ARKANSAS DEPARTMENT OF TRANSPORTATION



STATE JOB NO.	BR1113	
FEDERAL AID PROJECT NO	STPB-0011(56)	
	WHITE WALNUT CREEK STR. & APPRS. NO.2 (S)	
COUNTY ROAD NO.	CR 76	
IN	CLAY	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

ARDOT.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

August 6, 2018

TO:

Mr. Claude Klink, State Aid Engineer

SUBJECT:

Job No. BR1113

White Walnut Creek. Str. & Apprs.

County Road 76 Clay County

Transmitted herewith is the requested Soil Survey, strength data and Resilient Modulus test results for the above referenced job. The project consists of replacing the bridge crossing White Walnut Creek on County Road 76. Samples were obtained in the existing travel lanes and ditch line. There were no paved shoulders within the project limits.

Based on laboratory results of samples obtained, the subgrade soils consist primarily of non-plastic sand. Cross-sections are not currently available, but it is assumed the construction grade line will closely match that of the existing roadway. The subgrade soils are expected to provide a stable working platform with conventional processing if the weather is favorable during construction.

Additional earthwork recommendations will be made upon request when plans are further developed and cross-sections become available.

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 Pocahontas.

2. Asphalt Concrete Hot Mix

Type	Asphalt Cement %	Mineral Aggregate %
Surface Course	5.2	94.8
Binder Course	4.1	95.9

MCB:pt:bjj Attachment

CC:

State Constr. Eng. - Master File Copy

District 10 Engineer

System Information and Research Div.

G. C. File

Michael C. Benson Materials Engineer

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

MICHAEL BENSON, MATERIALS ENGINEER *** SOIL SURVEY STRENGTH TEST REPORT ***

DATE - 07/24/2018

JOB NUMBER - BR1113

SEQUENCE NO. - 1

MATERIAL CODE - SSRV

SPEC. YEAR - 2014

SUPPLIER ID. - 1

COUNTY/STATE = 11

DISTRICT NO. - 10

JOB NAME - WHITE WALNUT CREEK STR. & APPRS. (S)

STATION LIMITS R-VALUE AT 240 psi ******************

> BEGIN JOB - END JOB 20

RESILIENT MODULUS

STA. 107 + 005961

REMARKS -

AASHTO TESTS : T190

ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT MATERIALS DIVISION

AASHTO T 307-99 - RESILIENT MODULUS OF SUBGRADE SOILS RECOMPACTED SAMPLES

Job No.	BR1113	Material Code	SSRVPS
Date Sampled:	5/8/18	Station No.:	107+00
Date Tested:	June 21, 2018	Location:	12'RT
Name of Project:	WHITE WALNUT CREEK STR. & APPRS. (S)	
County:	Code: 11 Name: CLAY		
Sampled By:	FRAZIER/BATES	Depth:	0-5
Lab No.:	20181086	AASHTO Class:	A-2-4 (0)
Sample ID:	RV255	Material Type (1 or	2): 2
LATITUDE:		LONGITUDE:	
1. Testing Inform	nation:		
	Preconditioning - Permanent Strain > 5% (\	Y=Yes or N= No)	N
	Testing - Permanent Strain > 5% (Y=Yes or	N=No)	N
	Number of Load Sequences Completed (0-1		15
2. Specimen Info	ormation:		
•	Specimen Diameter (in):		
	Тор		3.95
	Middle		3.95
	Bottom		3.95
	Average		3.95
	Membrane Thickness (in):		0.01
	Height of Specimen, Cap and Base (in)		8.02
	Height of Cap and Base (in):		0.00
	Initial Length, Lo (in):		8.02
	Initial Area, Ao (sq. in):		12.18
	Initial Volume, AoLo (cu. in):		97.68
3. Soil Specime	n Weight:		
	Weight of Wet Soil Used (g):		3216.20
4. Soil Propertie	s:		
	Optimum Moisture Content (%):		12.4
	Maximum Dry Density (pcf):		114.5
	95% of MDD (pcf):		108.8
	In-Situ Moisture Content (%):		N/A
5. Specimen Pro	operties:		
	Wet Weight (g):		3216.20
	Compaction Moisture content (%):		12.4
	Compaction Wet Density (pcf):		125.45
	Compaction Dry Density (pcf):		111.61
	Moisture Content After Mr Test (%):		12.2
6. Quick Shear T	est (Y=Yes, N=No, N/A=Not Applicable):		#VALUE!
7. Resilient Mod	aduo Afri	444	0/5~\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\
r. Nesment wou	uius, wii.	444	9(Sc)^0.04401(S3)^0.42968
8. Comments	·		
	9		
9. Tested By:	GW	Date: June 21, 2018	

ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT MATERIALS DIVISION

AASHTO T 307-99 - RESILIENT MODULUS OF SUBGRADE SOILS RECOMPACTED SAMPLES

AASHTO Class: A-2-4 (0)
Material Type (1 or 2): 2 SSRVPS 107+00 12'RT 0-5 **LONGITUDE:** Material Code Station No.: Location: Depth: WHITE WALNUT CREEK STR. & APPRS. (S) CLAY Name: FRAZIER/BATES Code: 11 June 21, 2018 20181086 BR1113 RV255 5/8/18 Name of Project: Date Sampled: Date Tested: Sampled By: LATITUDE: Sample ID: Lab No.: County: Job No.

	Chamber	Nominal	Actual	Actual	Actual	Actual	Actual	Actual	Average	Resilient	Resilient
	Confining	Maximum	Applied	Applied	Applied	Applied	Applied	Applied	Recov Def.	Strain	Modulus
PARAMETER	Pressure	Axial	Max. Axial	Cyclic Load	Contact	Max.	Cyclic	Contact	LVDT 1		
		Stress	Load		Load	Axial	Stress	Stress	and 2		
						Stress					
DESIGNATION	ဟိ	Scyclic	Р _{мах}	P _{cyclic}	Pcontact	S _{max}	Scyclic	Scontact	Havg	ယ်	Σ̈́
TINO	psi	psi	sql	sql	sql	psi	psi	psi	in	in/in	psi
Sequence 1	0.9	2.0	25.2	22.3	2.8	2.1	1.8	0.2	0.00143	0.00018	10,315
Sequence 2	0.9	4.0	47.6	44.7	2.9	3.9	3.7	0.2	0.00288	0.00036	10,242
Sequence 3	0.9	0.9	70.5	8.99	3.7	5.8	5.5	0.3	0.00427	0.00053	10,296
Sequence 4	0.9	8.0	95.0	88.8	6.2	7.8	7.3	0.5	0.00561	0.00070	10,430
Sequence 5	0.9	10.0	119.6	111.0	9.8	8.6	9.1	0.7	0.00685	0.00085	10,659
Sequence 6	4.0	2.0	24.9	22.0	2.8	2.0	1.8	0.2	0.00171	0.00021	8,482
Sequence 7	4.0	4.0	46.7	43.8	2.9	3.8	3.6	0.2	0.00347	0.00043	8,312
Sequence 8	4.0	0.9	9.89	65.7	5.9	5.6	5.4	0.2	0.00520	0.00065	8,307
Sednence 9	4.0	8.0	93.1	87.8	5.3	9.7	7.2	0.4	0.00673	0.00084	8,584
Sequence 10	4.0	10.0	117.1	109.4	7.7	9.6	9.0	9.0	0.00810	0.00101	8,898
Sequence 11	2.0	2.0	24.1	21.3	2.8	2.0	1.7	0.2	0.00228	0.00028	6,140
Sequence 12	2.0	4.0	44.8	45.0	2.8	3.7	3.4	0.2	0.00464	0.00058	5,961
Sequence 13	2.0	0.9	66.3	63.5	2.8	5.4	5.2	0.2	0.00660	0.00082	6,341
Sequence 14	2.0	8.0	89.2	84.9	4.3	7.3	7.0	0.4	0.00830	0.00104	6,734
Sequence 15	2.0	10.0	112.5	105.7	6.8	9.2	8.7	9.0	0.00982	0.00122	7,086

June 21, 2018	
DATE	DATE
GW	
TESTED BY	REVIEWED BY

ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT MATERIALS DIVISION

AASHTO T 307-99 - RESILIENT MODULUS OF SUBGRADE SOILS RECOMPACTED / THINWALL TUBE SAMPLES

Job No.

