

ARKANSAS DEPARTMENT OF TRANSPORTATION



SUBSURFACE INVESTIGATION

STATE JOB NO. 100834

FEDERAL AID PROJECT NO. NHPP-0047(67)

DITCH AT L.M. 0.82 STR. & APPRS. (S)

STATE HIGHWAY 312 SECTION 1

IN MISSISSIPPI 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 DEPARTMENT OF TRANSPORTATION

AR DOT.gov | IDriveArkansas.com | Scott E. Bennett, P.E., Director

MATERIALS DIVISION

11301 West Baseline Road | P.O. Box 2261 | Little Rock, AR 72203-2261 | Phone: 501.569.2185 | Fax: 501.569.2368

July 3, 2019

TO: Mr. Trinity Smith, Engineer of Roadway Design

SUBJECT: Job No. 100834
Ditch at L. M. 0.82 Str. & Apprs. (S)
Route 312 Section 1
Mississippi County

Attached is the requested soil survey and strength data test results for the above referenced job. The project consists of replacing the bridge at log mile 0.82 on Highway 312 with a box culvert. Samples were taken in the existing travel lanes and ditch line.

The subgrade soils consist primarily of highly plastic sandy clay with some gravel. The subgrade soils may require stabilization to obtain a stable working platform. It is recommended that 4% lime (by dry wt.) mixed to a depth of 16 inches be used for quantity estimation purposes. If the Engineer determines stabilization is required, field trials or local experience may dictate that a lower lime content will provide a stable working platform.

The proposed cross sections are acceptable as shown.

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 at the river port in Armorel.

2. Asphalt Concrete Hot Mix

<u>Type</u>	<u>Asphalt Cement %</u>	<u>Mineral Aggregate %</u>
Surface Course	5.1	94.9
Binder Course	4.1	95.9
Base Course	3.9	96.1


Michael C. Benson
Materials Engineer

MCB:pt:bjj
Attachment

cc: State Constr. Eng. – Master File Copy
District 10 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 STRENGTH TEST REPORT ***

DATE - 06/19/2019
JOB NUMBER - 100834

SEQUENCE NO. - 1
MATERIAL CODE - SSRV
SPEC. YEAR - 2014
SUPPLIER ID. - 1
COUNTY/STATE - 47
DISTRICT NO. - 10

JOB NAME - DITCH AT L.M. 0.82 STR. & APPRS. (S)

* STATION LIMITS R-VALUE AT 240 psi *

BEGIN JOB - END JOB

LESS THAN 5

REMARKS -

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AASHTO TESTS : T190

JOB: 100834

Arkansas State Highway Transportation Department

JOB NAME: DITCH AT L.M. 0.82 STR. & APPRS. (S)

Materials Division

COUNTY NO. 47 DATE TESTED 6/19/2019

Michael Benson, Materials Engineer

STA.#	LOC.	DEPTH	COLOR						L.L.	P.I.	SOIL CLASS	LAB #:	%MOISTURE
				#4	#10	#40	#80	#200					
				S	I	E	V	E	S				
12+00	20 RT	0-5	BROWN	99	99	96	89	85	52	29	A-7-6(26)	RV332	
12+00	05 RT	0-5	BROWN	98	96	89	75	69	39	24	A-6(14)	S328	36.6
12+00	20 RT	0-5	BROWN	92	91	87	79	74	53	34	A-7-6(24)	S329	35.7
17+00	05 LT	0-5	BROWN	79	74	62	51	42	21	6	A-4(0)	S330	34.3
17+00	15 LT	0-5	BROWN	95	91	81	67	58	40	22	A-6(10)	S331	21.2

comments: W=MULTIPLE LAYERS

Wednesday, June 26, 2019

JOB: 100834

JOB NAME: DITCH AT L.M. 0.82 STR. & APPRS. (S)

Arkansas State Highway Transportation Department
Materials Division

DATE TESTED
6/19/2019

COUNTY NO. 47

Michael Benson, Materials Engineer

STA.# LOC.

