



300 Sierra Manor Drive, Suite 1  
Reno, NV 89511

March 29, 2024  
File: 1009

Mr. Chris Benna  
**RILITE AGGREGATES**  
3025 Mill Street  
Reno, NV 89502

**RE: Rilite Pit – Structural Fill**

Dear Mr. Benna:

Per your request, we have performed testing on the Structural Fill sample you delivered to our laboratory. Test results are provided on the attached page(s) in comparison with the 2016 Standard Specifications for Public Works Construction (SSPWC) - "Orange Book", current ASTM specification requirements.

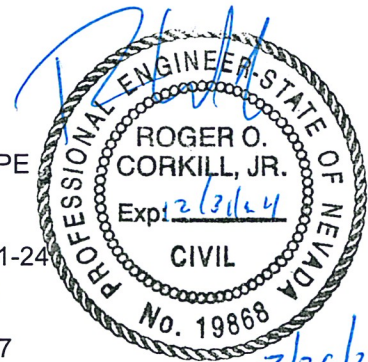
We appreciate this opportunity to provide our laboratory testing services. If you have any questions or require further information, please do not hesitate to contact us.

Sincerely,

**CONSTRUCTION MATERIALS ENGINEERS, INC.**

Spencer Schweitzer  
Laboratory Manager  
[sschweitzer@cmenv.com](mailto:sschweitzer@cmenv.com)  
Direct: 775-851-8205  
Mobile: 208-559-7665

Roger O. Corkill Jr., PE  
Project Manager  
RE Number 19868  
Expiration Date 12-31-24  
[rcorkill@cmenv.com](mailto:rcorkill@cmenv.com)  
Direct: 775-737-7581  
Mobile: 775-722-5067



3/29/24

ROC:ss  
Attachments  
v:\projects\active\1009\2024\ob&ndot\_structuralfill\_38576\_3-19-24.docx

**STRUCTURAL FILL TEST RESULTS SUMMARY - RILITE PIT**

**Sieve Analysis**

| U.S. Standard Sieve Size | Percent Passing by Weight |                                       |
|--------------------------|---------------------------|---------------------------------------|
|                          | Sample Results            | 2016 SSPWC Specification <sup>2</sup> |
| 4 Inch                   | 100                       | 100                                   |
| 3 Inch                   | 100                       | -                                     |
| 2 1/2 Inch               | 97                        | -                                     |
| 2 Inch                   | 95                        | -                                     |
| 1 1/2 Inch               | 92                        | -                                     |
| 1 Inch                   | 84                        | -                                     |
| 3/4 Inch                 | 80                        | 70-100                                |
| 1/2 Inch                 | 74                        | -                                     |
| 3/8 Inch                 | 70                        | -                                     |
| #4                       | 60                        | -                                     |
| #8                       | 48                        | -                                     |
| #10                      | 46                        | -                                     |
| #16                      | 37                        | -                                     |
| #30                      | 28                        | -                                     |
| #40                      | 24                        | 15-65                                 |
| #50                      | 20                        | -                                     |
| #100                     | 16                        | -                                     |
| #200                     | 12                        | 5-20                                  |

| Test Type        | Test Method | Sample Results | 2016 SSPWC Specification <sup>2</sup> |
|------------------|-------------|----------------|---------------------------------------|
| Liquid Limit     | ASTM D4318  | 23             | 35 Maximum                            |
| Plasticity Index | ASTM D4318  | 3              | 12 Maximum                            |
| R-Value          | ASTM D2844  | 86             | 70 Minimum                            |

