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December 19, 2017 PL-02667-01

Recycled Aggregate Materials Company
3713 Alamo Street
Simi Valley, California 93063

Attention: Mr. Dallas Jones

Subject: **Laboratory Test Results**
Caltrans Section 26 Class 2 Aggregate Base
Recycled Aggregate Materials Company
9005 Bradley Avenue
Sun Valley, California

This report presents the results of laboratory tests performed on one (1) sample of Caltrans Section 26 Class 2 Aggregate Base from the above referenced project. The sample was delivered to our laboratory on November 8, 2017. Per your request the following tests were performed;

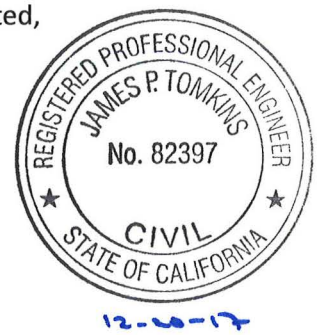
A) Sieve Analysis (Caltest 202)
B) Sand Equivalent (Caltest 217)
C) Durability Index (Caltest 229)
D) Resistance/R-Value (Caltest 301)
E) Los Angeles Abrasion (ASTM C-131)
F) Maximum Density – Optimum Moisture (ASTM D-1557)

The laboratory test results are attached. We trust this report meets your current needs. If you have any questions please contact us.

The Material Tested ☒ **met** ☐ did not meet the requirements of Caltrans Standard Specifications, 2015 edition Section 26-1.02B Class 2, ¾ inch Maximum Aggregate Base.

Respectfully submitted,

Earth Systems
Southern California



Jim Tomkins
Project Engineer
P. E. #82397

12-19-17

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Summary of Laboratory Test Results
Caltrans Standard Specifications
Section 26 Class 2 Aggregate Base
Recycled Aggregate Materials Company - Sun Valley, California
Delivered on November 8, 2017

A) **Sieve Analysis** (ASTM C-136)

Sieve Size		Percent Passing	Caltrans Section 26 Class II Aggregate Base (3/4" Maximum)
1"	(25.0 mm)	100	
3/4"	(19.0 mm)	92	85-100
1/2"	(12.5 mm)	74	
3/8"	(9.5 mm)	63	55-75
#4	(4.75 mm)	40	35-60
#8	(2.36 mm)	26	
#16	(1.18 mm)	18	
#30	(0.6 mm)	11	10-30
#50	(0.3 mm)	6	
#100	(0.15 mm)	4	
#200	(0.075 mm)	2.2	2-9

B) **Sand Equivalent** (Caltest 217)

Sand Equivalent = 65 25 Min.

C) **Durability Index** (Caltest 229)

D_f = 66
D_c = 60

C) **Resistance/R-Value** (Caltest 301)

R-Value = 78 78 Min.

D) **Los Angeles Abrasion** (ASTM C-131)

