



December 14, 2017

PL-02667-02

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

Attention: Mr. Dallas Jones

Subject: **Laboratory Test Results**  
Recycled Concrete Aggregate Base  
Recycled Aggregate Materials Company  
250 East Santa Ana Avenue  
Rialto, California

This report presents the results of laboratory tests performed on one (1) sample of Recycled Concrete 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



12-15-17

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**Summary of Laboratory Test Results**  
**Recycled Concrete Aggregate Base**  
**Recycled Aggregate Materials Company - Rialto, California**  
**Delivered on November 8, 2017**

A) **Sieve Analysis** (Caltest 202)

| <u>Sieve Size</u> |            | <u>Percent Passing</u> | Caltrans Section 26<br>Class II Aggregate Base<br><u>(3/4" Maximum)</u> |
|-------------------|------------|------------------------|---|
| 1"                | (25.0 mm)  | 100                    | 100   |
| 3/4"              | (19.0 mm)  | 93                     | 90-100  |
| 1/2"              | (12.5 mm)  | 73                     |   |
| 3/8"              | (9.5 mm)   | 62                     |   |
| #4                | (4.75 mm)  | 43                     | 35-60   |
| #8                | (2.36 mm)  | 33                     |   |
| #16               | (1.18 mm)  | 25                     |   |
| #30               | (0.6 mm)   | 19                     | 10-30   |
| #50               | (0.3 mm)   | 13                     |   |
| #100              | (0.15 mm)  | 9                      |   |
| #200              | (0.075 mm) | 5.5                    | 2-9   |

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

Sand Equivalent = 60 25 Min.

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

D<sub>f</sub> = 51 35 Min.  
D<sub>c</sub> = 62 35 Min.

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

R-Value = 78 78 Min.

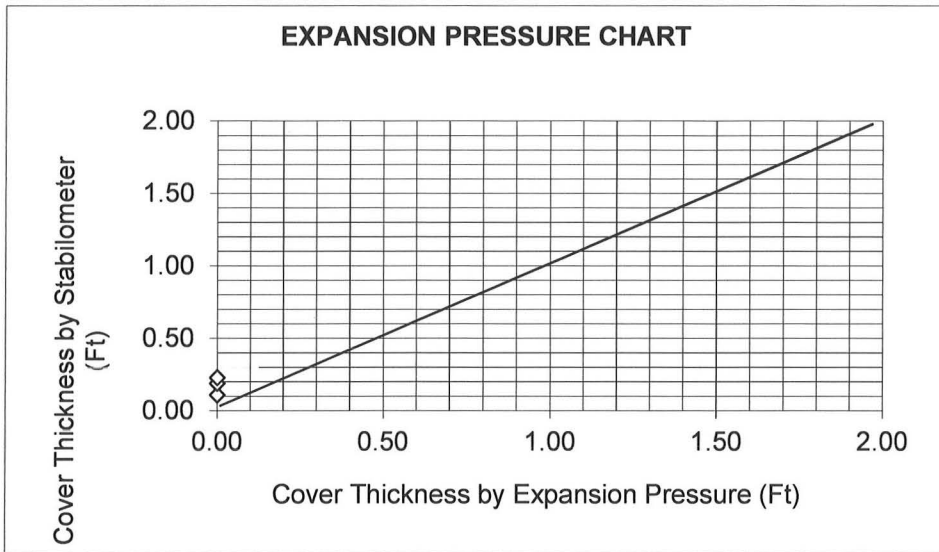
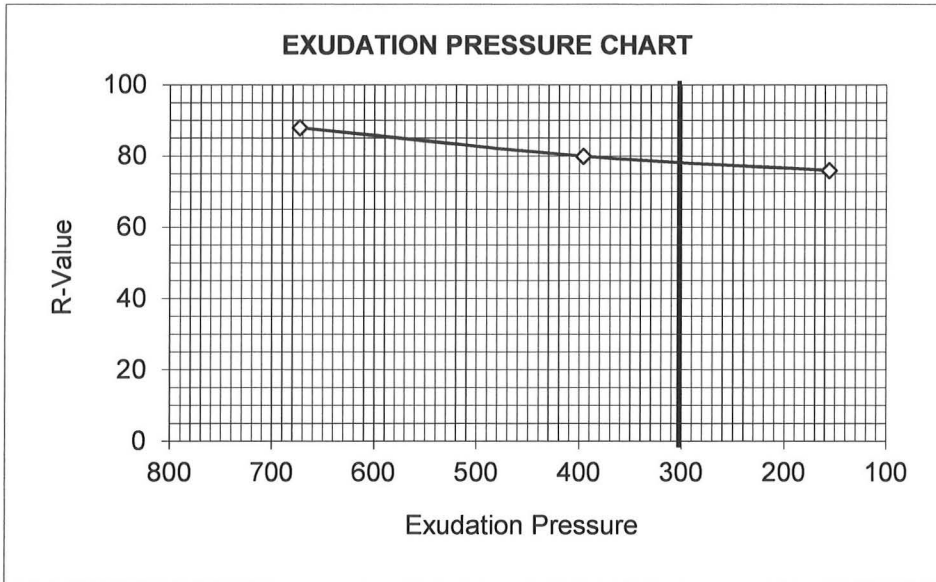
E) **Los Angeles Abrasion** (ASTM C-131)

| <u>Revolutions</u> | <u>% Loss</u> |
|--------------------|---------------|
| 100                | 10.1          |
| 500                | 34.4          |

**Summary of Laboratory Test Results**  
**Recycled Concrete Aggregate Base**  
**Recycled Aggregate Materials Company - Rialto, California**  
**Delivered on November 8, 2017**