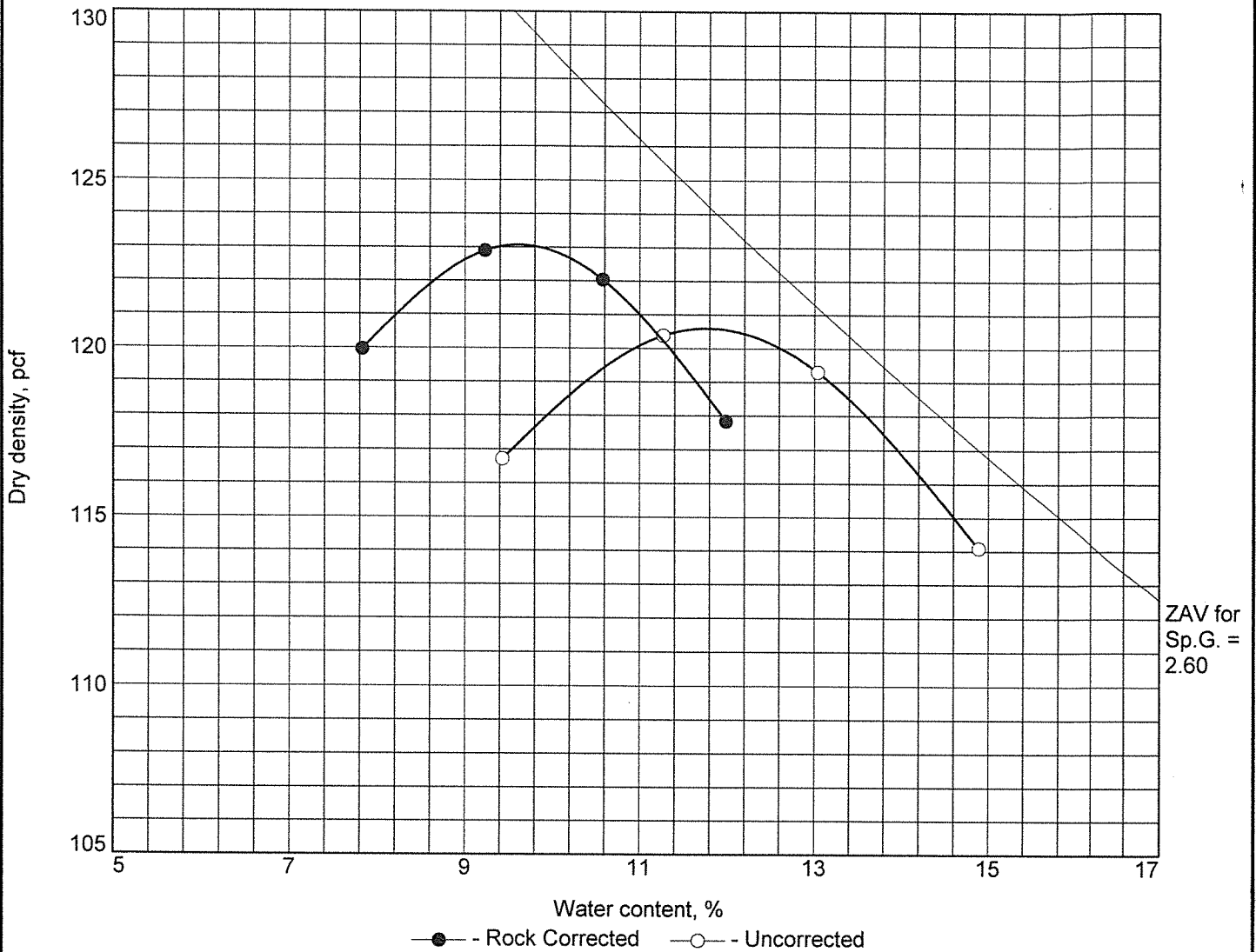
**Moisture Density**

| Test Type           | Test Method | Sample Result |
|---------------------|-------------|---------------|
| Maximum Dry Density | ASTM D1557C | 123.0         |
| Optimum Moisture    | ASTM D1557C | 9.5%          |

<sup>2</sup> All specification requirements per the 2016 Standard Specifications for Public Works Construction



# MOISTURE DENSITY CURVE for Curve No. 38576



Test specification: ASTM D 1557-12 Method C Modified  
 ASTM D4718-15 Oversize Corr. Applied to Each Test Point

| Elev/<br>Depth | Classification |        | Nat.<br>Moist. | Sp.G. | LL | PI | % ><br>3/4 in. | % <<br>No.200 |
|----------------|----------------|--------|----------------|-------|----|----|----------------|---------------|
|                | USCS           | AASHTO |                |       |    |    |                |               |
|                | SM             | A-1-a  | 3.2            |       | 23 | 3  | 23.8           | 12.4          |

