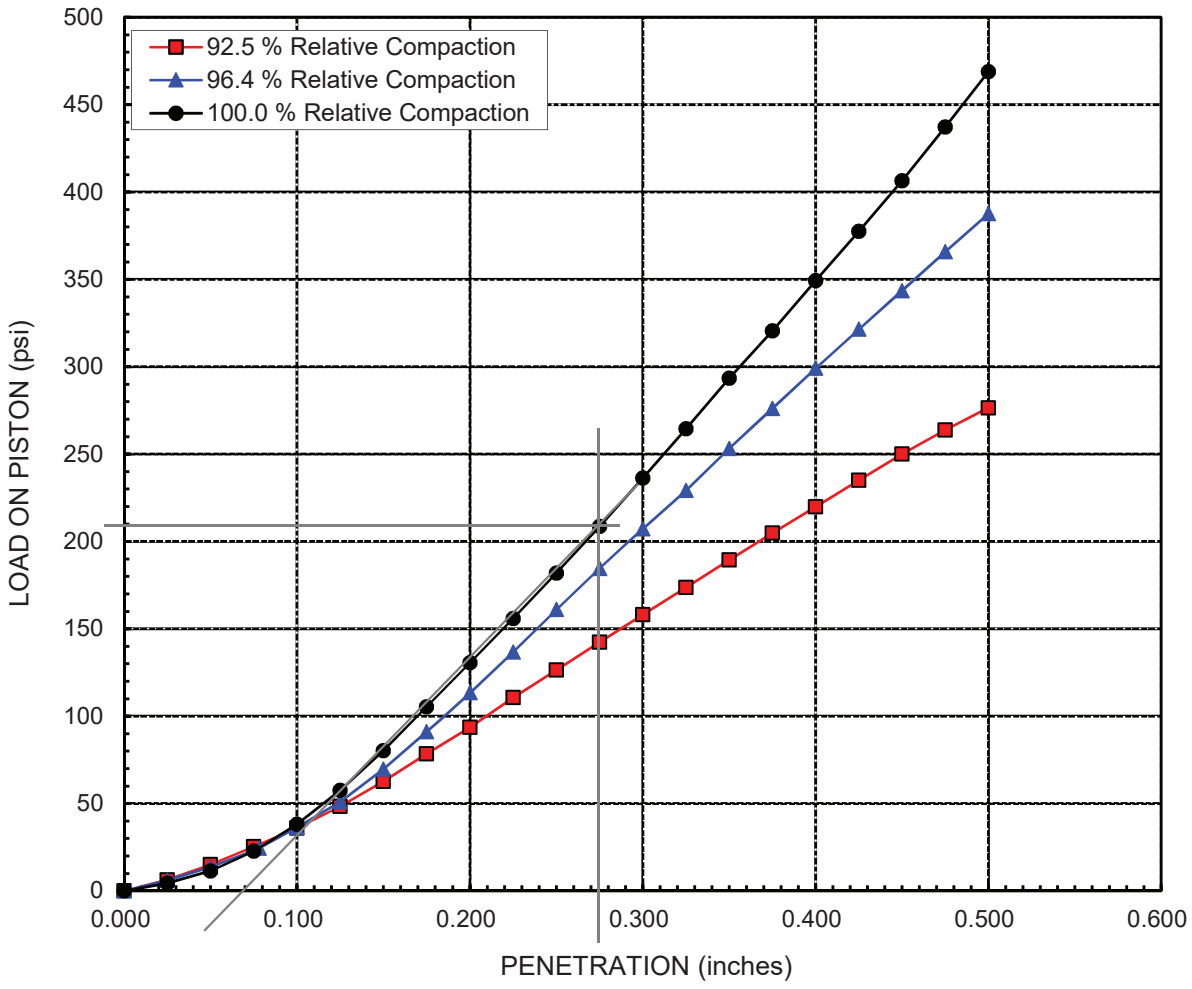
CALIFORNIA BEARING RATIO (CBR)
OF LABORATORY-COMPACTED SOIL
AASHTO T193

Project Name:	Reds Meadow - V1 CBR	Tested By :	JT	Date:	06/20/18
Project No. :	100062	Data Input By:	JP	Date:	06/26/18
Boring No.:	B-39	Checked By:	AP	Date:	06/27/18
Sample No.:	1				
Depth (ft.) :	0-5				
Soil Description :	Clayey Sand				



