



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION


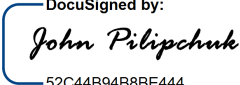
ROY COOPER
GOVERNOR

J. ERIC BOYETTE
SECRETARY

September 14, 2022

MEMORANDUM TO: David Stutts, PE
Project Engineer - PEF/Program Mgt.

ATTENTION: Hoang T. Dieu, PE
Team Leader - Project Mgt/PS&E

FROM:  DS
John Pilipchuk, LG, PE
State Geotechnical Engineer 
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STATE PROJECT: 48063.1.FR1 (B-5869)
COUNTY: Burke
DESCRIPTION: Replace Bridge No. 110099 on US 64/US70 (Fleming Drive)
over Southern Railroad

SUBJECT: Geotechnical Report – 1.5:1 (H:V) End Slope Evaluation

The Geotechnical Engineering Unit presents the attached slope analysis for the proposed 1.5:1 (H:V) bridge end slopes located within Railroad Right of Way. Slope stability analysis was performed at End Bent 1, which represents the worst-case scenario within the Railroad Right of Way. The analysis yields a Factor of Safety of 1.5, which is acceptable.

Respectfully Submitted,




DocuSigned by:
C447682092314CC
Michael Stephens, PE
NCDOT WRO Geotechnical Engineer

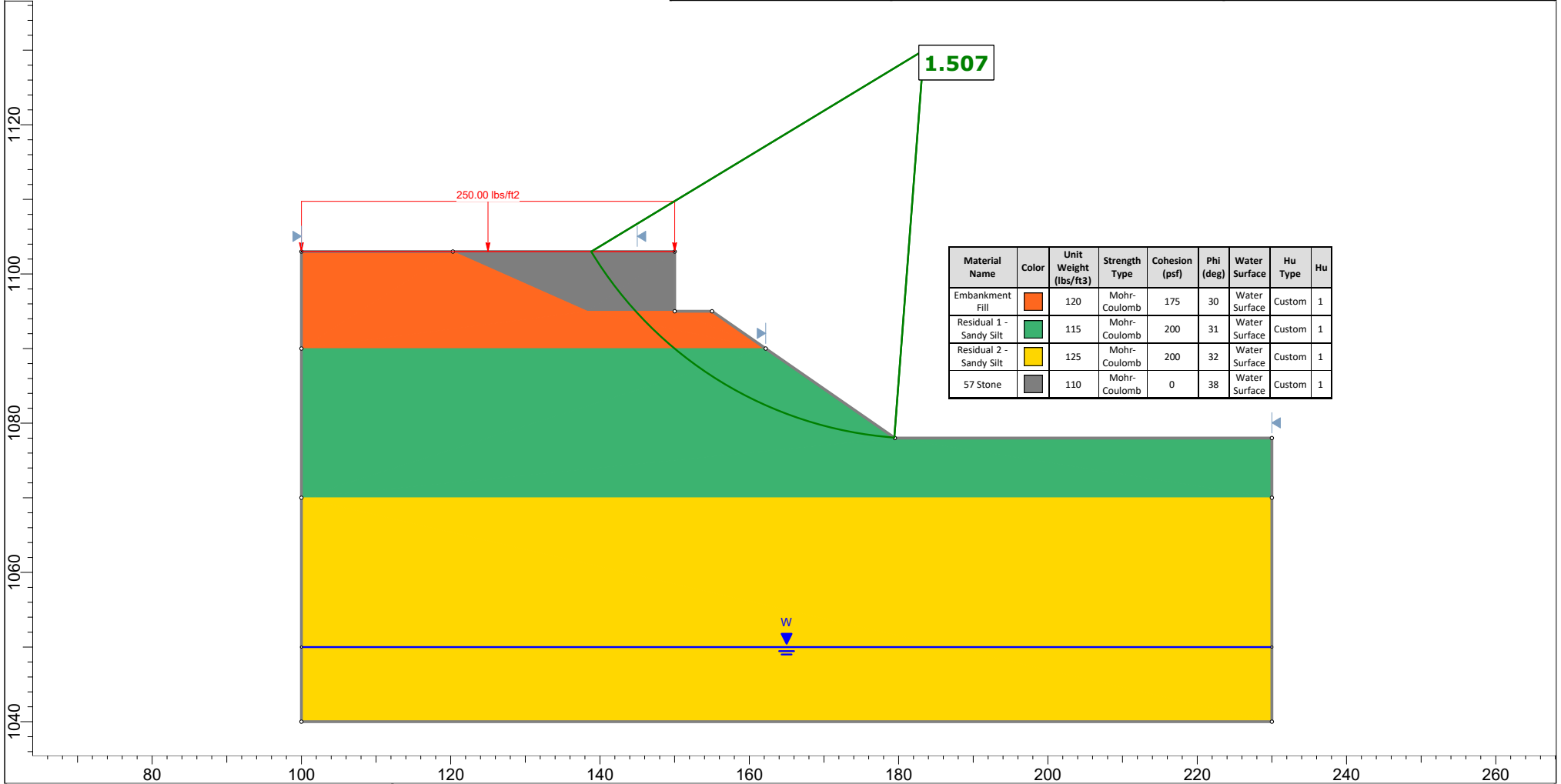
09/14/2022

Attachments: End Bent Slope Stability Analysis



SLIDEINTERPRET 9.012

<i>Project</i>		Bridge 99 Burke	
<i>Analysis Description</i>			
<i>Drawn By</i>	MHS	<i>Company</i>	NCDOT WRO Geotech
<i>Date</i>	8/30/2022, 8:24:02 AM	<i>File Name</i>	B5869_GEO_BRDG0099_SLOPE_EB1_3.slm



Material Name	Color	Unit Weight (lbs/ft3)	Strength Type	Cohesion (psf)	Phi (deg)	Water Surface	Hu Type	Hu
Embankment Fill	Orange	120	Mohr-Coulomb	175	30	Water Surface	Custom	1
Residual 1 - Sandy Silt	Green	115	Mohr-Coulomb	200	31	Water Surface	Custom	1
Residual 2 - Sandy Silt	Yellow	125	Mohr-Coulomb	200	32	Water Surface	Custom	1
57 Stone	Grey	110	Mohr-Coulomb	0	38	Water Surface	Custom	1

	<i>Project</i>		Bridge 99 Burke	
	<i>Group</i>	Group 1	<i>Scenario</i>	Master Scenario
	<i>Drawn By</i>	MHS	<i>Company</i>	NCDOT WRO Geotech
	<i>Date</i>	8/30/2022, 8:24:02 AM	<i>File Name</i>	B5869_GEO_BRDG0099_SLOPE_EB1_3.slm

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