ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT



SUBSURFACE INVESTIGATION

STATE JOB NO.	BR0405	
FEDERAL AID PROJECT NO.	STPB-0004(58)	
	WILDCAT CREEK STR. & APPRS. (S)	
COUNTY ROAD NO.	1785	
IN	BENTON	COUNTY

The information contained herein was obtained by the Department for design and estimating purposes only. It is being furnished with the express understanding that said information does not constitute a part of the Proposal or Contract and represents only the best knowledge of the Department as to the location, character and depth of the materials encountered. The information is only included and made available so that bidders may have access to subsurface information obtained by the Department and is not intended to be a substitute for personal investigation, interpretation and judgment of the bidder. The bidder should be cognizant of the possibility that conditions affecting the cost and/or quantities of work to be performed may differ from those indicated herein.

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MATERIALS DIVISION - GEOTECHNICAL SEC. PAGE 2 OF 2		ARKANSAS HWY. & TRANS. DEPARTMENT MATERIAL S DIVISION GEOTECHNICAL SEC												
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	ARKANSAS HWY. & TRANS. DEPARTMENT MATERIALS DIVISION - GEOTECHNICAL SEC. BORING NO. 4 PAGE 2 OF 2												
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ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT

August 24, 2016

TO:

Mr. Rick Ellis, Bridge Engineer

SUBJECT:

Job No. BR0405

Wildcat Creek Str. & Apprs. (S)

County Road No. 1785

Benton County

Transmitted herewith are a brief summary of the geology and site conditions, D50 analysis test results, rock mass rating summary, unconfined compressive strength results, and the logs of the borings conducted for the structure and approaches of the above referenced project. The samples obtained by the Standard Penetration Tests were brought to the laboratory and visually classified by experienced lab personnel. The rock cores are available for inspection at the Materials Division.

No borings were obtained in the vicinity of Bent 1 due to the proximity of overhead high voltage power lines. However, based on plans provided by the Bridge Division it is anticipated that Bent 1 will be founded on spread footings. Utilizing the data obtained from the adjacent borings for the intermediate bents and assuming competent rock, containing no cavities, will be encountered at a depth shallower than 15 feet below ground level, spread footings should be sized based on the values provided in Table 1. However, the Material's Division recommends that the elevation, type and quality of rock, and absence of cavities be verified once the overhead high voltage power lines have been relocated and heavy equipment can operate safely.

TABLE 1 - Bearing Capacity Recommendations for Spread Footings

Foundation Description	Presumptive Bearing Resistance at Service Limit State (ksf)
Spread Footing	40

Based on plans provided by the Bridge Division and the depth at which bedrock was encountered, it is anticipated that Bents 2 & 3 will be founded on drilled shafts and Bent 4 will be founded on piling. Piling should be tipped into the competent Chert with interbedded Limestone and preboring may be necessary to achieve minimum penetration requirements. Drilled shafts socketed into the hard gray Chert with interbedded Limestone should be designed based on the values provided in Table 2.

TABLE 2 - Bearing Capacity Recommendations for Drilled Shafts

Foundation Description	Nominal Tip Resistance (ksf)	Factored Tip Resistance (ksf)	Nominal Side Resistance (ksf)	Factored Side Resistance (ksf)
Drilled Shafts	480	240	21.2	11.7

If you have any questions concerning these recommendations, please contact the Geotechnical Section.

Michael C. Benson Materials Engineer

MCB:rpt:mlg

cc: State Construction Engineer - Master File Copy

District 4 Engineer

G.C. File