

ARKANSAS DEPARTMENT OF TRANSPORTATION



**SUBSURFACE INVESTIGATION**

STATE JOB NO. 050325

FEDERAL AID PROJECT NO. NHPP-0033(24)

LITTLE BRUSHY CREEK STR. & APPRS. (S)

STATE HIGHWAY 223 SECTION 1

IN IZARD 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.

ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT

December 20, 2016

**TO:** Mr. Trinity Smith, Engineer of Roadway Design

**SUBJECT:** Job No. 050325  
Brushy Creek Str. & Apprs. (S)  
Route 223 Section 1  
Izard County

Transmitted herewith is the requested Soil Survey test results for the above referenced job. The project consists of replacing the bridge crossing Brushy Creek on Highway 223. Samples were obtained in the existing travel lanes and ditch line. Due to utility conflicts a bulk sample was not obtained. An estimated R-Value of 10 is recommended for the subgrade materials.

Based on laboratory results of samples obtained, the subgrade soils consist primarily of non-plastic sands. The subgrade soils are expected to provide a stable working platform with normal drying and compactive efforts, if the weather is favorable during construction. Rock was encountered at station 106+00 6 feet right of centerline at a depth of 4.5 feet. No slides were observed within the project limits.

Based on currently available cross sections, the maximum cut depth is approximately 18 feet. The proposed 3:1 cut slope configuration is acceptable as shown.

The maximum embankment height is approximately 13 feet. Prior to embankment construction all soft, unstable organic material in the ditch line will need to be undercut, anticipated to be no more than two feet. The embankment may be constructed with locally available unspecified material.

Listed below is the additional information requested for use in developing the plans:

1. The Qualified Products List (QPL) indicates that Aggregate Base Course (Class CL-7) is available from commercial producers located in the vicinity of Violet Hill.
2. Asphalt Concrete Hot Mix

<u>Type</u>	<u>Asphalt Cement %</u>	<u>Mineral Aggregate %</u>
Surface Course	5.3	94.7
Binder Course	4.4	95.6
Base Course	3.9	96.1

  
Michael C. Benson  
Materials Engineer

MCB:pt:bjj  
Attachment

cc: State Constr. Eng. – Master File Copy  
District 5 Engineer  
System Information and Research Div.  
G. C. File

ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT - LITTLE ROCK, ARKANSAS  
MATERIALS DIVISION

MICHAEL BENSON, MATERIALS ENGINEER

\*\*\* SOIL SURVEY / PAVEMENT SOUNDING TEST REPORT \*\*\*

DATE - 12/20/16 SEQUENCE NO. - 1  
JOB NUMBER - 050325 MATERIAL CODE - SSPS  
FEDERAL AID NO. - TO BE ASSIGNED SPEC. YEAR - 2014  
PURPOSE - SOIL SURVEY SAMPLE SUPPLIER ID. - 1  
SPEC. REMARKS - NO SPECIFICATION CHECK COUNTY/STATE - 33  
SUPPLIER NAME - STATE DISTRICT NO. - 05  
NAME OF PROJECT - BRUSHY CREEK STR. & APPRS.(S)  
PROJECT ENGINEER - NOT APPLICABLE  
PIT/QUARRY - ARKANSAS  
LOCATION - IZARD COUNTY DATE SAMPLED - 12/06/16  
SAMPLED BY - THORNTON/BATES DATE RECEIVED - 12/12/16  
SAMPLE FROM - TEST HOLE DATE TESTED - 12/19/16  
MATERIAL DESC. - SOIL SURVEY PAVEMENT SOUNDINGS