Revolutions	% Loss
100	12.0
500	38.4

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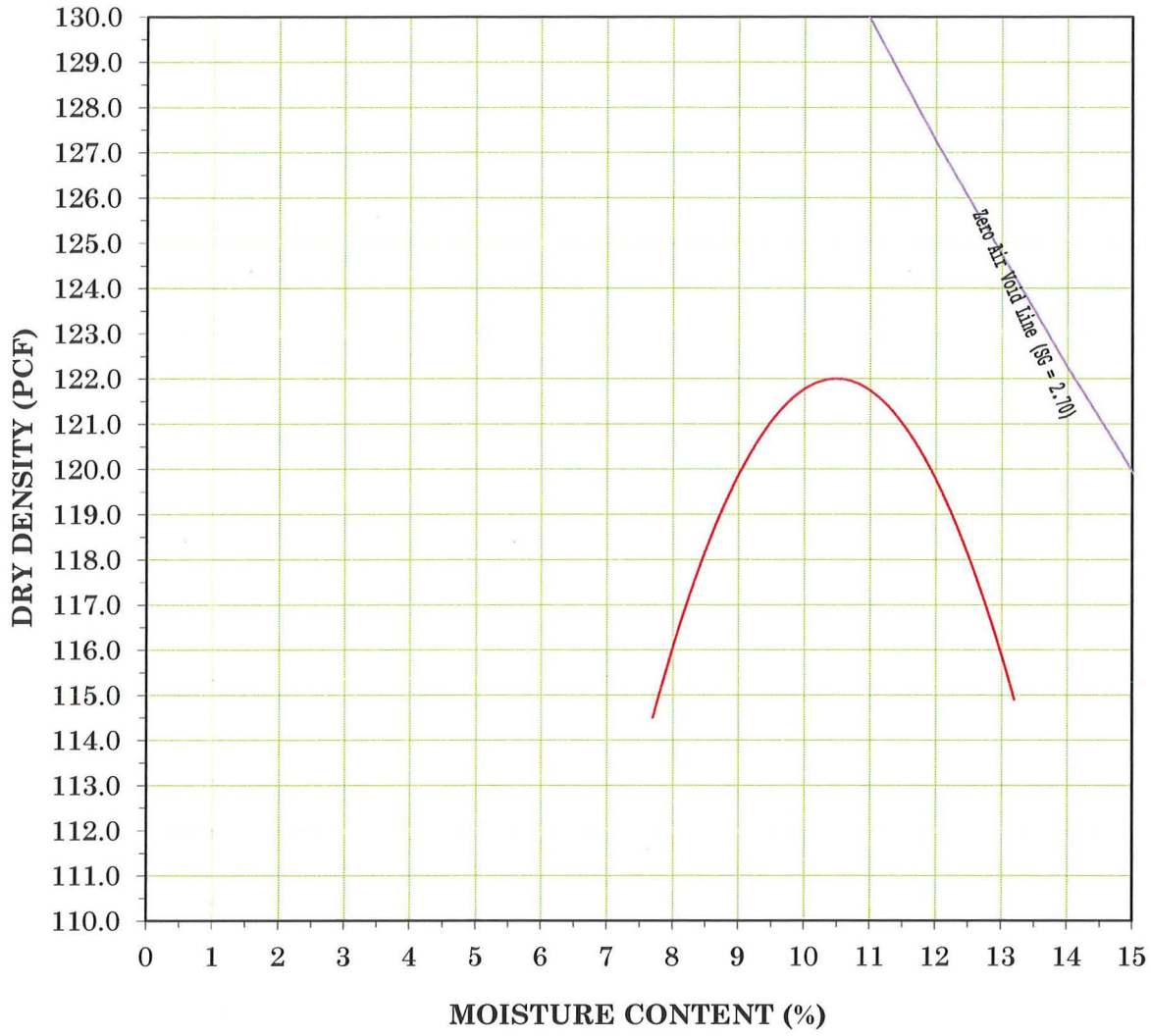
E) **Maximum Density – Optimum Moisture** (ASTM D-1557)

Sample Description	Maximum Density	Optimum Moisture
Class II Aggregate Base*	122.0 PCF	10.5 %

*Note: This product contains crushed recycled asphalt concrete. A bias is required for all nuclear density tests to adjust the tested dry density results to reflect actual in-place densities.