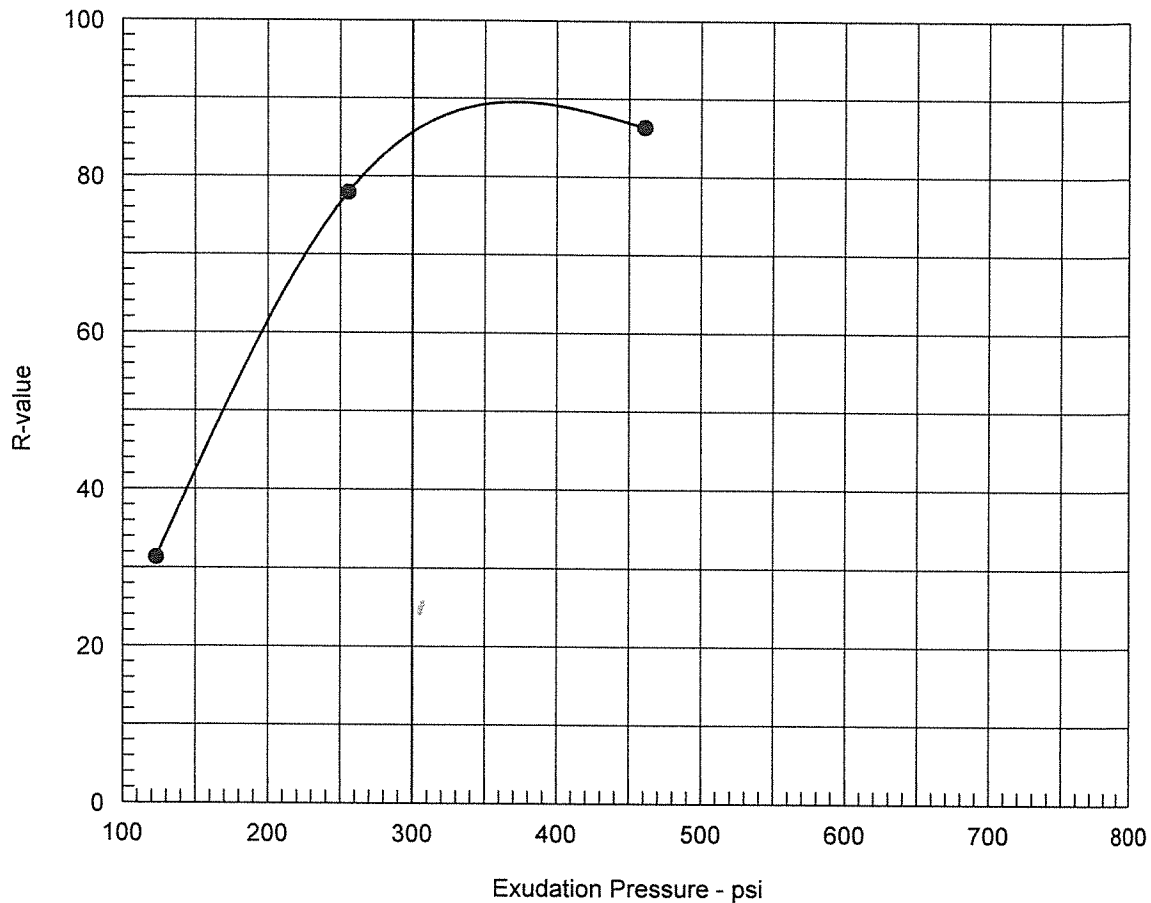
| ROCK CORRECTED TEST RESULTS     | UNCORRECTED | MATERIAL DESCRIPTION  |
|---------------------------------|-------------|---|
| Maximum dry density = 123.0 pcf | 120.5 pcf   | 4" MINUS STRUCTURAL FILL<br>RILITE PIT<br>GREY/BROWN SILTY SAND W/ GRAVEL |
| Optimum moisture = 9.5 %        | 12.0 %      |   |

|   |  |
|---|--|
| <b>Project No.</b> 1009 <b>Client:</b> RILITE AGGREGATES<br><b>Project:</b> RILITE AGGREGATES-QUALITY TESTING<br><b>Date:</b> 3/20/2024<br><b>Location:</b> STOCKPILE <b>Sample Number:</b> 38576 | <b>Remarks:</b><br>RECEIVED ON 3/19/2024 |
|   |  |

Tested By: J. HOFF


Checked By: S. SCHWEITZER

# R-VALUE TEST REPORT



**Resistance R-Value and Expansion Pressure - ASTM D2844**

| No. | Compact. Pressure psi | Density pcf | Moist. % | Expansion Pressure psi | Horizontal Press. psi @ 160 psi | Sample Height in. | Exud. Pressure psi | R Value | R Value Corr. |
|-----|-----------------------|-------------|----------|------------------------|---------------------------------|-------------------|--------------------|---------|---------------|
| 1   | 150                   | 114.9       | 17.6     | 0.00                   | 88                              | 2.60              | 123                | 29      | 31            |
| 2   | 250                   | 116.2       | 16.1     | 0.00                   | 21                              | 2.50              | 256                | 78      | 78            |
| 3   | 300                   | 118.2       | 15.4     | 0.00                   | 13                              | 2.50              | 461                | 86      | 86            |

| Test Results   | Material Description   |
|--|--|
| R-value at 300 psi exudation pressure = 86   | 4" MINUS STRUCTURAL FILL<br>RILITE PIT<br>GREY/BROWN SILTY SAND W/   |
| <b>Project No.:</b> 1009<br><b>Project:</b> RILITE AGGREGATES-QUALITY TESTING<br><b>Location:</b> STOCKPILE<br><b>Sample Number:</b> 38576<br><b>Date:</b> 3/29/2024 | <b>Tested by:</b> M. PONTONI<br><b>Checked by:</b> S. SCHWEITZER<br><b>Remarks:</b><br>RECEIVED ON 3/19/2024 |
|   |  |