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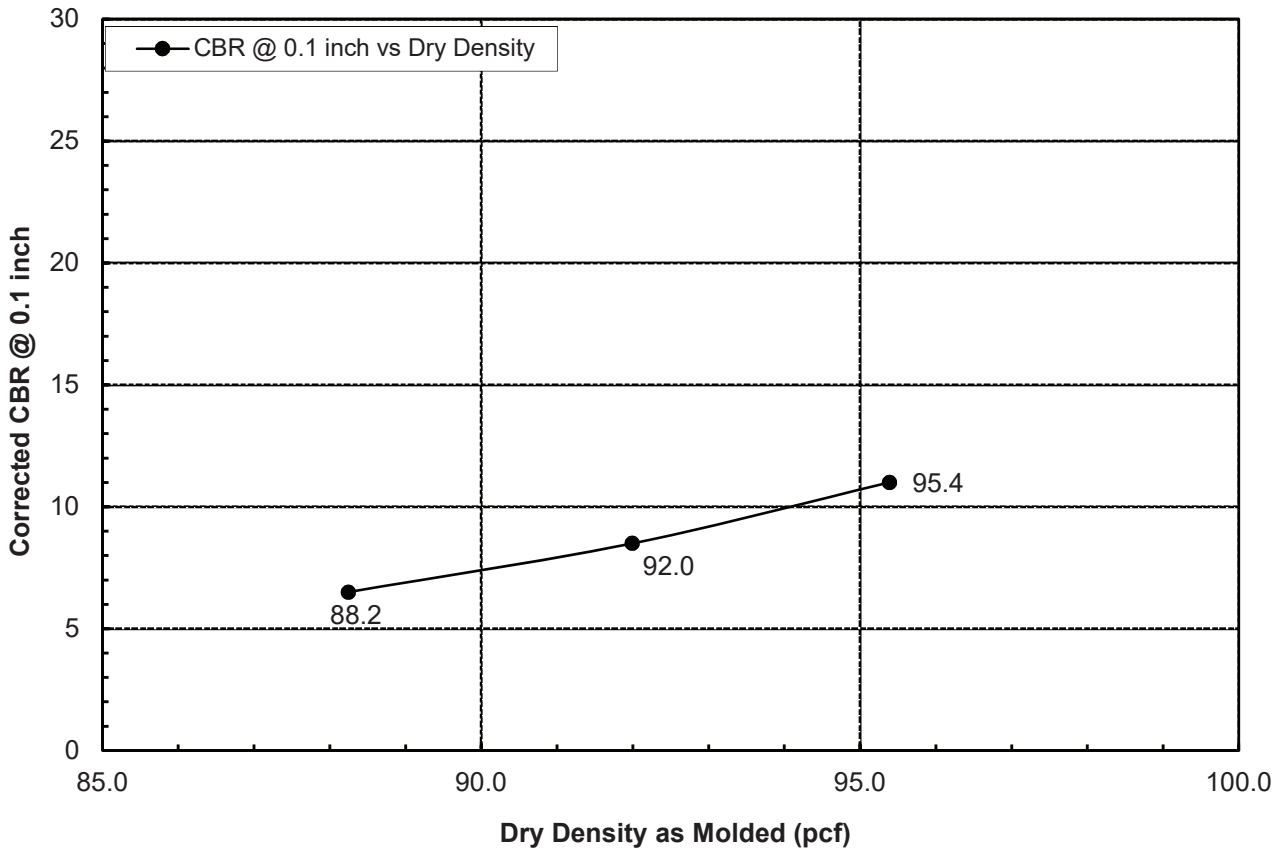
CALIFORNIA BEARING RATIO (CBR) OF LABORATORY-COMPACTED SOIL AASHTO T193

Project Name:	Reds Meadow - V1 CBR	Tested By :	JT	Date:	06/20/18
Project No. :	100062	Data Input By:	JP	Date:	06/26/18
Boring No.:	B-39	Checked By:	AP	Date:	06/27/18
Sample No.:	1				
Depth (ft.) :	0-5				
Soil Description :	Clayey Sand				

TEST RESULTS

Dry Density (pcf)	Maximum Dry Density by AASHTO T180 (pcf)	Relative Compaction (%)	Blow Per Layer	CBR @0.1"	CBR @0.2"
88.2	95.4	92.5	10	7	8
92.0	95.4	96.4	20	9	12
95.4	95.4	100.0	40	11	14