PAVEMENT SOUNDINGS

12+00	05 RT	ACHM SC 10.0W	AGG. BASE CRS. CL-7 10.0
12+00	20 RT	ACHM SC ---	AGG. BASE CRS. CL-7 ---
17+00	05 LT	ACHM SC 10.0W	AGG. BASE CRS. CL-7 10.0

comments: W=MULTIPLE LAYERS

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

MICHAEL BENSON, MATERIALS ENGINEER

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

DATE	- 06/19/19	SEQUENCE NO.	- 1
JOB NUMBER	- 100834	MATERIAL CODE	- SSRVPS
FEDERAL AID NO.	- TO BE ASSIGNED	SPEC. YEAR	- 2014
PURPOSE	- SOIL SURVEY SAMPLE	SUPPLIER ID.	- 1
SPEC. REMARKS	- NO SPECIFICATION CHECK	COUNTY/STATE	- 47
SUPPLIER NAME	- STATE	DISTRICT NO.	- 10
NAME OF PROJECT - DITCH AT L.M. 0.82 STR. & APPRS. (S)			
PROJECT ENGINEER - NOT APPLICABLE			
PIT/QUARRY	- ARKANSAS		
LOCATION	- MISSISSIPPI COUNTY	DATE SAMPLED	- 04/24/19
SAMPLED BY	- FRAZIER	DATE RECEIVED	- 04/29/19
SAMPLE FROM	- TEST HOLE	DATE TESTED	- 06/19/19
MATERIAL DESC. - SOIL SURVEY - R VALUE- PAVEMENT SOUNDINGS			

LAB NUMBER	- 20191318	- 20191319	- 20191320
SAMPLE ID	- S328	- S329	- S330
TEST STATUS	- INFORMATION ONLY	- INFORMATION ONLY	- INFORMATION ONLY
STATION	- 12+00	- 12+00	- 17+00
LOCATION	- 05 RT	- 20 RT	- 05 LT
DEPTH IN FEET	- 0-5	- 0-5	- 0-5
MAT'L COLOR	- BROWN	- BROWN	- BROWN
MAT'L TYPE	-	-	-
LATITUDE DEG-MIN-SEC	- 35 52 19.70	- 35 52 19.60	- 35 52 19.80
LONGITUDE DEG-MIN-SEC	- 89 59 30.40	- 89 59 30.40	- 89 59 24.50
% PASSING			
	2 IN. -	-	-
	1 1/2 IN. -	-	-
	3/4 IN. - 100	- 100	- 100
	3/8 IN. - 99	- 93	- 88
	NO. 4 - 98	- 92	- 79
	NO. 10 - 96	- 91	- 74
	NO. 40 - 89	- 87	- 62
	NO. 80 - 75	- 79	- 51
	NO. 200 - 69	- 74	- 42
LIQUID LIMIT	- 39	- 53	- 21
PLASTICITY INDEX	- 24	- 34	- 6
AASHTO SOIL	- A-6(14)	- A-7-6(24)	- A-4(0)
UNIFIED SOIL	-	-	-
% MOISTURE CONTENT	- 36.6	- 35.7	- 34.3
ACHM SC (IN)	- 10.0W	- ---	- 10.0W
AGG. BASE CRS. CL-7 (IN)	- 10.0	- ---	- 10.0
	-	-	-
	-	-	-
	-	-	-
	-	-	-
	-	-	-
	-	-	-
	-	-	-
	-	-	-

REMARKS - W=MULTIPLE LAYERS
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AASHTO TESTS : T24 T88 T89 T90 T265
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ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT - LITTLE ROCK, ARKANSAS
MATERIALS DIVISION

MICHAEL BENSON, MATERIALS ENGINEER

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

DATE	- 06/19/19	SEQUENCE NO.	- 2
JOB NUMBER	- 100834	MATERIAL CODE	- SSRVPS
FEDERAL AID NO.	- TO BE ASSIGNED	SPEC. YEAR	- 2014
PURPOSE	- SOIL SURVEY SAMPLE	SUPPLIER ID.	- 1
SPEC. REMARKS	- NO SPECIFICATION CHECK	COUNTY/STATE	- 47
SUPPLIER NAME	- STATE	DISTRICT NO.	- 10
NAME OF PROJECT	- DITCH AT L.M. 0.82 STR. & APPRS. (S)		
PROJECT ENGINEER	- NOT APPLICABLE		
PIT/QUARRY	- ARKANSAS		
LOCATION	- MISSISSIPPI COUNTY	DATE SAMPLED	- 04/24/19
SAMPLED BY	- FRAZIER	DATE RECEIVED	- 04/29/19
SAMPLE FROM	- TEST HOLE	DATE TESTED	- 06/19/19
MATERIAL DESC.	- SOIL SURVEY - R VALUE- PAVEMENT SOUNDINGS		