Maximum Density - Optimum Moisture Characteristics*

Sample Location: Sample Delivered on November 8, 2017

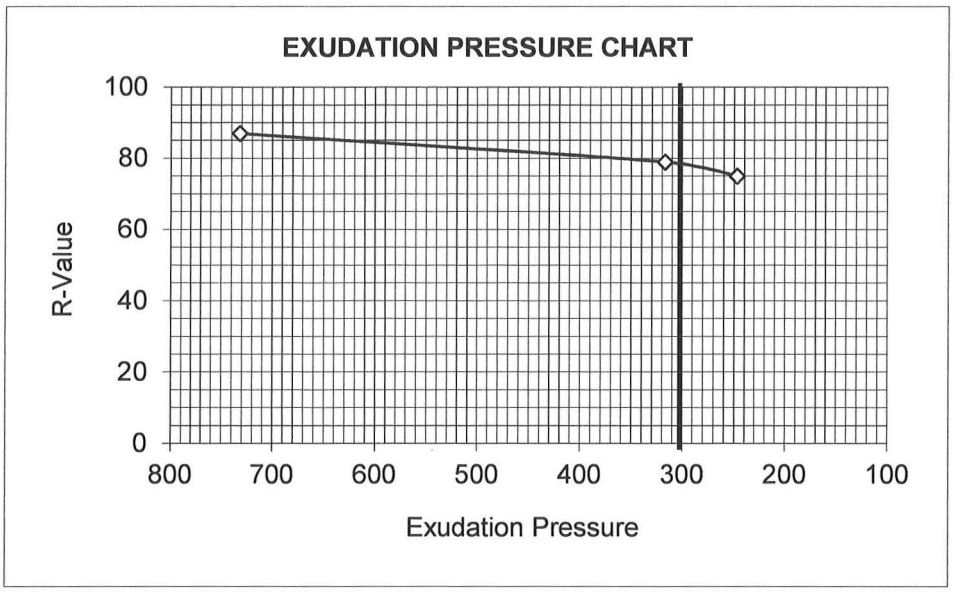
Material: Caltrans Class 2 Aggregate Base

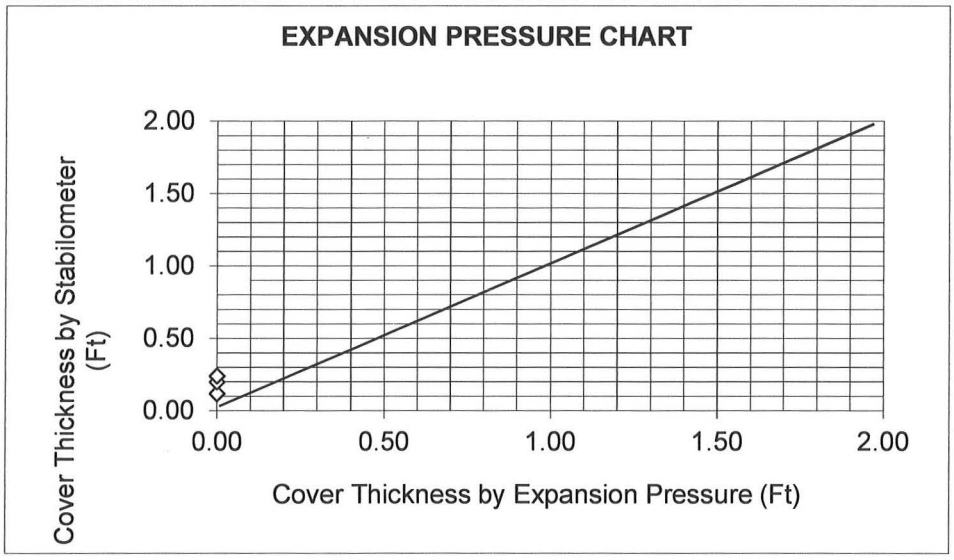
Maximum Density (pcf): 122.0

Optimum Moisture: 10.5%

* Test Method: ASTM D-1557

MAXIMUM DENSITY - OPTIMUM MOISTURE	
RAMCO - Sun Valley Sun Valley, California	
Earth Systems Southern California	
12/19/2017	PL-02667-01





JOB NAME: RAMCO - Sun Valley
SAMPLE I. D.: Sample Delivered on November 8, 2017
SOIL DESCRIPTION: Caltrans Class 2 Aggregate Base

SPECIMEN NUMBER	A	B	C
EXUDATION PRESSURE	732	317	247
RESISTANCE VALUE	87	79	75
EXPANSION DIAL(0.0001")	0	0	0
EXPANSION PRESSURE (PSF)	0.0	0.0	0.0
% MOISTURE AT TEST	12.6	13.2	13.4
DRY DENSITY AT TEST	114.2	108.0	107.6

R-VALUE @ 300 PSI EXUDATION	**78**
R-VALUE by Expansion Pressure*	**100**

**Based on a Traffic Index of 5.0 and a Gravel Factor of 1.70*