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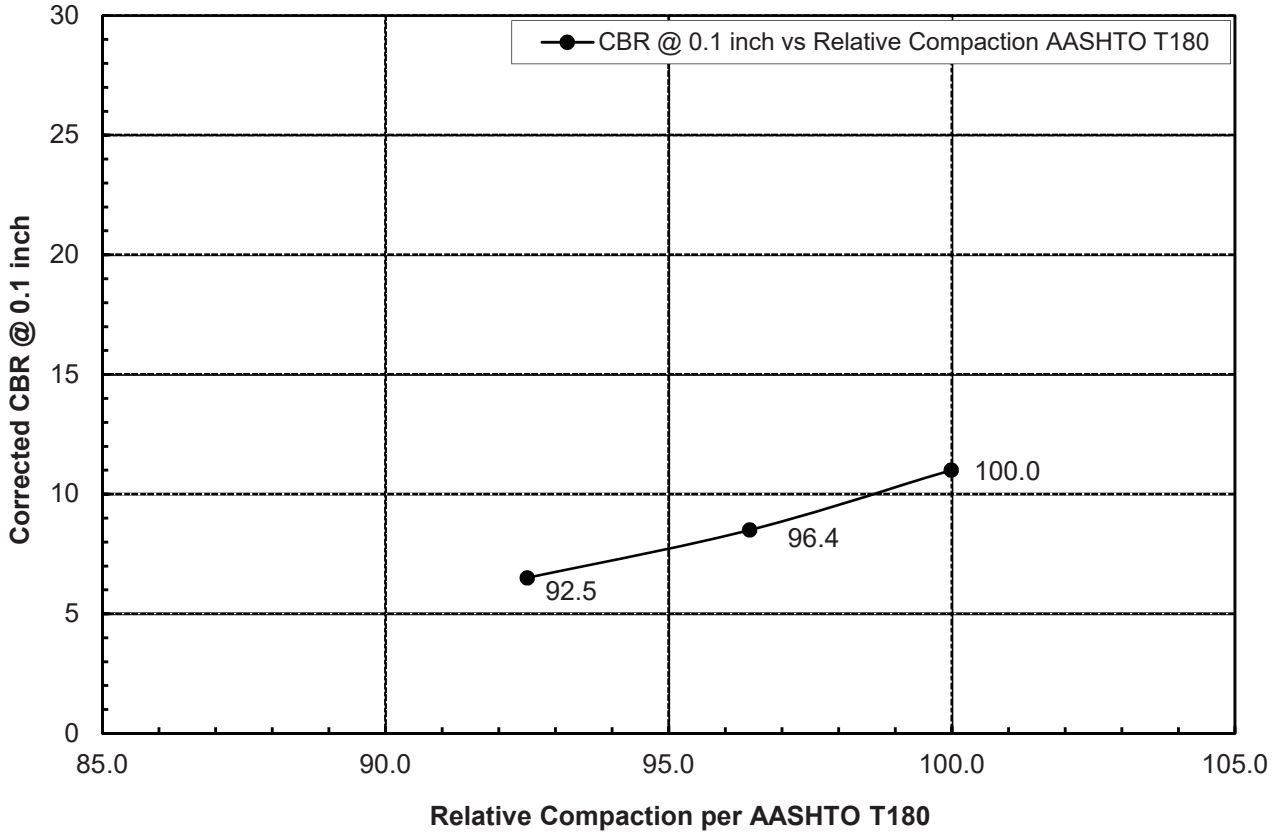
CALIFORNIA BEARING RATIO (CBR) OF LABORATORY-COMPACTED SOIL AASHTO T193

Project Name:	Reds Meadow - V1 CBR	Tested By :	JT	Date:	06/20/18
Project No. :	100062	Data Input By:	JP	Date:	06/26/18
Boring No.:	B-39	Checked By:	AP	Date:	06/27/18
Sample No.:	1				
Depth (ft.) :	0-5				
Soil Description :	Clayey Sand				

TEST RESULTS

Dry Density (pcf)	Maximum Dry Density by AASHTO T180 (pcf)	Relative Compaction (%)	Blow Per Layer	CBR @0.1"	CBR @0.2"
88.2	95.4	92.5	10	7	8
92.0	95.4	96.4	20	9	12
95.4	95.4	100.0	40	11	14



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CALIFORNIA BEARING RATIO (CBR) OF LABORATORY-COMPACTED SOIL

AASHTO T193

Project Name:	Reds Meadow Road	Tested By :	JT	Date	11/15/18
Project No. :	100062-002	Input By:	JP	Date	11/26/18
Boring No.:	B-46	Checked By:	AP	Date	11/26/18
Sample No.:	1				
Depth (ft.) :	0				
Soil Description :	Well-Graded Sand w/silt				

SAMPLE DESCRIPTION BEFORE SOAKING

Mold Number	A
Blows Per Layer	10
Wt of Wet Soil & Mold (gm)	12526
Weight of Mold (gm)	7850
Weight of Wet Soil (gm)	4676
Mold Volume (cu.ft)	0.0818
Container No.	
Wet Wt. Soil + Container (gm)	514.22
Dry Wt. Soil + Container (gm)	496.9
Wt. Container (gm)	328.99
Moisture Content (%)	10.32
Wet Density (pcf)	126.0
Dry Density (pcf)	114.2

SAMPLE PREPARATION

Wt of Hammer (Lbs)	10
No. of Layers	5
No. of Blows/Layer	10
Drop Height (inches)	18
Surcharge Weight (Lbs)	10
Max. Dry Density (pcf)	125.5
Molded Relative Comp (%)	91.0
Req'd % Moisture	10.0
No. of Trials	1
% Retained 3/4" Sieve	0.00%

