ARKANSAS DEPARTMENT OF TRANSPORTATION



SUBSURFACE INVESTIGATION

STATE JOB NO.		CA0705	
FEDERAL AID PROJE	CT NO	ACNHPP-0014(28)	
	CO. RD. 2	27 – HWY. 79 (WIDENING) (S	S)
STATE HIGHWAY	82	SECTION	3
IN		COLUMBIA	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

November 17, 2016.

TO:

Mr. Rick Ellis, Bridge Engineer

SUBJECT:

Job No. CA0705

Hwy. 98 - Hwy. 79 (Widening) (S)

Route 82 Section 3 Columbia County

Transmitted herewith are a brief summary of the geology and site conditions, D50 analysis test results, and the logs of the borings conducted for the structures 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 to confirm the field identifications.

Preliminary design submitted by Bridge Division indicates that all bents will be founded on piling. Three intermediate bent footings, east of Big Creek, were inaccessible due to high water present during drilling. Subsurface conditions do not vary widely across the site.

A slope stability analysis was performed for this project, utilizing 2:1 bridge end slopes. Seismic analysis included a coefficient of horizontal acceleration of 0.085 as provided by Bridge Design. This configuration provides for a satisfactory Factor of Safety for seismic and static conditions.

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 7 Engineer

G.C. File

GEOLOGY AND SITE CONDITIONS Job No. CA0705

Hwy 98 - Hwy. 79 (Widening) (S) Columbia County Route 82 Section 3

Site Conditions

The proposed bridge is to cross over Big Creek on Hwy 82. The existing bridge is a twelve span structure constructed of concrete deck, supported by concrete octagonal trestle pilings and caps. The guardrail is constructed of metal pipe on the bridge and metal guardrail held up by metal posts leading up to the bridge. A buried telecommunication parallels the right side of the roadway. The stream flows to the south and is located primarily under span 7. The areas north and south of the bridge are moderately to heavily wooded.

Site Geology

The project alignment is located over alluvial deposits, mapped as Qal on geologic maps. Alluvial deposits are typically composed of gravels, sands, silts, clays, and mixtures of any and all of these. The alluvial deposits encountered at the job site consist of loose to dense, brown clayey sand, silty sand, sand, and soft, clay with sand. The alluvial deposits are located over the Claiborne Group of Paleogene age.

The Claiborne is composed of unconsolidated, medium to very-fine sands, silts, and silty clays. This unit also contains lignite beds. The Claiborne has been divided into, from oldest to youngest, the Carrizo Sand, Cane River Formation, Sparta Sand, Cook Mountain Formation, and Cockfield Formation. The thickness of the Claiborne ranges from a thin edge to as much as 1,500 feet. The Claiborne deposits are encountered from approximately 20 to approximately 35 feet below ground level (elevation of 231.2 to 237 feet above MSL). The contact between the alluvial deposits and the Claiborne Group is an erosional surface. Due to the erosion, the elevation of the contact can potentially be quite variable even between adjacent borings.

A persistent cemented layer was encountered in all borings with an average thickness of 0.7 feet. This layer was encountered at depths ranging from 38.1 to 52.5 feet below ground level (elevation 213.7 to 219.7 feet above MSL). This layer has an apparent dip of 0.8° from boring 1 to boring 5. Only one split spoon sample was attempted in this cemented layer, resulting in split spoon refusal without penetration.

Subsurface Conditions

Based on the results of the borings, the subsurface stratigraphy may be generalized as follows:

0 to 8.8 Feet:

Consists of moist to wet, loose to dense, brown silty sand to sandy silt to sand with clay. Some samples from this zone contain some organic matter.

8.8 to 20 Feet:

Varies from moist to wet, loose to medium dense, gray silty sand to sand to soft to stiff, brown sandy clay. Some samples from this zone contain some organic matter.

20 to 35 Feet:

Varies from moist to wet, loose to dense, gray silty sand to clayey sandy to stiff to hard, gray sandy clay.

35 to 53.3 Feet:

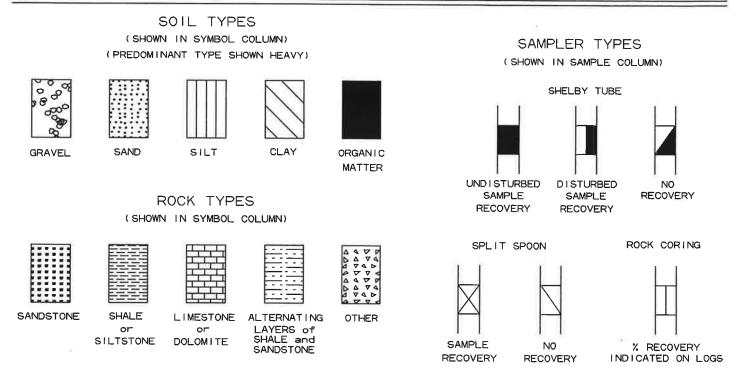
Varies from moist, dense to very dense, gray clayey sand to silty sand to sandy silt to very stiff to very hard, gray clay with sand. A 0.6 to 1.0 foot thick cemented sand layer occurs in this zone.

53.3 to 101.5 Feet: Varies from moist, dense to very dense, gray silt to silty sand to hard to very hard, gray clay to silty clay. Some samples in this zone contain some lignite. One boring encountered cemented sand 0.4 feet thick at 78 feet bal.

D₅₀ AGGREGATE ANALYSIS FOR SCOUR CALCULATIONS

		Job No.	CA0705		
Creek Name	Station	Sample Type	Location	Depth (FT)	Aggregate Size (D50) (IN)
Big Creek	491+31	Creek Bank	53' Rt. of Construction C.L.	N/A	0.0035

LEGEND



TERMS DESCRIBING CONSISTENCY OR CONDITION

GRANU	LAR SOIL		CLAY	CLA	Y-SHALE	\$	SHALE
"N" Value	Density	Nº Value	Consistency	N' Value	Consistency	'N' Value	Consistency
0-4 5-10 11-30 31-50 0ver 50	Very Loose Loose Medium Dense Dense Very Dense	0-1 2-4 5-8 9-15 16-30 31-60 0ver 60	Very Soft Soft Medium Stiff Stiff Very Stiff Hard Very Hard	0-1 2-4 5-8 9-15 16-30 31-60 Over 60	Very Soft Soft Medium Stiff Stiff Very Stiff Hard Very Hard	More than Penetrati	on wsı Medium Haro 2' on

- 1. Ground water elevations indicated on boring logs represent ground water elevations at date or time shown on boring log. Absence of water surface implies that no ground water data is available but does not necessarily mean that ground water will not be encountered at locations or within the vertical reaches of these borings.
- 2. Borings represent subsurface conditions at their respective locations for their respective depths. Variations in conditions between or adjacent to boring locations may be encountered.
- 3. Terms used for describing soils according to their texture or grain size distribution are in accordance with the Unified Soil Classification System.

Standard Penetration Test – Driving a 2.0" O.D., 1-3/8" I.D. sampler a distance of 1.0 foot into undisturbed soil with a 140 pound hammer free falling a distance of 30 inches. It is customary to drive the spoon 6.0 inches to seat into undisturbed soil, then perform the test. The number of hammer blows for seating the spoon and performing the test are recorded for each 6 inches of penetration on the drill log. The field "N" Value (N_f) can be obtained by

adding the bottom two numbers for example: $\frac{6}{8-9} \Rightarrow 8+9=17 blows / ft$. The "N" Value corrected to 60% efficiency (N₆₀) can be obtained by multiplying N_f by the hammer correction factor published on the boring log.

