



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

BEVERLY EAVES PERDUE
GOVERNOR

EUGENE A. CONTI, JR.
SECRETARY

February 22, 2012

Thomas Taylor, P.E.
T&B Structural Systems, LLC
6800 Manhattan Boulevard
Suite 304
Fort Worth, TX 76120

Subject: Updated Approval of T&B's Stabilized Earth Wall System

Dear Mr. Taylor:

The Geotechnical Engineering Unit (GEU) has reviewed the update submittal dated September 23, 2011 for T&B's Stabilized Earth Wall (SEW) System in accordance with the "NCDOT Policy for Mechanically Stabilized Earth Retaining Walls" and the GEU Standard Mechanically Stabilized Earth (MSE) Retaining Walls Provision. The update submittal included new panel anchors and grid-strip reinforcements with a bolted connection. In addition to the September 23rd submittal, subsequent revised reinforcement tables and design calculations were received. Based on this information, the update submittal for T&B's SEW system is approved in accordance with the MSE wall policy and standard provision. This policy and provision is available from:

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

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

MSEW INPUT VALUES FOR TBSS SOIL REINFORCING PARAMETERS - Grid-Strip™ Fine Fill												
Reinforcement	F _y (ksi)	b (in)	A _c (in ²)	R _c	F* _{top}	F* ₂₀	α	Long Size	Tran Size	Long Space	Tran Space	Width
GS11	65.00	2	0.137	0.067 to 0.200	2	1	1.00	W11.0	W11.0	2 in.	6 in.	2 in.
GS15	65.00	2	0.201	0.067 to 0.200	2	1	1.00	W15.0	W11.0	2 in.	6 in.	2 in.
GS20	65.00	2	0.284	0.067 to 0.200	2	1	1.00	W20.0	W11.0	2 in.	6 in.	2 in.

Note:
Grid-Strip™ area is based on 100 year design life per AASHTO corrosion model for one Grid-Strip™.

MSEW INPUT VALUES FOR TBSS SOIL REINFORCING PARAMETERS - Grid-Strip™ Course Fill												
Reinforcement	F _y (ksi)	b (in)	A _c (in ²)	R _c	F* _{top}	F* ₂₀	α	Long Size	Tran Size	Long Space	Tran Space	Width
GS11	65.00	2	0.137	0.067 to 0.200	3	1.5	1.00	W11.0	W11.0	2 in.	6 in.	2 in.
GS15	65.00	2	0.201	0.067 to 0.200	3	1.5	1.00	W15.0	W11.0	2 in.	6 in.	2 in.
GS20	65.00	2	0.284	0.067 to 0.200	3	1.5	1.00	W20.0	W11.0	2 in.	6 in.	2 in.

Note:
Grid-Strip™ area is based on 100 year design life per AASHTO corrosion model for one Grid-Strip™.

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ENTRANCE B-2
1020 BIRCH RIDGE DRIVE
RALEIGH NC 27610

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Also, T&B alignment pins, panel anchors, tab connectors, bolts, nuts and washers are required and defined as miscellaneous components in accordance with the GEU standard MSE wall provision.

T&B's SEW system is currently being evaluated by the Highway Innovative Technology Evaluation Center (HITEC). Upon completion of the HITEC evaluation, revised pullout resistance factors (F*) may be required for this approval based on the evaluation results.

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)
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