DEFORMATION DURING SOAKING PERIOD

Sample Length (inch) 5

DATE	TIME	Mold No.:	A
		Dial Rdgs	Swell (in)
11/15/18	17:25	0.5780	
11/16/18	16:00	0.5700	
11/19/18	15:50	0.5700	-0.0080
Percent Swell/Collapse (+/-)			-0.16

AFTER SOAKING

Mold Number	A	
Wt. of Wet Soil + Mold (gm)	12606	
Weight of Mold (gm)	7850	
Weight of Wet Soil (gm)	4756	
Mold Volume (cu.ft)	0.0817	
Moisture Sample	Top	Bottom
Container No.		
Wet Wt. Soil + Container (gm)	584.90	856.59
Dry Wt. Soil + Container (gm)	543.95	781.08
Wt. Container (gm)	138.45	137.68
Mosture Content (%)	10.1	11.7
Average Moisture Content (%)	10.9	
Wet Density (pcf)	128.4	
After Test Dry Density (pcf)	115.7	

TEST LOAD DATA

Piston Diameter (inches): 1.954

Penetration	Mold No.:	A
(inch)	LOAD (lb)	Stress (psi)
0.000	0	0.00
0.025	67	22.34
0.050	160	53.36
0.075	255	85.04
0.100	348	116.05
0.125	442	147.40
0.150	538	179.41
0.175	630	210.09
0.200	716	238.77
0.225	801	267.11
0.250	881	293.79
0.275	962	320.80
0.300	1043	347.81
0.325	1127	375.82
0.350	1201	400.50
0.375	1269	423.18
0.400	1342	447.52
0.425	1415	471.86
0.450	1493	497.88
0.475	1575	525.22
0.500	1655	551.90

TEST RESULTS

CBR @ .1": 12

CBR @ .2": 16

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CALIFORNIA BEARING RATIO (CBR) OF LABORATORY-COMPACTED SOIL

AASHTO T193

Project Name:	Reds Meadow Road	Tested By :	JT	Date	11/15/18
Project No. :	100062-002	Input By:	JP	Date	11/26/18
Boring No.:	B-46	Checked By:	AP	Date	11/26/18
Sample No.:	1				
Depth (ft.) :	0				
Soil Description :	Well-Graded Sand w/silt				

SAMPLE DESCRIPTION BEFORE SOAKING

Mold Number	C
Blows Per Layer	25
Wt of Wet Soil & Mold (gm)	12715
Weight of Mold (gm)	7830
Weight of Wet Soil (gm)	4885
Mold Volume (cu.ft)	0.0818
Container No.	
Wet Wt. Soil + Container (gm)	514.22
Dry Wt. Soil + Container (gm)	496.9
Wt. Container (gm)	328.99
Moisture Content (%)	10.32
Wet Density (pcf)	131.7
Dry Density (pcf)	119.3

SAMPLE PREPARATION

Wt of Hammer (Lbs)	10
No. of Layers	5
No. of Blows/Layer	25
Drop Height (inches)	18
Surcharge Weight (Lbs)	10
Max. Dry Density (pcf)	125.5
Molded Relative Comp (%)	95.1
Req'd % Moisture	10.0
No. of Trials	1
% Retained 3/4" Sieve	0.00%

DEFORMATION DURING SOAKING PERIOD

Sample Length (inch) 5

DATE	TIME	Mold No.:	C
		Dial Rdgs	Swell (in)
11/15/18	17:25	0.6020	
11/16/18	16:00	0.5950	
11/19/18	15:50	0.5940	-0.0080
Percent Swell/Collapse (+/-)			-0.16

AFTER SOAKING

Mold Number	C	
Wt. of Wet Soil + Mold + Base Plate (gm)	12746	
Weight of Mold+ Base Plate (gm)	7830	
Weight of Wet Soil (gm)	4916	
Mold Volume (cu.ft)	0.0817	
Moisture Sample	Top	Bottom
Container No.		
Wet Wt. Soil + Container (gm)	701.37	675.45
Dry Wt. Soil + Container (gm)	655.85	620.94
Wt. Container (gm)	142.75	149.35
Mosture Content (%)	8.9	11.6
Average Moisture Content (%)	10.2	
Wet Density (pcf)	132.7	
After Test Dry Density (pcf)	120.4	

TEST LOAD DATA

Piston Diameter (inches): 1.954

Penetration	Mold No.:	C
(inch)	LOAD (lb)	Stress (psi)
0.000	0	0.00
0.025	80	26.68
0.050	231	77.03
0.078	432	144.06
0.100	649	216.42
0.125	901	300.46
0.150	1166	388.83
0.175	1438	479.53
0.200	1710	570.24
0.225	1980	660.28
0.250	2233	744.65
0.275	2478	826.35
0.300	2728	909.72
0.325	2959	986.75
0.350	3154	1051.77
0.375	3365	1122.14
0.400	3573	1191.50
0.425	3796	1265.86
0.450	3998	1333.23
0.475	4234	1411.93
0.500	4454	1485.29