DOB NO. CA0705 Columbia County DATE: October 25 and 26, 2016 TYPE OF BRILLING: Hollow Stem Auger - Diamond Core Equipment: CME 750				HWY. & TRANS. DEPARTMENT DIVISION - GEOTECHNICAL SEC.		BORI PAGE		NO. 1	OF 3					
Route 82 Section 3 STATION: 489+33 LOCATION: 37' Right of Construction Centerline LOGGED BY: Troy Frazier CME 750 IMAMMER CORRECTION FACTOR: 1.23 LOCATION: 1.23 DESCRIPTION OF MATERIAL PY M M DESCRIPTION OF MATERIAL PT B D L S S S P M D DESCRIPTION OF MATERIAL PT L S SURFACE ELEVATION: 261.2 Moist, Medium Dense, Brown Sandy Silt with Some Organic Matter Wet, Loose, Brown Silty Sand Wet, Loose, Brown Silty Sand with Some Gravel Wet, Medium Dense, Gray Silty Sand with Some Gravel Moist, Hard, Gray Sandy Clay	-		_			_	_				and 2	6, 20)16	\neg
### STATION: 489+33 LOCATION: 37 Right of Construction Centerline LOCATION: 123 **COMPLETION DEPTH: 100.9 **Description Of MATERIAL GROUP PROBLEM SOIL	JOB NA	ME:		Hwy. 98 - Hwy. 79 (Widening)(S)		TYPE	OF D	RILLIN	G:					- 1
LOCATION 37 Right of Construction Centerline LOGGED BY: Troy Frazzior 1.23	1					Но	llow	Stem	Aug				Core	- 1
LOGGED BY: Troy Frazier HAMMER CORRECTION FACTOR: 1.23						EQUIE	MEN	T:		C.	ME 7	50		- 1
COMPLETION DEPTH: 100.9				-									1.00	
DESCRIPTION OF MATERIAL SOIL FT. L S SURFACE ELEVATION: 261.2 Moist, Medium Dense, Brown Sandy Silt with Some Organic Matter Most, Stiff, Brown Sandy Clay Wet, Loose, Brown Silty Sand Wet, Medium Dense, Brown Sand with Silt Wet, Medium Dense, Gray Silty Sand with Some Gravel Moist, Hard, Gray Sandy Clay Moist, Hard, Gray Sandy Clay						HAM	ÆR (CORRE	CTION	V FAC	CTOR:	_	1.23	-
E P Y M P T B O L E FT. L S SURFACE ELEVATION: 261.2 Moist, Stiff, Brown Sandy Clay Moist, Stiff, Brown Sandy Clay Moth Loose, Brown Silty Sand Wet, Loose, Brown Silty Sand with Silt Wet, Medium Dense, Gray Silty Sand with Some Gravel Moist, Hard, Gray Sandy Clay Moist, Hard, Gray Sandy Clay		LEI		DEPTH: 100.9	I									\dashv
Moist, Medium Dense, Brown Sandy Silt with Some Organic Matter Moist, Stiff, Brown Sandy Clay Moist, Stiff, Brown Sandy Clay Wet, Loose, Brown Silty Sand Wet, Medium Dense, Brown Sand with Silt Wet, Medium Dense, Gray Silty Sand with Some Gravel Moist, Hard, Gray Sandy Clay Moist, Hard, Gray Sandy Clay	E P T H	Y M B O	AMPLE			PLASTIC JIMIT	% MOIST,	JQUID	ORY WEIGHT	BS PER CU.FT.	NO. OF BLOWS	ER 6-IN.	T C	R Q
Some Organic Matter 9-10 Moist, Stiff, Brown Sandy Clay Moist, Stiff, Brown Sandy Clay Wet, Loose, Brown Silty Sand Wet, Medium Dense, Brown Sand with Silt Wet, Medium Dense, Gray Silty Sand with Some Gravel Moist, Hard, Gray Sandy Clay Moist, Hard, Gray Sandy Clay	1	1:1:1:	$\overset{\smile}{\dashv}$	SON AGE ELEVATION. 201.2			0					<u></u>	-	\dashv
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JOB N			CA0705 Columbia County		DATE	_				and 1	9 2	01	
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STAT	ION·		489+87		EQUIF			1145		ME 7	-	4511	
LOCA			41' Right of Construction Centerline		Local	IVILIA	1.			14112 /	20		
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			V DEPTH: 101.5		111 1111	, abre c	ord E	STIGI	1710	31010.		1.25	
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			Moist, Hard, Gray Clay with Sand					ľ		14-	18		
			Cemented Sand (38.1'-38.7')									- [
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REMA	ARKS	: V	Vater was encountered at 9.0 feet below ground le	vel.									

	HWY. & TRANS. DEPARTMENT S DIVISION - GEOTECHNICAL SEC.	BORING NO. 2 PAGE 3 OF 3
JOB NO. JOB NAME:	CA0705 Columbia County Hwy. 98 - Hwy. 79 (Widening)(S) Route 82 Section 3	DATE: October 18 and 19, 201 TYPE OF DRILLING: Hollow Stem Auger - Rotary Wash
STATION: LOCATION: LOGGED BY:	489+87 41' Right of Construction Centerline Troy Frazier	EQUIPMENT: CME 750 HAMMER CORRECTION FACTOR: 1.23
	N DEPTH: 101.5	•
E P M B O	DESCRIPTION OF MATERIAL SOI GRO SURFACE ELEVATION: 256.8	PLASTIC LIMIT % MOIST, LIQUID LIMIT DRY WEIGHT LBS PER CU.FT, NO. OF BLOWS PER 6-IN. \[A C A B C B C B C B B C B
75	Moist, Hard, Gray Sandy Clay	14 25-35 18 27-32
80	Cemented Sand (78.0'-78.4') Moist, Hard, Gray Silty Clay	16 22-31
90	Moist, Dense, Gray Silty Sand	13 20-28
95	Moist, Very Dense, Gray Silty Sand	20 60 (5") 20 58-60 (7")
	Moist, Dense, Gray Silty Sand Boring Terminated	13 18-26
105 REMARKS:	Water was encountered at 9.0 feet below ground level.	I.

			HWY. & TRANS. DEPARTMENT DIVISION - GEOTECHNICAL SEC.		BORI PAGE		NO. 3	OF 3					
JOB N			CA0705 Columbia County		DATE					and 1	8, 20	016	
JOB N	AME:		Hwy. 98 - Hwy. 79 (Widening)(S)		TYPE	OF D	RILLIN	G:					
1			Route 82 Section 3		Ho	llow	Stem	Aug	er - 1	Diam	ond	Core	
STATI	ION:		490+43		EQUIE	PMEN	T:		C	ME 7	750		
LOCA			47' Right of Construction Centerline										
			roy Frazier		HAMN	MER (CORRE	CTION	N FAC	CTOR:		1.23	
COM	PLET		DEPTH: 101.5			-	r	-			_		
D E P T H	SYMBOL	のAMPLEの	DESCRIPTION OF MATERIAL	SOIL GROUP	PLASTIC LIMIT	% MOIST.	LIQUID LIMIT	DRY WEIGHT	LBS PER CU.FT.	NO. OF BLOWS	PER 6-IN.	% T C R	% R Q D
FIG	1.7.7.7	3	SURFACE ELEVATION: 256.1			%		Ω		ž	<u> </u>		
5		X	Moist, Loose, Light Brown Sand with Clay							1 2-	4		
		X	Wet, Loose, Light Brown Silty Sand							3-:			
		X	Wet, Medium Dense, Brown Sand with Some Organic (Wood)							6-			
		\bigvee	Wet, Medium Dense, Brown Sand with Some							3			
			Gravel Moist, Stiff, Gray Sandy Clay							3-	8		
30		X	Moist, Very Stiff, Gray Sandy Clay							11-			
35		X	Moist, Hard, Gray Sandy Clay							7 15-2			
REMA	ARKS	:											

