STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

PAT MCCRORY
GOVERNOR

ANTHONY J. TATA
SECRETARY

April 10, 2013

Chad Julius, P.E.
Allan Block Corporation
7424 West 78th Street
Bloomington, MN 55439

Subject: Approval of Allan Block's MSE Wall System

Dear Mr. Julius:

The Geotechnical Engineering Unit (GEU) has reviewed the submittal dated March 20, 2013 for Allan Block's MSE Wall System in accordance with the "NCDOT Policy for Mechanically Stabilized Earth Retaining Walls" and the GEU Standard Mechanically Stabilized Earth (MSE) Retaining Walls Provision. Based on this submittal, Allan Block's MSE wall system is approved for provisional 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:
https://connect.ncdot.gov/resources/Geological/Pages/Products.aspx

See the MSE wall policy for restrictions on MSE wall systems with "approved for provisional use" status. For your reference, the approved geogrid reinforcements and corresponding design parameters to be used for future NCDOT MSE wall design submittals are listed in the tables on the following page.

MAILING ADDRESS:
NC DEPARTMENT OF TRANSPORTATION
GEOTECHNICAL ENGINEERING UNIT
1589 MAIL SERVICE CENTER
RALEIGH NC 27699-1589

TELEPHONE: 919-707-6850
Fax: 919-250-4237

connect.ncdot.gov/resources/Geological/Pages/

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

COARSE AGG: 75 Year - Geogrid Design Parameters per AASHTO LRFD Desgn for AB Vertical (AB Three)

Gird Type	T_{ult} (lbs/ft)	RF_{CR}	RF_D	RF_{ID}	T_{al} (lbs/ft)	F*	α	ρ	Confining Stress (lb/ft2)	CR_{ult}	CRcr	T_{ac} (lb/ft)
Miragrid 3XT	3500	1.45	1.15	1.25	1679	0.7	0.8	35.1	0	0.35	0.24	743
									2474	0.70	0.48	1467
Miragrid 5XT	4700	1.45	1.15	1.25	2255	0.7	0.8	35.1	0	0.25	0.17	694
									2360	0.37	0.26	1054
Stratagrid 200	3400	1.54	1.15	1.35	1422	0.625	0.8	32.01	0	0.26	0.17	503
									2474	0.75	0.49	1445
Stratagrid 350	4800	1.54	1.15	1.35	2008	0.625	0.8	32.01	0	0.22	0.15	609
									3713	0.49	0.32	1331

FINE AGG: 75 Year - Geogrid Design Parameters per AASHTO LRFD Desgn for AB Vertical (AB Three)

Gird Type	T_{ult} (lbs/ft)	RF_{CR}	RF_D	RF_{ID}	T_{al} (lbs/ft)	F*	α	ρ	Confining Stress (lb/ft2)	CR_{ult}	CRcr	T_{ac} (lb/ft)
Miragrid 3XT	3500	1.45	1.15	1.1	1908	0.61	0.8	31.35	0	0.35	0.24	743
									2474	0.70	0.48	1467
Miragrid 5XT	4700	1.45	1.15	1.1	2562	0.61	0.8	31.35	0	0.25	0.17	694
									2360	0.37	0.26	1054
Stratagrid 200	3400	1.54	1.15	1.15	1669	0.5396	0.8	28.35	0	0.26	0.17	503
									2474	0.75	0.49	1445
Stratagrid 350	4800	1.54	1.15	1.15	2357	0.5396	0.8	28.35	0	0.22	0.15	609
									3713	0.49	0.32	1331

COARSE AGG: 100 Year - Geogrid Design Parameters per AASHTO LRFD Desgn for AB Vertical (AB Three)

Gird Type	T_{ult} (lbs/ft)	RF_{CR}	RF_D	RF_{ID}	T_{al} (lbs/ft)	F*	α	ρ	Confining Stress (lb/ft2)	CR_{ult}	CRcr	T_{ac} (lb/ft)
Miragrid 3XT	3500	1.47	1.15	1.25	1656	0.7	0.8	35.1	0	0.35	0.24	733
									2474	0.70	0.48	1447
Miragrid 5XT	4700	1.47	1.15	1.25	2224	0.7	0.8	35.1	0	0.25	0.17	684
									2360	0.37	0.25	1040
Stratagrid 200	3400	1.55	1.15	1.35	1413	0.625	0.8	32.01	0	0.26	0.17	499
									2474	0.75	0.49	1435
Stratagrid 350	4800	1.55	1.15	1.35	1995	0.625	0.8	32.01	0	0.22	0.15	605
									3713	0.49	0.32	1323

FINE AGG: 100 Year - Geogrid Design Parameters per AASHTO LRFD Desgn for AB Vertical (AB Three)

Gird Type	T_{ult} (lbs/ft)	RF_{CR}	RF_D	RF_{ID}	T_{al} (lbs/ft)	F*	α	ρ	Confining Stress (lb/ft2)	CR_{ult}	CRcr	T_{ac} (lb/ft)
Miragrid 3XT	3500	1.47	1.15	1.1	1882	0.61	0.8	31.3	0	0.35	0.24	733
									2474	0.70	0.48	1447
Miragrid 5XT	4700	1.47	1.15	1.1	2527	0.61	0.8	31.3	0	0.25	0.17	684
									2360	0.37	0.25	1040
Stratagrid 200	3400	1.55	1.15	1.15	1659	0.5396	0.8	28.35	0	0.26	0.17	499
									2474	0.75	0.49	1435
Stratagrid 350	4800	1.55	1.15	1.15	2342	0.5396	0.8	28.35	0	0.22	0.15	605
									3713	0.49	0.32	1323

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

Sincerely,

DocuSigned by:
John Pilipchuk
52C44B94B8BE444...

John L. Pilipchuk
State Geotechnical Engineer

cc: Mohammed Mulla, P.E., Geotechnical Contracts & Statewide Services Manager (w/ submittal)
K. J. Kim, Ph.D., P.E., Eastern Regional Geotechnical Manager (w/ submittal)
John Pilipchuk, L.G., P.E., Acting Western Regional Geotechnical Manager (w/ submittal)
Greg Perfetti, P.E., State Structures Engineer (w/ submittal)
Chris Peoples, P.E., State Materials Engineer
Jeff Garland, P.E., State Value Management Engineer
Rodger Rochelle, P.E., Transportation Program Management Director
Mike Robinson, P.E., State Bridge Construction Engineer