TEST RESULTS

CBR @ .1": 35

CBR @ .2": 47

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Depth (ft.) :	0				
Soil Description :	Well-Graded Sand w/silt				

SAMPLE DESCRIPTION BEFORE SOAKING

Mold Number	B
Blows Per Layer	56
Wt of Wet Soil & Mold (gm)	12918
Weight of Mold (gm)	7829
Weight of Wet Soil (gm)	5089
Mold Volume (cu.ft)	0.0818
Container No.	
Wet Wt. Soil + Container (gm)	514.22
Dry Wt. Soil + Container (gm)	496.9
Wt. Container (gm)	328.99
Moisture Content (%)	10.32
Wet Density (pcf)	137.2
Dry Density (pcf)	124.3

SAMPLE PREPARATION

Wt of Hammer (Lbs)	10
No. of Layers	5
No. of Blows/Layer	56
Drop Height (inches)	18
Surcharge Weight (Lbs)	10
Max. Dry Density (pcf)	125.5
Molded Relative Comp (%)	99.1
Req'd % Moisture	10.0
No. of Trials	1
% Retained 3/4" Sieve	0.00%

DEFORMATION DURING SOAKING PERIOD

Sample Length (inch) 5

DATE	TIME	Mold No.:	B
		Dial Rdgs	Swell (in)
11/15/18	17:25	0.6460	
11/16/18	16:00	0.6390	
11/19/18	15:50	0.6390	-0.0070
Percent Swell/Collapse (+/-)			-0.14

AFTER SOAKING

Mold Number	B	
Wt. of Wet Soil + Mold + Base Plate (gm)	12934	
Weight of Mold+ Base Plate (gm)	7829	
Weight of Wet Soil (gm)	5105	
Mold Volume (cu.ft)	0.0817	
Moisture Sample	Top	Bottom
Container No.		
Wet Wt. Soil + Container (gm)	626.59	741.91
Dry Wt. Soil + Container (gm)	582.19	689.51
Wt. Container (gm)	147.05	148.16
Mosture Content (%)	10.2	9.7
Average Moisture Content (%)	9.9	
Wet Density (pcf)	137.8	
After Test Dry Density (pcf)	125.3	

TEST LOAD DATA

Piston Diameter (inches): 1.954

Penetration	Mold No.:	B
(inch)	LOAD (lb)	Stress (psi)
0.000	0	0.00
0.025	52	17.24
0.050	138	45.85
0.075	275	91.71
0.100	475	158.47
0.125	736	245.40
0.150	1059	353.25
0.175	1462	487.50
0.200	1851	617.36
0.225	2275	758.58
0.250	2737	912.65
0.275	3183	1061.58
0.300	3608	1203.17
0.325	4048	1349.90
0.350	4474	1491.86
0.375	4871	1624.28
0.400	5253	1751.57
0.425	5614	1872.25
0.450	5951	1984.50
0.475	6325	2109.22
0.500	6709	2237.24

