

MEMORANDUM

(R-032-2015)

**TO: Larry Krueger, PE
Transportation Engineer Supervisor
District 4, Project Development - Design**

**FROM: Bart Asher, PE, PLS
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Division of Structural Design**

**BY: J.C. Wilhoite, PE
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DATE: September 18, 2015

**SUBJECT: Hardin County
JP02 047 0251 002-007 D
KY 251 and KY 434 Safety and Spot Improvements
KY 251 Station 175+00.00 to 348+00.00
KY 434 Station 500+00.00 to 665+00.00
Item # 04-0153.01
Mars # 8383101D
Geotechnical Exploration and Test Summary**

A geotechnical exploration and test summary has been completed for the subject project. Drilling and sampling were performed by HDR/ICA. Laboratory testing was performed by the Geotechnical Branch. The purpose of this report is to provide the designer with pavement and soil subgrade information. This project involves safety and spot improvements to KY 251 and KY 434. At the request of District 4 personnel, six locations were drilled to determine the pavement composition, thickness, and the properties of the underlying subgrade soils. The locations for the borings were provided by the district.

Of the six samples taken, five samples were low plasticity clays and one was a high plasticity clay. The California Bearing Ratio (CBR) test results ranged from 1.1 to 9.6 with five of the six samples exceeding a CBR of 4. The lone sample consisting of high plasticity clay was the only CBR test result to fall below 4. This sample was encountered below the pavement section along KY 434 at station 644+99.96.

All of the sample locations encountered a layer of asphalt at the surface ranging from 0.6 to 1.0 feet in thickness. The sample locations along KY 251 encountered a layer of DGA directly beneath the asphalt with thicknesses ranging from 0.5 to 0.8 feet. The sample locations along KY 434 encountered a concrete layer directly beneath the asphalt with thicknesses ranging from 0.6 to 0.7 feet. The following table summarizes the results of the findings from the drilling and testing.

Road	Station	Asphalt (ft)	DGA (ft)	Concrete (ft)	CBR	Subgrade
KY 251	185+00.02, 5.4' RT	1.0	0.5	-	5.5	Soft, moist, brown clay (CL)
	260+00.05, 4.5' RT	1.0	0.5	-	9.6	Soft, brown clay (CL)
	335+00.01, 4.9' RT	0.7	0.8	-	4.4	Moist, reddish brown clay (CL)
KY 434	529+99.92, 7.0' RT	0.8	-	0.6	5.0	Moist, brown clay (CL)
	590+00.12, 6.5' RT	0.6	-	0.7	8.2	Moist, brown clay (CL)
	644+99.96, 5.9' RT	0.8	-	0.7	1.1	Moist, light brown clay (CH)

If you have any questions, please contact the Division of Structural Design, Geotechnical Branch.