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

| <u>Sample Description</u>           | <u>Maximum Density</u> | <u>Optimum Moisture</u> |
|-------------------------------------|------------------------|-------------------------|
| Recycled Concrete<br>Aggregate Base | 119.0 PCF              | 13.6 %                  |

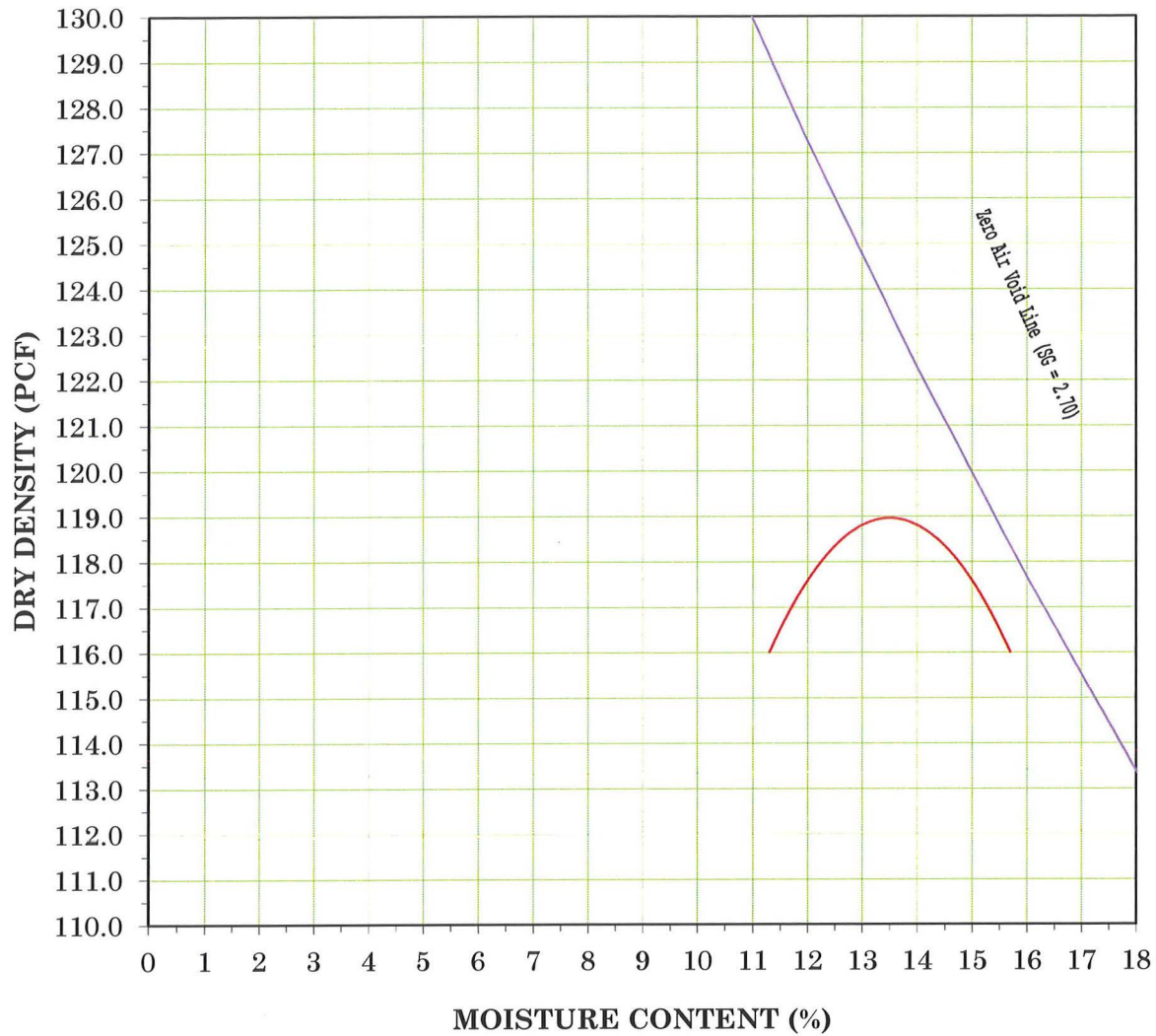


**JOB NAME:** RAMCO - Rialto  
**SAMPLE I. D.:** Sample Delivered on November 8, 2017  
**SOIL DESCRIPTION:** Recycled Concrete Aggregate Base

| SPECIMEN NUMBER          | A     | B     | C     |
|--------------------------|-------|-------|-------|
| EXUDATION PRESSURE       | 673   | 396   | 156   |
| RESISTANCE VALUE         | 88    | 80    | 76    |
| EXPANSION DIAL(0.0001")  | 0     | 0     | 0     |
| EXPANSION PRESSURE (PSF) | 0.0   | 0.0   | 0.0   |
| % MOISTURE AT TEST       | 14.8  | 15.2  | 15.6  |
| DRY DENSITY AT TEST      | 113.9 | 110.6 | 112.3 |

|                                       |            |
|---------------------------------------|------------|
| <b>R-VALUE @ 300 PSI EXUDATION</b>    | <b>78</b>  |
| <b>R-VALUE by Expansion Pressure*</b> | <b>100</b> |

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




**Maximum Density - Optimum Moisture Characteristics\***

Sample Location: Sample Delivered on November 8, 2017

Material: Recycled Concrete Aggregate Base

Maximum Density (pcf): 119.0

Optimum Moisture: 13.6%

| MAXIMUM DENSITY - OPTIMUM MOISTURE   |             |
|--|-------------|
| <b>RAMCO - Rialto</b>  |             |
| <b>Rialto, California</b>  |             |
|  <b>Earth Systems</b><br><b>Southern California</b> |             |
| 12/14/2017   | PL-02667-02 |

\* Test Method: ASTM D-1557