TEST RESULTS

CBR @ .1":	**62**
CBR @ .2":	**93**

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AASHTO T193

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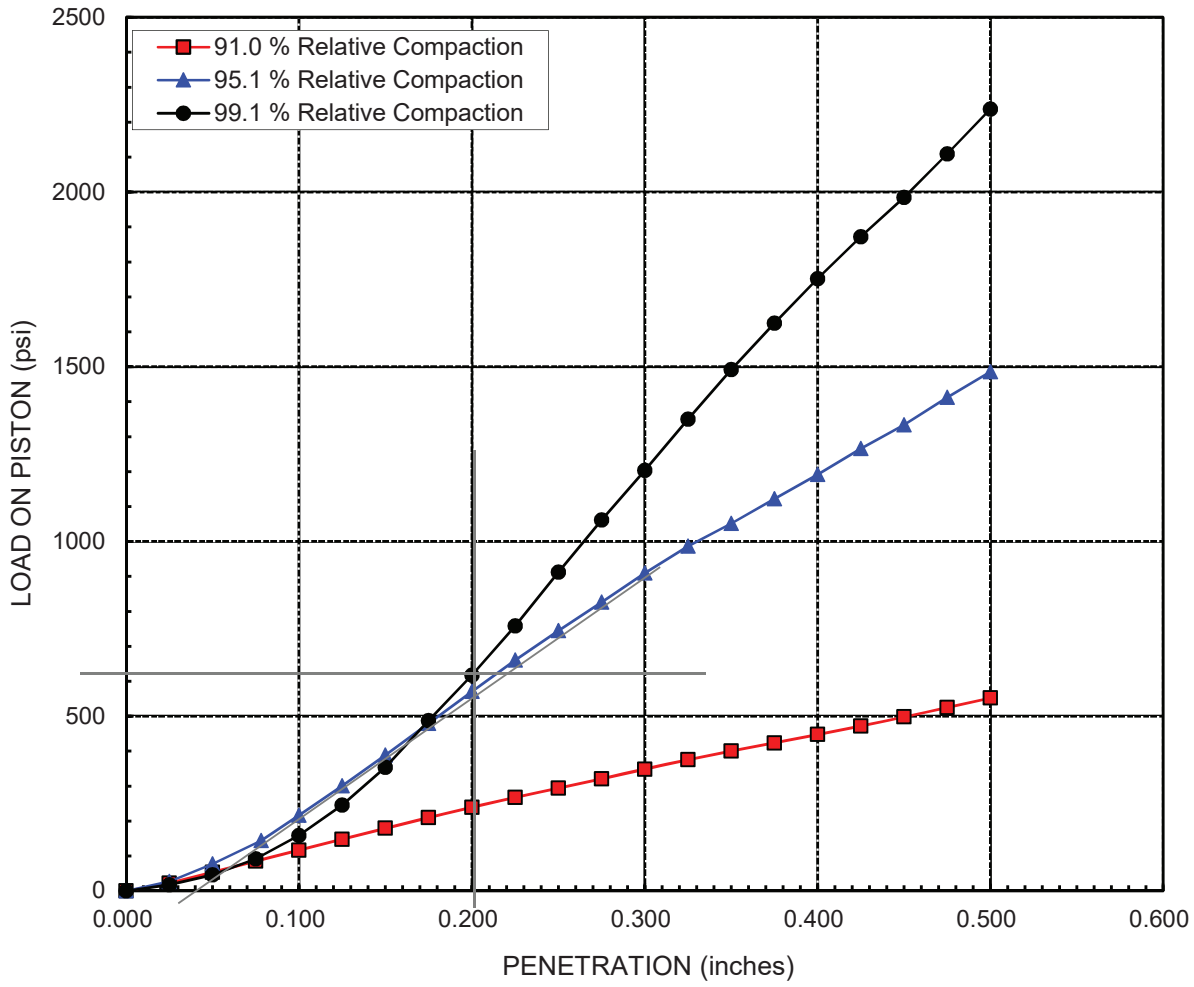

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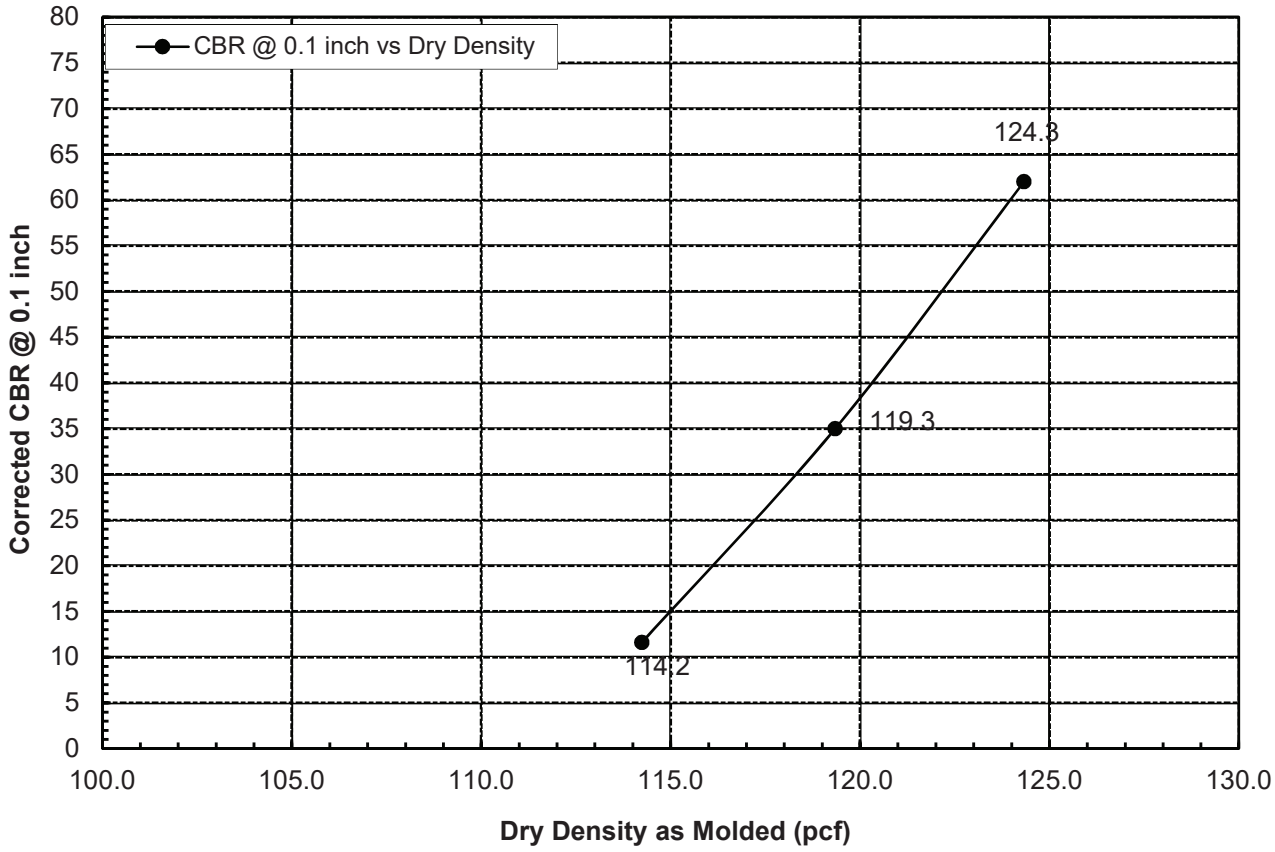
CALIFORNIA BEARING RATIO (CBR) OF LABORATORY-COMPACTED SOIL AASHTO T193