LAB NUMBER	-	20191321	-	-
SAMPLE ID	-	S331	-	-
TEST STATUS	-	INFORMATION ONLY	-	-
STATION	-	17+00	-	-
LOCATION	-	15 LT	-	-
DEPTH IN FEET	-	0-5	-	-
MAT'L COLOR	-	BROWN	-	-
MAT'L TYPE	-		-	-
LATITUDE DEG-MIN-SEC	-	35 52 19.90	-	-
LONGITUDE DEG-MIN-SEC	-	89 59 24.50	-	-
% PASSING	2	IN.	-	-
	1	1/2 IN.	-	-
		3/4 IN.	- 100	-
		3/8 IN.	- 99	-
	NO. 4		- 95	-
	NO. 10		- 91	-
	NO. 40		- 81	-
	NO. 80		- 67	-
	NO. 200		- 58	-
LIQUID LIMIT	-	40	-	-
PLASTICITY INDEX	-	22	-	-
AASHTO SOIL	-	A-6(10)	-	-
UNIFIED SOIL	-		-	-
% MOISTURE CONTENT	-	21.2	-	-
	-		-	-
	-		-	-
	-		-	-
	-		-	-
	-		-	-
	-		-	-
	-		-	-
	-		-	-
	-		-	-
	-		-	-

REMARKS - W=MULTIPLE LAYERS
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ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT - LITTLE ROCK, ARKANSAS
MATERIALS DIVISION

MICHAEL BENSON, MATERIALS ENGINEER

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

DATE	- 06/19/19	SEQUENCE NO.	- 1
JOB NUMBER	- 100834	MATERIAL CODE	- RV
FEDERAL AID NO.	- TO BE ASSIGNED	SPEC. YEAR	- 2014
PURPOSE	- SOIL SURVEY SAMPLE	SUPPLIER ID.	- 1
SPEC. REMARKS	- NO SPECIFICATION CHECK	COUNTY/STATE	- 47
SUPPLIER NAME	- STATE	DISTRICT NO.	- 10
NAME OF PROJECT	- DITCH AT L.M. 0.82 STR. & APPRS. (S)		
PROJECT ENGINEER	- NOT APPLICABLE		
PIT/QUARRY	- ARKANSAS		
LOCATION	- MISSISSIPPI COUNTY	DATE SAMPLED	- 04/24/19
SAMPLED BY	- FRAZIER	DATE RECEIVED	- 04/29/19
SAMPLE FROM	- TEST HOLE	DATE TESTED	- 06/19/19
MATERIAL DESC.	- SOIL SURVEY - RESISTANCE R-VALUE ACTUAL RESULTS		

LAB NUMBER	-	20191322	-	-
SAMPLE ID	-	RV332	-	-
TEST STATUS	-	INFORMATION ONLY	-	-
STATION	-	12+00	-	-
LOCATION	-	20 RT	-	-
DEPTH IN FEET	-	0-5	-	-
MAT'L COLOR	-	BROWN	-	-
MAT'L TYPE	-		-	-
LATITUDE DEG-MIN-SEC	-	35 52 19.60	-	-
LONGITUDE DEG-MIN-SEC	-	89 59 30.40	-	-
% PASSING	2	IN.	-	-
	1	1/2 IN.	-	-
		3/4 IN.	-	-
		3/8 IN.	-	-
		100	-	-
	NO. 4	99	-	-
	NO. 10	99	-	-
	NO. 40	96	-	-
	NO. 80	89	-	-
	NO. 200	85	-	-
LIQUID LIMIT	-	52	-	-
PLASTICITY INDEX	-	29	-	-
AASHTO SOIL	-	A-7-6(26)	-	-
UNIFIED SOIL	-		-	-
% MOISTURE CONTENT	-		-	-
	-		-	-
	-		-	-
	-		-	-
	-		-	-
	-		-	-
	-		-	-
	-		-	-
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REMARKS - W=MULTIPLE LAYERS
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AASHTO TESTS : T24 T88 T89 T90 T265
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