			HWY. & TRANS. DEPARTMENT DIVISION - GEOTECHNICAL SEC.		BORI PAGE		NO. 3	OF 3					
JOB N			CA0705 Columbia County		DATE					and 18	3, 20)16	\neg
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STAT	ION:		490+43		EQUI			ی		ME 7			
LOCA	TION:		47' Right of Construction Centerline										- 1
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COM	PLET	ION	I DEPTH: 101.5										
D E P T H	S Y M B O	SAMPL	DESCRIPTION OF MATERIAL	SOIL GROUP	ric	IST,	D.	DRY WEIGHT	LBS PER CU.FT.	NO. OF BLOWS	-IN.	% T C R	% R Q D
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		X	Moist, Hard, Gray Clay with Sand		P	0	H	Н	I	6 13-1			
			Cemented Sand (38.4'-39.1')										
40		X	Moist, Hard, Gray Clay with Sand							13 19-2	24		
50		X	Moist, Very Dense, Gray Sandy Silt with Trace Lignite							10 25-5			
		X	Moist, Dense, Gray Sandy Silt							11 18-2			
60		X	Moist, Very Dense, Gray Sandy Silt							19 21-5			
		X	Moist, Hard, Gray Clay with Some Sand							13 18-2	2.7		
70		X	Moist, Dense, Gray Silt							13 17-3			
REM	ARKS	:											

	OIL	Hol EQUIP	OF DI low MEN	Oct RILLING Stem	G: Auge	12 a er - 1 C	ME 7	ond C		
JOB NAME: Hwy. 98 - Hwy. 79 (Widening)(S) Route 82 Section 3 STATION: 490+43 LOCATION: 47' Right of Construction Centerline LOGGED BY: Troy Frazier COMPLETION DEPTH: 101.5 D S E Y M P M T B L C B D DESCRIPTION OF MATERIAL GE GE	OIL	Hol EQUIP	low MEN	RILLIN Stem T:	G: Auge	er - l C	Diamo ME 7	ond C		
STATION: 490+43 LOCATION: 47' Right of Construction Centerline LOGGED BY: Troy Frazier COMPLETION DEPTH: 101.5 D S S S S S S S S S S S S S S S S S S	OIL	EQUIP	MEN	Т:		C	ME 7		ore	
LOCATION: 47' Right of Construction Centerline LOGGED BY: Troy Frazier COMPLETION DEPTH: 101.5 D S S S S S S S S S S S S S S S S S S	OIL				CTION			50		
LOGGED BY: Troy Frazier COMPLETION DEPTH: 101.5 D S S S S S S S S S S S S S S S S S S	OIL	HAMM	ŒR C	ORREC	CTION	I FAC	CTOR:			
COMPLETION DEPTH: 101.5 D	OIL	HAMM	IER C	ORREC	CTION	I FAC	CTOR:			
D S S A P M M P DESCRIPTION OF MATERIAL SC GF									.23	_
E Y A M M P DESCRIPTION OF MATERIAL SC GF									_	_
T B P L GF					TT	J.FT.	SM(% T	9/ F
		PLASTIC LIMIT	% MOIST.	LIQUID LIMIT	DRY WEIGHT	LBS PER CU.FT	NO. OF BLOWS		C R	Ĺ
AXX /		PL/ LIN	W N	CIN	DR	LB	NO	PE		
Moist, Hard, Gray Sandy Clay					1		13 25-2	8		
Moist, Hard, Gray Clay with Sand							20 25-3	0		
Moist, Hard, Gray Sandy Clay							16 20-2			
No Sample - Driller Error										
95 Moist, Very Dense, Gray Silty Sand							30 60 (5") 14 40-6 (10'	(0)		
- <u>- </u>							20-3	1	_	_
Boring Terminated										
105 REMARKS:										_

			HWY. & TRANS. DEPARTMENT DIVISION - GEOTECHNICAL SEC.		BORI PAGE		NO. 4	OF 3					
JOB N			CA0705 Columbia County		DATE	_				and 1	2, 20	016	
JOB N	AME:		Hwy. 98 - Hwy. 79 (Widening)(S)				RILLIN						
			Route 82 Section 3				Stem	Aug			-	ash	
STATI			491+05 63' Right of Construction Centerline		EQUII	PMEN	T:		C	ME 7	/50		
			roy Frazier		HAMN	MER (CORRE	CTION	V FAC	CTOR:		1.23	
			J DEPTH: 101.5										
D E P T H	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	SOIL GROUP	PLASTIC LIMIT	% MOIST.	LIQUID LIMIT	DRY WEIGHT	LBS PER CU.FT.	NO. OF BLOWS	PER 6-IN.	% T C R	% R Q D
FT,	111111111111	S	SURFACE ELEVATION: 257.0		<u> </u>	%	33		<u> </u>	ž	E.		_
5		X	Moist, Medium Dense, Light Brown Silty Sand with Some Organic Matter							8-	8		
10		X	Wet, Loose, Light Brown Sand with Some Organic Matter							2-			
		X	Wet, Medium Dense, Brown Sand with Trace Gravel		R					8-	8		
		X	Moist, Very Stiff, Gray Sandy Clay							9-1	13		
30		X	Moist, Dense, Gray Clayey Sand with Gravel							16-	22		
35		X	Moist, Dense, Gray Sand with Clay							17-			
REMA	ARKS	:											

			HWY. & TRANS. DEPARTMENT DIVISION - GEOTECHNICAL SEC.		BORI PAGE		NO. 4)F 3					
JOB N			CA0705 Columbia County Hwy. 98 - Hwy. 79 (Widening)(S)		DATE:	OF D	Oct RILLIN	tober G:	11 a	and 1			
STAT	ION:		Route 82 Section 3 491+05		Ho.		Stem T:	Aug		Rotar _. ME 7	-	ash	
	TION:		63' Right of Construction Centerline roy Frazier		11 A N (I)	arn (CORREC	TTION	I E A C	TOD.		1.23	
			DEPTH: 101.5		HAIVI	VIER (OKKE	o HOI	YIAC	JIOK.		1.23	
D E P T H	S Y M B	SAMPLH	DESCRIPTION OF MATERIAL	SOIL GROUP	PLASTIC LIMIT	% MOIST.	LIQUID LIMIT	DRY WEIGHT	LBS PER CU.FT.	NO. OF BLOWS	PER 6-IN.	% T C R	% R Q D
FT.	L		SURFACE ELEVATION: 257.0		PLA LIM	M %	LIQ	DRY	LBS		$\overline{}$		
		X	Moist, Dense, Gray Clayey Sand							8 20-2			
		>==	Moist, Very Hard, Brown Clay with Sand Cemented Sand (40.2'-41.2')					k I		60 (2"			
45		X	Moist, Very Dense, Gray Silty Sand							13 30-4 13 33-4	3 40		
55		X	Moist, Dense, Gray Clayey Sand							12 20-3	30		
		X	Moist, Hard, Brown Clay							13 20-3	30		
70 REM	ARKS									18-3	30		

			IWY. & TRANS. DEPARTMENT DIVISION - GEOTECHNICAL SEC.		BORI PAGI		NO. 4	OF 3				
JOB N			CA0705 Columbia County		DATE					and 12, 2	016	
JOB N	AME:	1	Hwy. 98 - Hwy. 79 (Widening)(S)		TYPE	OF D	RILLIN	G:				- 1
		1	Route 82 Section 3		Но	llow	Stem	Aug	er -]	Rotary W	ash	- 1
STATI	ION:	4	491+05		EQUIE	PMEN	T:		C	ME 750		- 1
LOCA			63' Right of Construction Centerline									ı
			roy Frazier		HAM	ΛER (CORRE	CTION	V FAC	CTOR:	1.23	_
COM	PLET		DEPTH: 101.5				_		_			_
D E P T H	S Y M B	S A M P	DESCRIPTION OF MATERIAL	SOIL GROUP	S	.T.	LIQUID	EIGHT	LBS PER CU.FT.	NO. OF BLOWS PER 6-IN.	% T C	% R Q
FT.	O L	L E S	SURFACE ELEVATION: 257.0		PLASTIC LIMIT	% MOIST.	LIQUID	DRY W	LBS PE	NO. OF BI PER 6-IN.	R	D
75 		X X X X	Moist, Hard, Gray Silty Clay Moist, Hard, Silty Clay with Trace Lignite Moist, Hard, Gray Silty Clay Moist, Very Dense, Gray Silty Sand Moist, Very Dense, Gray Silty Sand with Some Lignite							14 23-37 16 28-32 13 22-28 16 22-32 18 44-60 (8")		
		X	Roring Terminated							17 40-30		
105 REM	ARKS	:	Boring Terminated									
		o .			1.0							