Project Name:	Reds Meadow Road	Tested By :	JT	Date:	11/15/18
Project No. :	100062-002	Data Input By:	JP	Date:	11/26/18
Boring No.:	B-46	Checked By:	AP	Date:	11/26/18
Sample No.:	1				
Depth (ft.) :	0				
Soil Description :	Well-Graded Sand w/silt				

TEST RESULTS

Dry Density (pcf)	Maximum Dry Density by AASHTO T180 (pcf)	Relative Compaction (%)	Blow Per Layer	CBR @0.1"	CBR @0.2"
114.2	125.5	91.0	10	12	16
119.3	125.5	95.1	25	35	47
124.3	125.5	99.1	56	62	93



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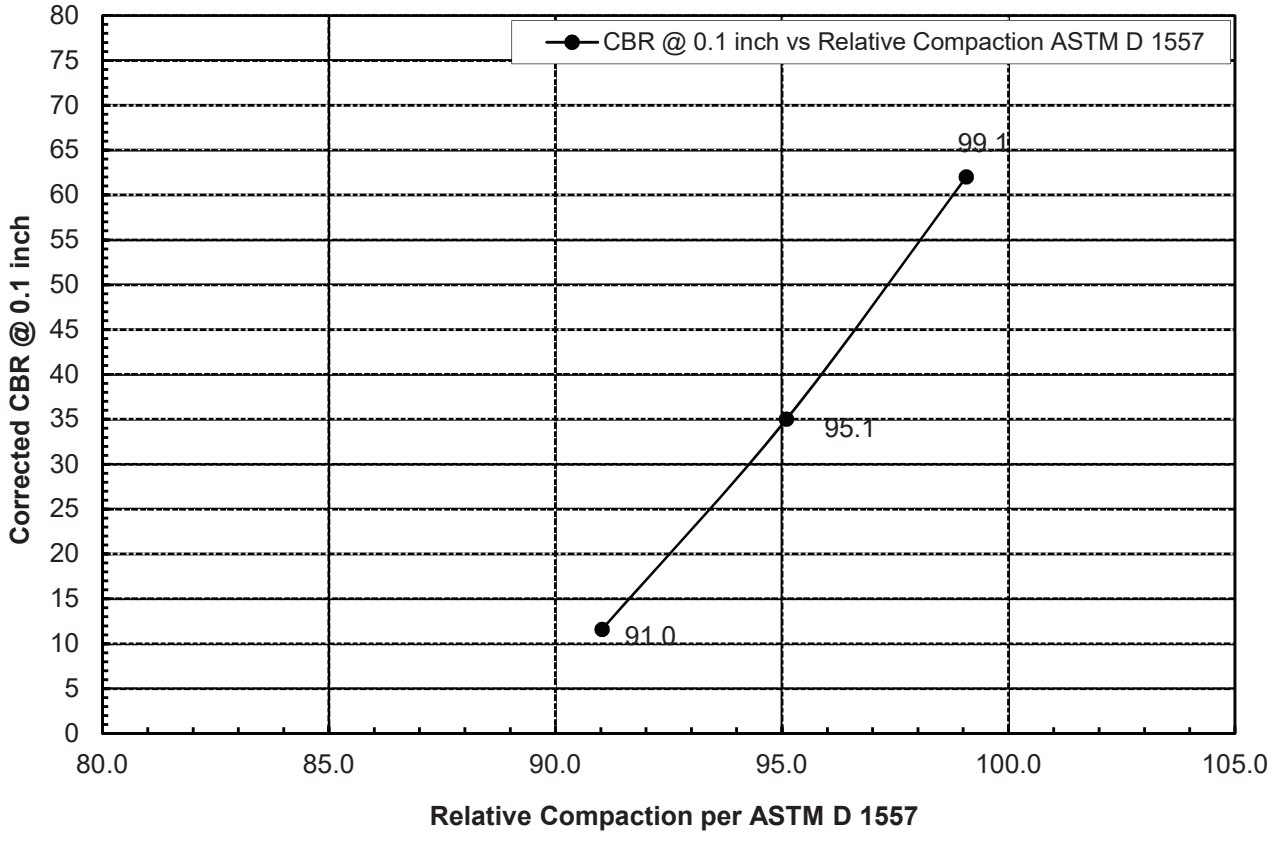
CALIFORNIA BEARING RATIO (CBR) OF LABORATORY-COMPACTED SOIL AASHTO T193