LAB NUMBER	20164009	20164010	20164011
SAMPLE ID	S490	S491	S492
TEST STATUS	INFORMATION ONLY	INFORMATION ONLY	INFORMATION ONLY
STATION	106+00	106+00	112+00
LOCATION	06RT	18RT	06LT
DEPTH IN FEET	0-4.5Z	0-5	0-5
MAT'L COLOR	BROWN	BROWN	BROWN
MAT'L TYPE	-	-	-
LATITUDE DEG-MIN-SEC	36 10 55.30	36 02 46.50	36 10 57.60
LONGITUDE DEG-MIN-SEC	92 06 8.10	91 49 1.70	92 06 6.90
% PASSING			
2 IN.	-	-	-
1 1/2 IN.	-	-	-
3/4 IN.	100	100	100
3/8 IN.	98	84	96
NO. 4	94	80	91
NO. 10	91	78	88
NO. 40	84	73	82
NO. 80	50	47	47
NO. 200	36	36	30
LIQUID LIMIT	ND	27	ND
PLASTICITY INDEX	NP	16	NP
AASHTO SOIL	A-4(0)	A-6(1)	A-2-4(0)
UNIFIED SOIL	-	-	-
% MOISTURE CONTENT	15.2	17.2	8.5
ACHMSC (IN)	3.0X	--	2.50W
CTCSB (IN)	3.0	--	1.50
AGG.BASE CRS CL-7 (IN)	4.0	--	5.0
	-	-	-
	-	-	-
	-	-	-
	-	-	-
	-	-	-
	-	-	-
	-	-	-
	-	-	-
	-	-	-
	-	-	-

REMARKS - W=MULTIPLY LAYERS, X=STRIPPED, Z=AUGER REFUSAL

AASHTO TESTS : T24 T88 T89 T90 T265

ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT - LITTLE ROCK, ARKANSAS  
MATERIALS DIVISION

MICHAEL BENSON, MATERIALS ENGINEER

\*\*\* SOIL SURVEY / PAVEMENT SOUNDING TEST REPORT \*\*\*

DATE	- 12/20/16	SEQUENCE NO.	- 2
JOB NUMBER	- 050325	MATERIAL CODE	- SSPS
FEDERAL AID NO.	- TO BE ASSIGNED	SPEC. YEAR	- 2014
PURPOSE	- SOIL SURVEY SAMPLE	SUPPLIER ID.	- 1
SPEC. REMARKS	- NO SPECIFICATION CHECK	COUNTY/STATE	- 33
SUPPLIER NAME	- STATE	DISTRICT NO.	- 05
NAME OF PROJECT	- BRUSHY CREEK STR. & APPRS. (S)		
PROJECT ENGINEER	- NOT APPLICABLE		
PIT/QUARRY	- ARKANSAS		
LOCATION	- IZARD COUNTY	DATE SAMPLED	- 12/06/16
SAMPLED BY	- THORNTON/BATES	DATE RECEIVED	- 12/12/16
SAMPLE FROM	- TEST HOLE	DATE TESTED	- 12/19/16
MATERIAL DESC.	- SOIL SURVEY PAVEMENT SOUNDINGS		

LAB NUMBER	-	20164012	-	-
SAMPLE ID	-	S493	-	-
TEST STATUS	-	INFORMATION ONLY	-	-
STATION	-	112+00	-	-
LOCATION	-	22LT	-	-
DEPTH IN FEET	-	0-5	-	-
MAT'L COLOR	-	BROWN	-	-
MAT'L TYPE	-		-	-
LATITUDE DEG-MIN-SEC	-	36 11 .80	-	-
LONGITUDE DEG-MIN-SEC	-	92 06 5.40	-	-
% PASSING	2	IN.	-	-
	1 1/2	IN.	-	-
	3/4	IN.	-	100
	3/8	IN.	-	99
	NO. 4		-	99
	NO. 10		-	98
	NO. 40		-	94
	NO. 80		-	45
	NO. 200		-	26
LIQUID LIMIT	-	ND	-	-
PLASTICITY INDEX	-	NP	-	-
AASHTO SOIL	-	A-2-4 (0)	-	-
UNIFIED SOIL	-		-	-
% MOISTURE CONTENT	-	14.5	-	-
	-		-	-
	-		-	-
	-		-	-
	-		-	-
	-		-	-
	-		-	-
	-		-	-
	-		-	-
	-		-	-
	-		-	-

REMARKS - W=MULTIPLE LAYERS, X=STRIPPED, Z=AUGER REFUSAL

AASHTO TESTS : T24 T88 T89 T90 T265