MATERIAL	S HWY. & TRANS. DEPARTMENT S DIVISION - GEOTECHNICAL SEC.		PAGE		10. 5)F 3					
IOB NO.	CA0705 Columbia County			_	tober			Vover	nber	1, 20)16
JOB NAME:	Hwy. 98 - Hwy. 79 (Widening)(S)				RILLIN						
	Route 82 Section 3				Stem	Aug				ash	
STATION:	493+70		EQUIPMENT: CME 750								
LOCATION:	•									1 00	
	Troy Frazier		HAMN	AER (CORRE	CTION	V FAC	TOR:		1.23	_
	ON DEPTH: 101.5	1			r	_					_
E P M B O	S A A M DESCRIPTION OF MATERIAL D C C C C C C C C C	SOIL GROUP	IIC	IST.	Q	DRY WEIGHT	LBS PER CU.FT.	NO. OF BLOWS	·IN.	% T C R	9,] ((
1 . 1	E S SURFACE ELEVATION: 266.2		PLASTIC LIMIT	% MOIST.	LIQUID	DRY V	LBS P	NO. 0	PER 6-IN.		
5	Moist, Dense, Gray Silty Sand							9 19-			
10	Wet, Soft, Gray Clay with Sand and Some Organic Matter (Wood)							1-			
	Wet, Loose, Gray Silty Sand							2-2-	6		
	Wet, Medium Dense, Light Brown Sand							6-	6		
	Wet, Loose, Gray Sand							4-			
	Wet, Medium Dense, Brown Clayey Sand							10-			

			HWY. & TRANS. DEPARTMENT DIVISION - GEOTECHNICAL SEC.		BORI PAGE		NO. 5	OF 3					
JOB N			CA0705 Columbia County		_		ctober			lover	nher	1. 20)16
JOB N			Hwy. 98 - Hwy. 79 (Widening)(S)				RILLIN		1	,,,,,,		-, -	
1			Route 82 Section 3		Ho	llow	Stem	Aug	er -	Rotar	уW	ash	
STATI	ON:		493+70		EQUIE	MEN	T:		С	ME 7	750		
LOCA'			13' Right of Construction Centerline										
			roy Frazier		HAMN	MER (CORRE	CTION	V FA	CTOR:		1.23	
		$\overline{}$	DEPTH: 101.5										
D E	S	S A											
P	Y M	М	DESCRIPTION OF MATERIAL	SOIL				Ħ	FT.	W.S		% T	% R
I	В	Р	BESOM HOW OF WATERWAY	GROUP	()	T.		EIGE	CC	BLO	<u>.</u>		Q
H	0	L			STI	OIS		M. W.	PEF	OF]	-9	R	D
FT.	L		SURFACE ELEVATION: 266.2		PLASTIC LIMIT	% MOIST.	LIQUID	DRY WEIGHT	LBS PER CU.FT	NO. OF BLOWS	PER 6-IN.		
		∇								8			
	$\setminus \setminus$	\triangle								10-	16		
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	//												
40	$\langle \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \$												
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	$\backslash \backslash$	\hookrightarrow	Mariah Maria Okiff ta Harri Duanna and Onco.							12-	''		
	$\backslash \backslash$		Moist, Very Stiff to Hard, Brown and Gray Sandy Clay								-		
	$\setminus \setminus$		Carray Clay										
45										_	-		
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		\hookrightarrow								.0			
		Ĭ											
	$\setminus \setminus$							ľ			- 1		
50										11	. 1		
	m	X	Moist, Hard, Dark Brown Silty Clay							17-	-		
	Ш												
	777		Cemented Sand (52.5'-53.3')										
55													
-33		∇								11			
		\triangle	Moist, Dense, Dark Brown Sandy Silt with							17-	22		
			Some Lignite										
60										-			
J										17			
		\triangle								34-	60		
			Moist, Very Dense, Gray Sandy Silt with Trace										
			Lignite										
65													
		\bigvee								15			
		4								22-	טט		
			Moist, Very Dense, Gray Sandy Silt										
70										II.			
REMA	ARKS	:											
		_											

	S HWY. & TRANS. DEPARTMENT S DIVISION - GEOTECHNICAL SEC.		PAGE		NO. 5)F 3					
JOB NO.	CA0705 Columbia County		DATE:	0	ctober	31 a		loven	ber 1	1, 20	16
JOB NAME:	Hwy. 98 - Hwy. 79 (Widening)(S)				RILLIN						
	Route 82 Section 3				Stem	Aug				sh	
STATION:	493+70		EQUI	PMEN	T:		С	ME 7	50		
LOCATION:	13' Right of Construction Centerline			mp.	20000	OTT O		OTTO D	1	.23	
	Troy Frazier ON DEPTH: 101.5		HAMI	ZER (CORRE	CHOI	NTAC	JIOK:		.25	_
			_						T		_
- 0											
PIJI	DESCRIPTION OF MATERIAL	SOIL				<u> </u>	FT.	WS		% T	9
' _R '		GROUP	()	J.		IGF	CC	3TO		C	(
$H \cap I$	<u> </u>	1	STIC	OIS		🕺	PEF	OF I	-9 	R	1
	S SURFACE ELEVATION: 266.2		PLASTIC LIMIT	% MOIST.	LIQUID LIMIT)RY	LBS PER CU.FT	NO. OF BLOWS	PER 6-IN.		
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$-\sqrt{M}$	Moist, Very Hard, Dark Brown and Gray Silty										
— - JMN	Clay										
75											
11		1						15			
- 7 <u>/</u> /								17-2	26		
//	Moist, Hard, Dark Brown Clay								1		
80										ı	
								22 50-6			
_]								(11)	")	- 1	
	Moist, Very Dense, Gray Silt	ŀ									
									1	1	
85		4						18			
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-M									- 10		
90	Moist, Hard, Brown and Gray Silty Clay							18			
— - (1111)								23-2		- 1	
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— - 											
95	 	1						16			
								22-3	30		
	Moist, Very Dense, Gray Sandy Silt										
	Wolst, Very Bonse, Gray Garay Ont										
100											
100 1111	Moist, Hard, Dark Gray Clay							14			
>			-					22-3	53	_	
	Boring Terminated										
105											
REMARKS:											

ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT

December 22, 2015

TO:

Mr. Trinity Smith, Engineer of Roadway Design

SUBJECT:

CA0705

Hwy. 98 - Hwy. 79 (Widening) (S)

Route 82 Section 3
Columbia County

Transmitted herewith are the requested Soil Survey, Strength Data, and Resilient Modulus test results for the above referenced job. The project consists of widening approximately 5.5 miles of Highway 82 from two lanes to five lanes. Samples were obtained in the existing travel lanes, shoulder and ditch line.

Based on laboratory results of samples obtained, the subgrade soils consist primarily of low plasticity sand with some clay. The proposed construction grade line closely matches 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. If soil remediation is needed to allow construction to proceed during adverse weather conditions or if a stable working platform cannot be obtained with normal drying and compactive effort, stabilization with Portland Cement is the most appropriate remediation technique. It is recommended that the addition of 9% Portland Cement (by dry weight) mixed to a depth of 12 inches be used for soil stabilization quantity estimation purposes; however, if the Engineer determines that stabilization is necessary, field trials or local experience may dictate that a stable working platform can be achieved at a lower cement content.

Based on currently available cross-sections the maximum embankment height is approximately 15 feet. Locally available unspecified material may be used to construct the embankments utilizing a 3:1 slope configuration. The proposed 3:1 cut slopes are acceptable as shown in the cross-sections.

There is a pond in the vicinity of station 645+00, approximately 60 feet left of centerline and is within the construction limits. The pond should be drained prior to embankment construction. The pond area where embankment will be placed should be undercut 2' and replaced with Stone Backfill.

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 Jones Mill.

