



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION

BEVERLY EAVES PERDUE  
GOVERNOR

EUGENE A. CONTI, JR.  
SECRETARY

September 28, 2011

Keith Brabant, P.E.  
The Reinforced Earth Company  
8614 Westwood Center Drive  
Suite 1100  
Vienna, VA 22182

Subject: Approval of The Reinforced Earth Company's Reinforced Earth System

Dear Mr. Brabant:

The Geotechnical Engineering Unit (GEU) has reviewed the renewal submittal dated February 24, 2011 for The Reinforced Earth Company's Reinforced Earth System in accordance with the "NCDOT Policy for Mechanically Stabilized Earth Retaining Walls" and the GEU Standard Mechanically Stabilized Earth (MSE) Retaining Walls Provision. In addition to the February 24<sup>th</sup> submittal, several subsequent revised design calculations were received. Based on this information, Reinforced Earth Company's Reinforced Earth wall system is approved for use on North Carolina Department of Transportation (NCDOT) projects in accordance with the MSE wall policy and standard provision. This policy and provision may be obtained from:

<http://www.ncdot.org/doh/preconstruct/highway/geotech/msewalls/>

For your reference, the approved steel reinforcements and corresponding design parameters to be used for future NCDOT MSE wall design submittals are listed in the table below.

**Course Aggregate**

| Reinforcement           | Fy<br>(ksi) | b<br>(in) | Ac<br>(in <sup>2</sup> ) | Rc              | F* top | F* 20 ft | $\alpha$ |
|-------------------------|-------------|-----------|--------------------------|-----------------|--------|----------|----------|
| 50mm x 4 mm<br>(Ribbed) | 65          | 2         | 0.154                    | 0.050-<br>0.167 | 2.0    | 0.78     | 1.0      |

**Fine Aggregate**

| Reinforcement           | Fy<br>(ksi) | b<br>(in) | Ac<br>(in <sup>2</sup> ) | Rc              | F* top | F* 20 ft | $\alpha$ |
|-------------------------|-------------|-----------|--------------------------|-----------------|--------|----------|----------|
| 50mm x 4 mm<br>(Ribbed) | 65          | 2         | 0.154                    | 0.050-<br>0.167 | 1.8    | 0.67     | 1.0      |

**MAILING ADDRESS:**  
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[www.ncdot.org/doh/preconstruct/highway/geotech](http://www.ncdot.org/doh/preconstruct/highway/geotech)

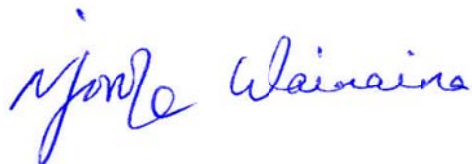
**LOCATION:**  
CENTURY CENTER COMPLEX  
ENTRANCE B-2  
1020 BIRCH RIDGE DRIVE  
RALEIGH NC 27610

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Also, Reinforced Earth Company's tie strips, bolts, nuts and washers are required and defined as miscellaneous components in accordance with the GEU standard MSE wall provision.

If you have any questions, I can be reached at (919) 707-6850.

Sincerely,



Njoroge W. Wainaina  
State Geotechnical Engineer

cc: K. J. Kim, Ph.D., P.E., Eastern Regional Geotechnical Manager (w/ submittal)  
John Pilipchuk, L.G., P.E., Western Regional Geotechnical Manager (w/ submittal)  
Mohammed Mulla, P.E., Geotechnical Contracts & Statewide Services Manager (w/ submittal)  
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Chris Peoples, P.E., State Materials Engineer  
Rodger Rochelle, P.E., Transportation Program Management Director  
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