BR1113

Material Code SSRVPS

Date Sampled:

5/8/18

Station No.: 107+00

Date Tested:

June 21, 2018

Location: 12'RT

Name of Project: WHITE WALNUT CREEK STR. & APPRS. (S)

County:

Code: 11

Name: CLAY

Sampled By:

FRAZIER/BATES

Depth: 0-5

Lab No .:

20181086

AASHTO Class: A-2-4 (0)

Sample ID:

RV255

Material Type (1 or 2): 2

LATITUDE:

LONGITUDE:

$$M_R = K1 (S_C)^{K2} (S_3)^{K5}$$

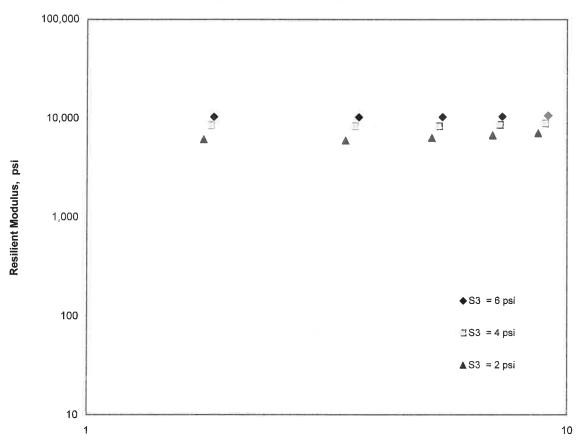
$$K1 = 4,449$$

$$K2 = 0.04401$$

$$K5 = 0.42968$$

$$R^2 = 0.97$$

Resilient Modulus QA Plot



Arkansas State Highway Transporation Department

JOB NAME: WHITE WALNUT CREEK STR. & APPRS. (S)

Materials Division

COUNTY NO. 11 **DATE TESTED** 5/22/2018

Michael Benson, Materials Engineer

STA.#	LOC.	DEPTH	COLOR	#4	#10	#40	#80	#200 E S -	L.L.	<i>P.I.</i>	SOIL CLASS	<i>LAB</i> #:	%MOISTURE
107+00	12 RT	0-5	BROWN	95	94	91	66	31	ND	NP	A-2-4(0)	RV255	
107+00	05 RT	0-5	BROWN	99	99	93	59	23	ND	NP	A-2-4(0)	S251	11.5
107+00	12 RT	0-5	BROWN	98	95	91	82	44	ND	NP	A-4(0)	S252	15.6
113+00	06 LT	0-5	BROWN	99	97	91	62	24	ND	NP	A-2-4(0)	S253	9
113+00	12 LT	0-5	BROWN	99	98	96	69	36	ND	NP	A-4(0)	S254	16.2

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

MICHAEL BENSON, MATERIALS ENGINEER *** SOIL SURVEY / PAVEMENT SOUNDING TEST REPORT ***

DATE - 05/22/1 JOB NUMBER - BR1113 FEDERAL AID NO TO BE A PURPOSE - SOIL SU SPEC. REMARKS - NO SPEC SUPPLIER NAME - STATE NAME OF PROJECT - WHITE PROJECT ENGINEER - NOT A PIT/QUARRY - ARKANSAS LOCATION - CLAY, COU SAMPLED BY - FRAZIER/CL SAMPLE FROM - TEST HOLE MATERIAL DESC SOIL SU	SSIGNED RVEY SAMPLE IFICATION CHECK WALNUT CREEK STR. & PPLICABLE NTY AY	£	SUPPLIER ID. COUNTY/STATE DISTRICT NO. DATE SAMPLED DATE RECEIVED DATE TESTED	- SSRVPS - 2014 - 1 - 11 - 10 - 05/08/18 - 05/10/18
LAB NUMBER SAMPLE ID TEST STATUS STATION LOCATION DEPTH IN FEET MAT'L COLOR MAT'L TYPE LATITUDE DEG-MIN-SEC LONGITUDE DEG-MIN-SEC PASSING 2 IN. 1 1/2 IN.	- 20181082 - \$251 - INFORMATION ONLY - 107+00 - 05 RT - 0-5 - BROWN - 36 12 54.20 - 90 17 26.20	- 20181083 - S252 - INFORMATIC - 107+00 - 12 RT - 0-5 - BROWN - 36 12	- 20181 - S253 ON ONLY - INFOR - 113+0 - 06 LT - 0-5 - BROWN	RMATION ONLY OO 1 12 54.40
3/4 IN. 3/8 IN. NO. 4 NO. 10 NO. 40	-	- 100 - 98 - 95 - 91 - 82 44	- 100 - 99 - 97 - 91 - 62 24	
PLASTICITY INDEX AASHTO SOIL UNIFIED SOIL % MOISTURE CONTENT	- NP - A-2-4(0) - 11.5	NP A-4(0) - 15.6	- NP - A-2-	-4(0) 9.0