2. Asphalt Concrete Hot Mix

Type	Asphalt Cement %	Mineral Aggregate %
Surface Course	5.3	94.7
Binder Course	4.3	95.7
Base Course	4.0	96.0

Michael C. Benson Materials Engineer

MCB:pt:bjj Attachment

State Constr. Eng. – Master File Copy District 7 Engineer CC:

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 - 12/	07/2015	SEQUENCE NO.	- 1
JOB NUMBER - CAO		MATERIAL CODE	- SSRVPS
		SPEC. YEAR	= 2014
		SUPPLIER ID.	= 1
		COUNTY/STATE	- 14
		DISTRICT NO.	- 07
JOB NAME - HWY.9	8 - HWY.79 (WIDENING) (S)		
******	*********	*******	*****
*	STATION LIMITS	R-VALUE AT 240 psi	*
******	********	*******	*****
	BEGIN JOB - END JOB	18	
	RESILIENT MODULUS		
	379+00	5852	
	462+00	7676	
	610+00	9466	

9458

REMARKS -

-

AASHTO TESTS : T190

656+00

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

Job No. Date Sampled: Date Tested: Name of Project:	CA0705 12/03/15 December 3, 2015 HWY.98 - HWY.79(WIDENING)(S)	Material Code Station No.: Location:	SSRVPS 379+00 27'RT
County: Sampled By: Lab No.: Sample ID: LATITUDE:	Code: 14 Name: COLUMBIA DICKERSON 20153704 RV661	Depth: AASHTO Class: Material Type (1 or 2): LONGITUDE:	0-5 A-4(3) 2
1. Testing Inform			
	Preconditioning - Permanent Strain > 5% (Y=Yes	<u>.</u>	N
	Testing - Permanent Strain > 5% (Y=Yes or N=No Number of Load Sequences Completed (0-15)))	N 15
	Number of Load Sequences Completed (0-13)		15
2. Specimen Info	rmation:		
	Specimen Diameter (in):		
	Тор		3.97
	Middle		3.97
	Bottom		3.97
	Average		3.97
	Membrane Thickness (in):		0.01
	Height of Specimen, Cap and Base (in):		8.04
	Height of Cap and Base (in):		0.00
	Initial Length, Lo (in):		8.04
	Initial Area, Ao (sq. in):		12.30
	Initial Volume, AoLo (cu. in):		98.87
3. Soil Specimen	Weight:		
	Weight of Wet Soil Used (g):		3082.90
4 Sail Branartics			
4. Soil Properties	Optimum Moisture Content (%):		17.4
	Maximum Dry Density (pcf):		107.7
	95% of MDD (pcf):		102.3
	In-Situ Moisture Content (%):		N/A
5. Specimen Pro			2000.00
	Wet Weight (g):		3082.90
	Compaction Moisture content (%):		17.6
	Compaction Wet Density (pcf):		118.80
	Compaction Dry Density (pcf): Moisture Content After Mr Test (%):		101.02 17.5
			120
6. Quick Shear To	est (Y=Yes, N=No, N/A=Not Applicable):		#VALUE!
7. Resilient Modu	ılus, Mr:	8509(S	c)^-0.26592(S3)^0.29991
8. Comments			
9. Tested By:	GREG Date	e: December 3, 2015	

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

Material Code Station No.: Location: CA0705 12/03/15 Date Sampled: Job No.

SSRVPS 379+00

27'RT

0-5

Depth:

Date Tested: December 3, 2015

Name of Project: HWY.98 - HWY.79(WIDENING)(S)

County: Code: 14 Name: COLUMBIA Sampled By: DICKERSON

Lab No.: 20153704
Sample ID: RV661
LATITUDE:

Material Type (1 or 2): 2 LONGITUDE:

	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	_	Cyclic Load	Contact	Max.	Cyclic	Contact	LVDT 1		
		Stress	Load		Load	Axial	Stress	Stress	and 2		
						Stress					
DESIGNATION	လိ	Scyclic	P _{max}	P _{cyclic}	Pcontact	Smax	Scyclic	Scontact	Havg	3-	M
TIND	psi	psi	sql	sql	sql	psi	psi	psi	ų	in/in	psi
Sequence 1	6.0	2.0	25.3	22.5	2.8	2.1	1.8	0.2	0.00126	0.00016	11,730
Sequence 2	0.9	4.0	47.5	44.7	2.8	3.9	3.6	0.2	0.00266	0.00033	10,990
Sequence 3	0.9	6.0	70.2	66.5	3.7	5.7	5.4	0.3	0.00436	0.00054	9,981
Sequence 4	0.0	8.0	93.5	87.3	6.2	7.6	7.1	0.5	0.00662	0.00082	8,619
Sequence 5	6.0	10.0	116.6	107.9	8.7	9.5	8.8	0.7	0.00897	0.00112	7,871
Sequence 6	4.0	2.0	25.2	22.4	2.8	2.1	1.8	0.2	0.00138	0.00017	10,648
Sequence 7	4.0	4.0	47.1	44.2	2.9	3.8	3.6	0.2	0.00309	0.00038	9,344
Sequence 8	4.0	6.0	68.3	65.4	3.0	5.6	5.3	0.2	0.00516	0.00064	8,280
Sednence 9	4.0	8.0	91.7	86.3	5.4	7.5	7.0	0.4	0.00742	0.00092	7,607
Sequence 10	4.0	10.0	114.9	107.0	7.9	9.3	8.7	9.0	0.00997	0.00124	7,012
Sequence 11	2.0	* 2.0	25.1	22.2	2.9	2.0	1.8	0.2	0.00161	0.00020	900'6
Sequence 12	2.0	4.0	46.4	43.5	2.9	3.8	3.5	0.2	0.00370	0.00046	7,679
Sequence 13	2.0	0.9	0.79	64.1	3.0	5.5	5.2	0.2	0.00614	0.00076	6,817
Sequence 14	2.0	8.0	88.9	84.3	4.6	7.2	6.9	0.4	0.00883	0.00110	6,239
Sequence 15	2.0	10.0	111.5	104.5	7.0	9.1	8.5	9.0	0.01167	0.00145	5,852

December 3, 2015	
DATE	DATE
GREG	
TESTED BY	REVIEWED BY

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

Name: COLUMBIA

Job No.

CA0705

Material Code SSRVPS

Date Sampled:

12/03/15

Station No.: 379+00

Date Tested:

December 3, 2015

Location: 27'RT

County:

Name of Project: HWY.98 - HWY.79(WIDENING)(S)

Sampled By:

Code: 14

Depth: 0-5

Lab No.:

DICKERSON

AASHTO Class: A-4(3)

Sample ID:

20153704 RV661

Material Type (1 or 2): 2

LATITUDE:

LONGITUDE:

