



December 23, 2013

Report No. CS-265
J008630.02.7001

Mr. Aaron Thieret
Earthworks, Inc.
4287 North Highway 51
Perryville, Missouri 63775

Re: Dimensional Stone Testing

Dear Mr. Thieret:

Included within this report are results of testing conducted on samples of dimensional stone delivered to our laboratory on December 16, 2013. The samples were tested dry, and in general accordance with the methods listed below.

<u>Test to Determine</u>	<u>Method of Test</u>
Standard Test Methods for Absorption and Bulk Specific Gravity of Dimensional Stone	ASTM C97
Standard Test Method for Modulus of Rupture of Dimensional Stone	ASTM C99
Standard Test Method for Compressive Strength of Dimensional Stone	ASTM C170
Standard Test Method for Flexural Strength of Dimensional Stone	ASTM C880

We trust this is the information you require. Please contact the undersigned if you have any questions regarding this report.

Respectfully submitted,

GEOTECHNOLOGY, INC.
Construction Materials Testing Group

Zachary R. Bullock, CET
CMT Laboratory Manager

ZRB/JPK:zrb

Copies Submitted: via email

Attachment: Test Results

**Material: Black Granite,
Fredrick Town, MO**

**STANDARD TEST METHOD FOR ABSORPTION AND BULK SPECIFIC GRAVITY
OF DIMENSIONAL STONE – ASTM C97**

<u>Sample ID</u>	<u>Dry Weight, g</u>	<u>Immersed Weight, g</u>	<u>Saturated Weight, g</u>	<u>Percent Absorption</u>	<u>Bulk Spec. Gravity</u>
A1	401.8	268.8	402.3	0.1	3.010
A2	397.1	265.0	397.7	0.2	2.992
A3	397.1	264.2	397.7	0.1	2.983
A4	396.9	264.5	397.3	0.1	2.989
<u>A5</u>	<u>401.9</u>	<u>267.2</u>	<u>402.0</u>	<u>0.0</u>	<u>2.981</u>
Avg.	399.0	265.9	399.5	0.1	2.991

**STANDARD TEST METHOD FOR MODULUS OF RUPTURE OF DIMENSIONAL
STONE – ASTM C99**

<u>Sample ID</u>	<u>Width, in</u>	<u>Length, in</u>	<u>Thickness, in</u>	<u>Load, lbs</u>	<u>Modulus of Rupture, psi</u>
M1	4.00	8.03	2.34	6,870	3,326
M2	4.02	8.05	2.31	6,900	3,378
M3	4.00	8.05	2.33	6,950	3,361
M4	4.01	8.05	2.32	6,150	2,992
<u>M5</u>	<u>4.02</u>	<u>8.02</u>	<u>2.26</u>	<u>6,650</u>	<u>3,400</u>
Avg.	4.01	8.05	2.31	6,700	3,290

**STANDARD TEST METHOD FOR COMPRESSIVE STRENGTH OF DIMENSIONAL
STONE – ASTM C170**

<u>Sample ID</u>	<u>Area, in²</u>	<u>Load, lbs</u>	<u>Strength, psi</u>
C1	4.02	105,930	26,400
C2	3.96	83,520	21,100
C3	4.04	106,990	26,400
C4	4.04	108,890	27,000
<u>C5</u>	<u>4.06</u>	<u>108,260</u>	<u>26,700</u>
Avg.	4.04	102,720	25,500

**STANDARD TEST METHOD FOR FLEXURAL STRENGTH OF DIMENSIONAL
STONE – ASTM C880**

<u>Sample ID</u>	<u>Width, in</u>	<u>Length, in</u>	<u>Thickness, in</u>	<u>Load, lbs</u>	<u>Flexural Strength, psi</u>
F1	4.06	15.00	1.28	3,140	4,425
F2	4.06	15.05	1.30	2,890	3,948
F3	4.06	15.00	1.27	2,550	3,651
F1	4.04	15.00	1.30	2,890	3,968
<u>F1</u>	<u>4.09</u>	<u>15.00</u>	<u>1.30</u>	<u>2,700</u>	<u>3,663</u>
Avg.	4.06	15.00	1.29	2,830	3,931