Project Name:	Reds Meadow Road	Tested By :	JT	Date:	11/15/18
Project No. :	100062-002	Data Input By:	JP	Date:	11/26/18
Boring No.:	B-46	Checked By:	AP	Date:	11/26/18
Sample No.:	1				
Depth (ft.) :	0				
Soil Description :	Well-Graded Sand w/silt				

TEST RESULTS

Dry Density (pcf)	Maximum Dry Density by AASHTO T180 (pcf)	Relative Compaction (%)	Blow Per Layer	CBR @0.1"	CBR @0.2"
114.2	125.5	91.0	10	12	16
119.3	125.5	95.1	25	35	47
124.3	125.5	99.1	56	62	93



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MOISTURE AND DENSITY TEST RESULTS

Client: Shannon & Wilson
Project Name: Reds Meadow - G2 Borings
Project No.: 100062

AP Lab No.: 18-0637
Date: 06/18/18

Boring No.	Sample No.	Sample Depth (ft.)	Moisture Content (%)	Dry Density (pcf)
B-3	1	5-6.5	10.2	NA
B-5	2	5-6.5	11.5	NA
B-6	3	10-11.5	8.9	NA
B-7	1	2-5.0	20.8	NA
B-9	2	10-11.5	11.8	NA
B-10	3	10-11.5	91.8*	NA
B-11	2	10-11.5	12.6	NA
B-12	3	10-11.5	11.2	NA
B-13	1	5-6.5	21.7	NA
B-13	2	10-11.5	16.9	NA
B-17	2	5-6.5	9.9	NA
B-17	3	6.5-8.5	8.7	NA
B-18	2	5-6.5	21.6	NA
B-19	1	5-6.5	17.0	NA
B-19	2	10-11.5	17.9	NA

Note: Sample contains pieces of white porous material

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MOISTURE AND DENSITY TEST RESULTS

Client: Shannon & Wilson
Project Name: Reds Meadow - V1 Borings
Project No.: 100062

AP Lab No.: 18-0637
Date: 06/18/18

Boring No.	Sample No.	Sample Depth (ft.)	Moisture Content (%)	Dry Density (pcf)
B-22	2	5-6.5	22.2	NA
B-24	2	4-5.0	28.6	NA
B-24	3	5-6.5	25.1	NA
B-26	2	5-6.5	11.6	NA
B-28	2	5-6.5	12.6	NA
B-29	2	1-2.0	13.6	NA
B-33	1	5-6.5	30.8	NA
B-34	2	5-6.5	3.7	NA
B-36	1	5-6.5	19.4	NA
B-38	1	5-6.5	52.5	NA
B-39	2	5-6.5	15.8	NA
B-41	1A	5-5.75	108.4*	NA
B-41	1B	5.75-6.5	278.2*	NA
B-43	2	5-6.5	11.5	NA

Note: Sample contains organic material

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MOISTURE AND DENSITY TEST RESULTS

Client: Shannon & Wilson
Project Name: Reds Meadow Road
Project No.: 100062-002

AP Lab No.: 18-1117
Date: 11/13/18

Boring No.	Sample No.	Sample Depth (ft.)	Moisture Content (%)	Dry Density (pcf)
B-44	2	5	12.9	NA
B-45	2	5	20.6	NA
B-46	2	5	10.7	NA
B-46	8	20	12.6	NA
B-46	10	25	19.0	NA
B-47	2	2.5	10.5	NA
B-47	3	5	3.1	NA
B-47	4	7.5	3.0	NA
B-48	3	5	9.5	NA
B-48	4	7.5	3.3	NA
B-49	3	5	9.0	NA
B-49	4	7.5	10.6	NA
B-49	5	10	36.1	NA
B-49	6	12.5	31.5	NA
B-49	7	15	27.1	NA
B-50	3	5	74.2*	NA
B-50	5	10	6.7	NA
B-51	2	2.5	14.1	NA

Note: Sample contained lightweight and porous particles