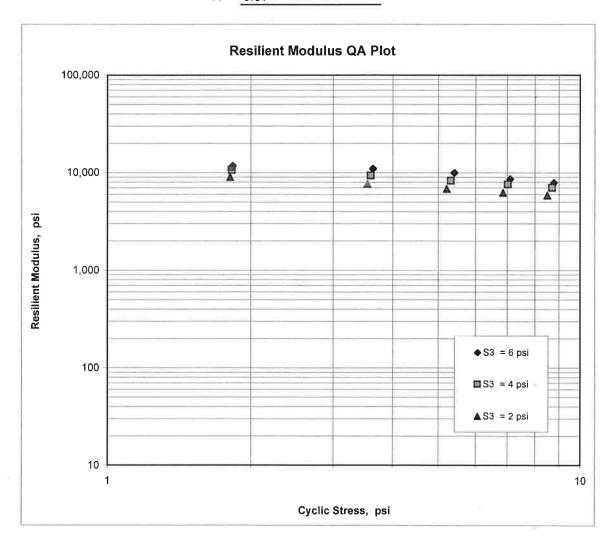
K1 = 8,509

K2 = -0.26592

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

K5 = 0.29991

 $R^2 = 0.97$



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

Job No. Date Sampled: Date Tested: Name of Project: County:	CA0705 12/03/15 December 3, 2015 HWY.98 - HWY.79(WIDENING)(S) Code: 14 Name: COLUMBIA	Material Code Station No.: Location:	SSRVPS 462+00 36'LT
Sampled By: Lab No.: Sample ID: LATITUDE:	DICKERSON 20153705 RV662	Depth: AASHTO Class: Material Type (1 or LONGITUDE:	0-5 A-4(0) 2):
1. Testing Inform			
	Preconditioning - Permanent Strain > 5% (Y- Testing - Permanent Strain > 5% (Y=Yes or I Number of Load Sequences Completed (0-1s)	N=No)	N N 15
2. Specimen Info	rmation:		
	Specimen Diameter (in): Top Middle		3.96 3.96
	Bottom Average Membrane Thickness (in):		3.96 3.96 0.01
	Height of Specimen, Cap and Base (in): Height of Cap and Base (in): Initial Length, Lo (in): Initial Area, Ao (sq. in):		8 0.00 8 12.24
	Initial Volume, AoLo (cu. in):		97.88
2 Call Consider	NA - I - I - 4 -		
3. Soil Specimen	Weight of Wet Soil Used (g):		3750.00
4. Soil Properties	: :		
	Optimum Moisture Content (%): Maximum Dry Density (pcf): 95% of MDD (pcf): In-Situ Moisture Content (%):		13.5 113.9 108.2 N/A
5. Specimen Proj	perties:		
	Wet Weight (g): Compaction Moisture content (%): Compaction Wet Density (pcf): Compaction Dry Density (pcf): Moisture Content After Mr Test (%):		3750.00 13.4 145.97 128.72 13.4
6. Quick Shear Te	est (Y=Yes, N=No, N/A=Not Applicable):		#VALUE!
7. Resilient Modu	ılus, Mr:	931	3(Sc)^-0.22780(S3)^0.40493
8. Comments			
9. Tested By:	DEB	Date: December 3, 2015	

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

Material Code Station No.: Location: December 3, 2015 12/03/15 CA0705 Date Sampled: Date Tested: Job No.

SSRVPS 462+00

36'LT

Name of Project: HWY.98 - HWY.79(WIDENING)(S)

County:Code: 14Name:COLUMBIASampled By:DICKERSONLab No.:20153705

 Lab No.:
 20153705

 Sample ID:
 RV662

 LATITUDE:

AASHTO Class: A-4(0) Material Type (1 or 2): 2 LONGTTUDE:

0-5

Depth:

	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	S³	Scyclic	Ртах	P _{cyclic}	Pcontact	Smax	Scyclic	Scontact	Havg	S _r	M
UNIT	psi	psi	sql	sql	lbs	psi	psi	psi	'n	in/in	psi
Sequence 1	0.9	2.0	25.3	22.6	2.7	2.1	1.8	0.2	0.00091	0.00011	16,159
Sequence 2	0.9	4.0	47.3	44.6	2.8	3.9	3.6	0.2	0.00195	0.00024	14,967
Sequence 3	0.9	6.0	70.0	66.4	3.6	5.7	5.4	0.3	0.00313	0.00039	13,852
Sequence 4	0.9	8.0	93.3	87.2	6.0	7.6	7.1	0.5	0.00459	0.00057	12,416
Sequence 5	0.9	10.0	115.9	107.4	8.5	9.5	8.8	0.7	0.00613	0.00077	11,451
Sequence 6	4.0	2.0	25.0	22.2	2.8	2.0	1.8	0.2	0.00103	0.00013	14,159
Sequence 7	4.0	4.0	46.5	43.8	2.7	3.8	3.6	0.2	0.00238	0.00030	12,055
Sequence 8	4.0	6.0	9.79	64.8	2.8	5.5	5.3	0.2	0.00387	0.00048	10,947
Sednence 9	4.0	8.0	6.06	85.7	5.1	7.4	7.0	0.4	0.00547	0.00068	10,257
Sequence 10	4.0	10.0	113.4	105.7	7.7	9.3	8.6	9.0	0.00705	0.00088	9,799
Sequence 11	2:0	2.0	24.7	21.9	2.8	2.0	1.8	0.2	0.00131	0.00016	10,897
Sequence 12	2.0	4.0	45.4	42.6	2.8	3.7	3.5	0.2	0.00296	0.00037	9,400
Sequence 13	2.0	6.0	65.1	62.3	2.9	5.3	5.1	0.2	0.00482	0.00060	8,439
Sequence 14	2.0	8.0	86.8	82.5	4.3	7.1	6.7	0.4	0.00670	0.00084	8,048
Sequence 15	2.0	10.0	108.5	101.6	6.9	8.9	8.3	9.0	0.00866	0.00108	7,676

December 3,	i.
DATE	DATE
DEB	
ESTED BY	EVIEWED BY

2015

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

Job No.

CA0705

Material Code SSRVPS

Date Sampled:

12/03/15

Station No.: 462+00

Date Tested:

December 3, 2015

Location: 36'LT

Name of Project: HWY.98 - HWY.79(WIDENING)(S)

County:

Code: 14

Name: COLUMBIA

Sampled By:

DICKERSON

Depth: 0-5

Lab No .:

20153705

AASHTO Class: A-4(0)

Sample ID:

RV662

Material Type (1 or 2): 2

LATITUDE:

LONGITUDE:

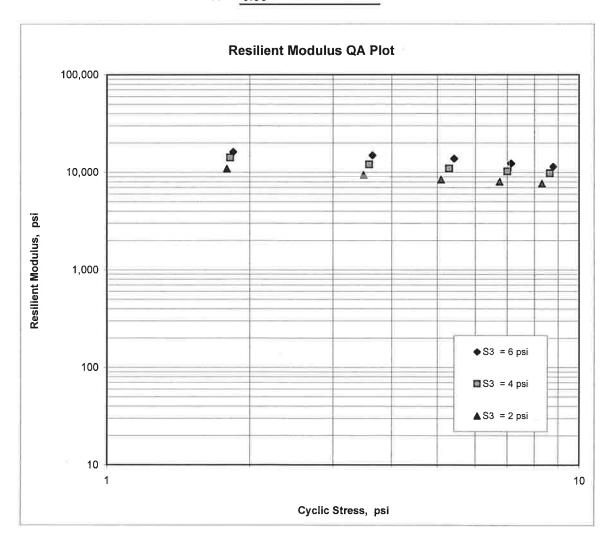
$$M_R = K1 (S_C)^{K2} (S_3)^{K5}$$

K1 = 9,313

K2 = -0.22780

K5 = 0.40493

 $R^2 = 0.99$



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

Job No. Date Sampled: Date Tested:	CA0705 12/03/15 December 3, 2015	Material Code Station No.: Location:	SSRVPS 610+00 27'RT	
Name of Project:	HWY.98 - HWY.79(WIDENING)(S)		5	
County: Sampled By: Lab No.: Sample ID: LATITUDE:	Code: 14 Name: COLUMBIA DICKERSON 20153705 RV663	Depth: AASHTO Class: Material Type (1 or 2): LONGITUDE:		0-5 A-4(0) 2
1. Testing Inform	nation:			
	Preconditioning - Permanent Strain > 5% (Y=Yes Testing - Permanent Strain > 5% (Y=Yes or N=No Number of Load Sequences Completed (0-15)	·	*	N N 15
2. Specimen Info	ormation:	4:		
	Specimen Diameter (in):			
	Тор			3.96
	Middle			3.93
	Bottom			3.94
	Average			3.94
	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):			12.13
	Initial Volume, AoLo (cu. in):			97.30
3. Soil Specimen	Weight:			
·	Weight of Wet Soil Used (g):			3286.40
4. Soil Properties	•			
4. Com i Toperdo	Optimum Moisture Content (%):			13.4
	Maximum Dry Density (pcf):			116.9
	95% of MDD (pcf):			111.1
	In-Situ Moisture Content (%):			N/A
5. Specimen Pro	perties:			
	Wet Weight (g):			3286.40
	Compaction Moisture content (%):			14.0
	Compaction Wet Density (pcf):			128.69
	Compaction Dry Density (pcf):			112.89
	Moisture Content After Mr Test (%):			13.6
6. Quick Shear T	est (Y=Yes, N=No, N/A=Not Applicable):			#VALUE!
7. Resilient Mod	ulus, Mr:	12524(Se	c)^-0.22047	7(S3)^0.29768
8. Comments				
9. Tested By:	GREG Date	: December 3, 2015		

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

SSRVPS 610+00

27'RT

Material Code Station No.: Location: December 3, 2015 12/03/15 CA0705 Date Sampled: Date Tested: Job No.