REMARKS -

-

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 - 05/22/1 JOB NUMBER - BR1113 FEDERAL AID NO TO BE A PURPOSE - SOIL SU SPEC. REMARKS - NO SPEC SUPPLIER NAME - STATE NAME OF PROJECT - WHITE PROJECT ENGINEER - NOT A PIT/QUARRY - ARKANSAS	ASSI URVE CIFI C WA	APPRS. (S)	SEQUENCE NO 2 MATERIAL CODE - SSRVPS SPEC. YEAR - 2014 SUPPLIER ID 1 COUNTY/STATE - 11 DISTRICT NO 10	
LOCATION - CLAY, COU SAMPLED BY - FRAZIER/CI SAMPLE FROM - TEST HOLE MATERIAL DESC SOIL SU	LAY		EMENT SOUNDING	DATE SAMPLED - 05/08/18 DATE RECEIVED - 05/10/18 DATE TESTED - 05/22/18 GS
LAB NUMBER	_		_	-
SAMPLE ID	_	20181085 S254		_
TEST STATUS			-	
STATION		113+00	·-	_
LOCATION		12 LT	. 	-
DEPTH IN FEET		0-5	=	-
MAT'L COLOR		BROWN	= =	-
MAT'L TYPE	_	DITOWIT	i i ii	-
LATITUDE DEG-MIN-SEC	_	36 12 54 50	## ##	_
LONGITUDE DEG-MIN-SEC			<u>2</u> =	
% PASSING 2 IN.	_			_
1 1/2 IN.	_		:#	_
3/4 IN.	_		1. 101	-
3/8 IN.	_	100		_
NO. 4	_	99	=	_
NO. 10	_	98	-	
NO. 40	-	96	~	_
NO. 80	_	69	=	-
NO. 200	-	36		
LIQUID LIMIT	_	ND	_	æ.
PLASTICITY INDEX	-	NP	-	<u> </u>
AASHTO SOIL	_	A-4 (0)	_	-
UNIFIED SOIL	_		-	= :
% MOISTURE CONTENT	_	16.2	_	-
	_		-	=
	-		-	Table Table Table
	-		_	<u>~</u>
	-		-	-
	_		_	
	_		_	
	_		_	-
	-		_	=
	-		-	₩.

REMARKS -

22 22 23

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 - 05/22/3 JOB NUMBER - BR1113 FEDERAL AID NO TO BE A PURPOSE - SOIL SO SPEC. REMARKS - NO SPEC SUPPLIER NAME - STATE NAME OF PROJECT - WHITE PROJECT ENGINEER - NOT A PIT/QUARRY - ARKANSAS LOCATION - CLAY, COU SAMPLED BY - FRAZIER/CS SAMPLE FROM - TEST HOLE	ASSI JRVE CIFI E WA APPI JNTY LAY	Y SAMPLE CATION CHECK LINUT CREEK STR. & ICABLE		DATE SAMPLED - DATE RECEIVED - DATE TESTED -	RV 2014 1 1 1 1 1 1 1 0 - 05/08/18
MATERIAL DESC SOIL S	URVI	EY - RESISTANCE R-	VALUE ACTUAL	RESULTS	
LAB NUMBER	_	20181086	= }	-	
SAMPLE ID	_		<u>=</u>	_	
TEST STATUS	_	INFORMATION ONLY	-	-	
STATION	_	107+00	5 5	-	
LOCATION	_	12 RT	≅ (-	
DEPTH IN FEET	_	0-5	4	_	
MAT'L COLOR	_	BROWN	-	_	
MAT'L TYPE	-		=	_	
LATITUDE DEG-MIN-SEC		36 12 54.10	=	-	
LONGITUDE DEG-MIN-SEC	_	90 17 26.20			
% PASSING 2 IN.	-	'	-	-	
1 1/2 IN.	-		-	=	
3/4 IN.	-	100	-	3	
3/8 IN.	-	95	_	-	
NO. 4	-	95	_	-	
NO. 10		94	_	=	
NO. 40		91	_	=	
NO. 80		66	-	(40)	
NO. 200	-	31			
LIQUID LIMIT	_	ND	- 2	**	
PLASTICITY INDEX	_	NP	= 0	=	
AASHTO SOIL	-	A-2-4(0)	— 6:	<u>→</u>	
UNIFIED SOIL	_		-	(2) 223	
% MOISTURE CONTENT	_		.=:	25	
	_		_	_	
	-		_	_	
	-		_	_	
	-		-	-	
	_		_	-	
	_		_	<u>-</u> -	
	_		_	_	
	-		-	-	
	-		-	-	

REMARKS -

84 84

AASHTO TESTS : T24 T88 T89 T90 T265