Name of Project: HWY.98 - HWY.79(WIDENING)(S)

County: Code: 14 Name: COLUMBIA Sampled By: DICKERSON 20153705

Sample ID: RV663 LATITUDE:

Depth: 0-5
AASHTO Class: A-4(0)

Material Type (1 or 2): 2 LONGITUDE:

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Resilient	Modulus				M	psi	18,219	17,148	16,051	13,928	12,438	15,599	14,414	13,128	12,133	11,273	13,389	12,103	10,966	10,158	9,466
Resilient	Strain				. L	in/in	0.00010	0.00021	0.00034	0.00051	0.00070	0.00012	0.00025	0.00040	0.00058	0.00076	0.00013	0.00029	0.00047	0.00067	0.00089
Average	Recov Def.	LVDT 1	and 2		Havg	ŗ	0.00081	0.00170	0.00270	0.00408	0.00561	0.00094	0.00199	0.00325	0.00462	0.00613	0.00107	0.00234	0.00379	0.00538	0.00712
Actual	Applied	Contact	Stress		Scontact	psi	0.2	0.2	0.3	0.5	0.7	0.2	0.2	0.2	0.4	9.0	0.2	0.2	0.2	0.3	9.0
Actual	Applied	Cyclic	Stress		Scyclic	psi	1.8	3.6	5.4	7.1	8.7	1.8	3.6	5.3	7.0	8.6	1.8	3.5	5.2	6.8	8.4
Actual	Applied	Max.	Axial	Stress	Smax	psi	2.1	3.9	5.7	7.6	9.4	2.0	3.8	5.5	7.4	9.2	2.0	3.8	5.4	7.2	9.0
Actual	Applied	Contact	Load		Pcontact	sql	2.8	2.8	3.6	6.1	8.4	2.7	2.8	2.8	5.2	7.6	2.8	2.8	2.8	4.2	6.7
Actual	Applied	Cyclic Load			Poyelic	sql	22.2	44.1	65.5	85.9	105.5	22.1	43.4	64.5	84.8	104.5	21.7	42.8	62.9	82.6	101.9
Actual	Applied	Max. Axial	Load		P _{max}	sql	25.0	46.9	69.1	92.0	114.0	24.8	46.2	67.3	90.0	112.1	≥24.5	45.5	65.7	86.9	108.7
Nominal	Maximum	Axial	Stress		Scyclic	psi	2.0	4.0	0.9	8.0	10.0	2.0	4.0	0.9	8.0	10.0	2.0	4.0	6.0	8.0	10.0
Chamber	Confining	Pressure			S³	psi	6.0	0.9	6.0	6.0	6.0	4.0	4.0	4.0	4.0	4.0	2.0	2.0	2.0	2.0	2.0
		PARAMETER			DESIGNATION	UNIT	Sequence 1	Sequence 2	Sequence 3	Sequence 4	Sequence 5	Sequence 6	Sequence 7	Sequence 8	Sednence 9	Sequence 10	Sequence 11	Sequence 12	Sequence 13	Sequence 14	Sequence 15

December 3, 2015

DATE DATE

GREG

REVIEWED BY

TESTED BY

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

Job No.

CA0705

Material Code SSRVPS

Date Sampled:

12/03/15

Station No.: 610+00

Date Tested:

December 3, 2015

Location: 27'RT

Name of Project: HWY.98 - HWY.79(WIDENING)(S)

County:

Code: 14

Name: COLUMBIA

Sampled By:

DICKERSON

Depth: 0-5

Lab No.:

20153705

AASHTO Class: A-4(0)

Sample ID:

RV663

Material Type (1 or 2): 2

LATITUDE:

LONGITUDE:

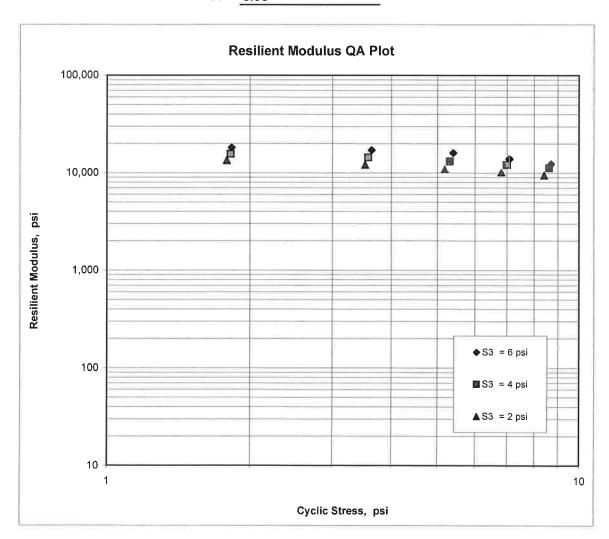
$$M_R = K1 (S_C)^{K2} (S_3)^{K5}$$

K1 = 12,524

K2 = -0.22047

K5 = 0.29768

 $R^2 = 0.95$



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

Job No. Date Sampled: Date Tested: Name of Project: County:	CA0705 11/3/15 December 2, 2015 HWY. 98 - HWY. 79 (WIDENING) (S) Code: 14 Name: COLUMBIA	Material Code Station No.: Location:	SSRVPS 656+00 27'RT	
Sampled By: Lab No.: Sample ID: LATITUDE:	DICKERSON 20153704 RV664	Depth: AASHTO Class: Material Type (1 or 2): LONGITUDE:	A	A-4(0)
1. Testing Inform	ation:			-
	Preconditioning - Permanent Strain > 5% (Y=Y Testing - Permanent Strain > 5% (Y=Yes or N= Number of Load Sequences Completed (0-15)	,		N N 15
2. Specimen Info	rmation:			
·	Specimen Diameter (in): Top Middle			3.98 3.98
	Bottom Average			3.97 3.98
	Membrane Thickness (in): Height of Specimen, Cap and Base (in): Height of Cap and Base (in):			0.01 8.03 0.00
	Initial Length, Lo (in): Initial Area, Ao (sq. in):			8.03 12.34
	Initial Volume, AoLo (cu. in):			99.08
3. Soil Specimen	Weight:			
	Weight of Wet Soil Used (g):			3343.20
4. Soil Properties	:			
	Optimum Moisture Content (%):			10.5
	Maximum Dry Density (pcf):		121	119.9
	95% of MDD (pcf): In-Situ Moisture Content (%):			113.9 N/A
	, ,			
5. Specimen Prop				2242.00
	Wet Weight (g): Compaction Moisture content (%):			3343.20 10.4
	Compaction Wet Density (pcf):			128.56
	Compaction Dry Density (pcf):			116.45
	Moisture Content After Mr Test (%):		97	10.3
6. Quick Shear Te	est (Y=Yes, N=No, N/A=Not Applicable):			#VALUE!
7. Resilient Modu	lus, Mr:	7568(S	c)^-0.02744(S	3)^0.41595
8. Comments				
9. Tested By:	CG D	ate: December 2, 2015	į.	7

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

SSRVPS 656+00 27'RT

Material Code Station No.: Location: HWY. 98 - HWY. 79 (WIDENING) (S) December 2, 2015 11/3/15 CA0705 Name of Project: Date Sampled: Date Tested: Job No.

County: Code: 14 Name: COLUMBIA
Sampled By: DICKER SON

Sampled By: DICKERSON
Lab No.: 20153704
Sample ID: RV664

LATITUDE:

Material Type (1 or 2): LONGITUDE:

A-4(0)

AASHTO Class:

Depth:

0-5

	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	Мах.	Cyclic	Contact	LVDT 1		
		Stress	Load		Load	Axial	Stress	Stress	and 2		
						Stress					
DESIGNATION	S	Scyclic	Ртах	P _{cyclic}	Pcontact	Smax	Scyclic	Scontact	Havg	ž	Σِ
LIND	psi	psi	sql	sql	sql	psi	psi	psi	in	in/in	psi
Sequence 1	0.9	2.0	25.1	22.3	2.8	2.0	1.8	0.2	0.00092	0.00011	15,729
Sequence 2	0.9	4.0	46.9	44.1	2.9	3.8	3.6	0.2	0.00186	0.00023	15,397
Sequence 3	0.9	6.0	69.7	62.9	3.8	5.7	5.3	0.3	0.00277	0.00034	15,495
Sequence 4	0.9	8.0	93.7	87.4	6.3	7.6	7.1	0.5	0.00371	0.00046	15,329
Sequence 5	6.0	10.0	117.6	108.8	8.7	9.5	8.8	0.7	0.00469	0.00058	15,093
Sequence 6	4.0	2.0	24.7	21.9	2.8	2.0	1.8	0.2	0.00105	0.00013	13,579
Sequence 7	4.0	4.0	46.0	43.1	2.9	3.7	3.5	0.2	0.00220	0.00027	12,758
Sequence 8	4.0	0.9	67.0	64.1	2.9	5.4	5.2	0.2	0.00337	0.00042	12,368
Sequence 9	4.0	8.0	8.06	85.4	5.4	7.4	6.9	0.4	0.00445	0.00055	12,492
Sequence 10	4.0	10.0	113.9	106.0	8.0	9.2	8.6	9.0	0.00544	0.00068	12,673
Sequence 11	2.0	2.0	23.7	.20.9	2.8	1.9	1.7	0.2	0.00135	0.00017	10,046
Sequence 12	2.0	4.0	43.7	40.7	2.9	3.5	3.3	0.2	0.00276	0.00034	9,596
Sequence 13	2.0	0.9	63.4	60.5	3.0	5.1	4.9	0.2	0.00416	0.00052	9,458
Sequence 14	2.0	8.0	85.8	81.2	4.6	7.0	9.9	0.4	0.00543	0.00068	9,725
Sequence 15	2.0	10.0	108.3	101.2	7.1	8.8	8.2	9.0	0.00665	0.00083	606'6

December 2, 2015

DATE DATE

CG

REVIEWED BY

TESTED BY

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

Job No.

CA0705

Material Code SSRVPS

Date Sampled:

11/3/15

Station No.: 656+00

Date Tested:

Name of Project: HWY. 98 - HWY. 79 (WIDENING) (S)

December 2, 2015

Location: 27'RT

County:

Code: 14

Name: COLUMBIA

Sampled By:

DICKERSON

Depth: 0-5'

Lab No .:

20153704

AASHTO Class: A-4(0)

Sample ID:

RV664

Material Type (1 or 2): 2

LATITUDE:

LONGITUDE:

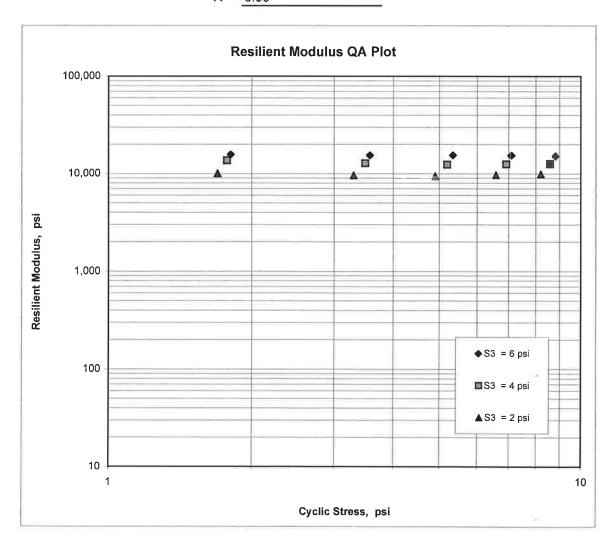
$$M_R = K1 (S_C)^{K2} (S_3)^{K5}$$

K1 = 7,568

K2 = -0.02744

K5 = 0.41595

 $R^2 = 0.99$



JOB: JOB NAME: HWY.98 - HWY.79 (WIDENING) (S) CA0705

Arkansas State Highway Transporation Department Materials Division

DATE TESTED 11/30/2015

COUNTY NO.		14			Michael Benson, Materials Engineer
STA.# LOC.	LOC.				PAVEMENT SOUNDINGS
371+00	15' RT	ACHMSC 3.0W	ACHMBC	SOIL CEMENT BASE	
371+00	27' RT	ACHMSC	ACHMBC	SOIL CEMENT BASE	
		I	1	Ī	
371+00	06' RT	ACHMSC 4.0W	ACHMBC 2.0	SOIL CEMENT BASE 7.0	
379+00	06' LT	ACHMSC 4.0W	ACHMBC 2.5	SOIL CEMENT BASE 6.0	
379+00	15' LT	ACHMSC	ACHMBC	SOIL CEMENT BASE	
379+00	27' LT	ACHMSC	ACHMBC	6.0 SOIL CEMENT BASE	
		1	I	I	
390+00	06' RT	ACHMSC 3.5W	ACHMBC 2.5W	SOIL CEMENT BASE 6.0	
390+00	15' RT	ACHMSC	ACHMBC	SOIL CEMENT BASE	
390+00	27' RT	ACHMSC	ACHMBC	SOIL CEMENT BASE	
		I	I	E	
398+00	06' LT	ACHMSC	ACHMBC	SOIL CEMENT BASE	
398+00	15' LT	ACHMSC	ACHMBC	SOIL CEMENT BASE	
		3.0	1	6.0	
398+00	27' LT	ACHMSC	ACHMBC	SOIL CEMENT BASE	
		100	E	i.	
406+00	06' RT	ACHMSC	ACHMBC	SOIL CEMENT BASE	SAND
100 to 00	ב ה	ACHMEC.	ACHMBO	SOIL CEMENT BASE	
	i Li	3.75W	1	6.0	
414+00	21' LT	ACHMSC	ASHMBC	SOIL CEMENT BASE	AGG. BASE CRS. CL5
		2.5	I	I	10.0
414+00	33' LT	ACHMSC	ASHMBC	SOIL CEMENT BASE	AGG. BASE CRS. CL5
414+00	12' LT	ACHMSC	ACHMBC	SOIL CEMENT BASE	SAND
		1.044	0.044		0.0

comments:

W=MULTIPLE LAYERS, X=STRIPPED
ALL LOCATIONS MEASURED FROM CENTERLINE OF EXISTING HIGHWAY

THAT IS THE PROPERTY OF THE PROPERTY OF THE PARTY OF THE	THE PROPERTY OF THE PARTY OF TH		THE RESERVE THE PERSON NAMED IN	THE REAL PROPERTY.	CONTRACTOR STATE
I	6.0	12.0W	2.5		
AGG. BASE CRS. CL5	SOIL CEMENT BASE	ACHMBC	ACHMSC	06' RT	470+00
Î	Ĩ	I	I		
AGG. BASE CRS. CL5	SOIL CEMENT BASE	ACHMBC	ACHMSC	36' LT	462+00
8.0	2000	I	2.25		
AGG. BASE CRS. CL5	SOIL CEMENT BASE	ACHMBC	ACHMSC	27' LT	462+00
I	Ē	10.0W	6.0W		
SOIL CEMENT BASE	CHIP SEAL	ACHMBC	ACHMSC	18' LT	462+00
Ĭ	ł	1	Ī		
SOIL CEMENT BASE	CHIP SEAL	ACHMBC	ACHMSC	24' RT	454+00
6.0	1.5X	6.5WX	1.5X		
SOIL CEMENT BASE	CHIP SEAL	ACHMBC	ACHMSC	15' RT	454+00
Ī	4.0	1.5W	2.5W		
AGG. BASE CRS. CL5	SOIL CEMENT BASE	ACHMBC	ACHMSC	06' RT	454+00
11.0	Î	1	2.25		
AGG. BASE CRS. CL5	SOIL CEMENT BASE	ACHMBC	ACHMSC	27' LT	446+00
1	Ī	9.25W	6.0W		
SOIL CEMENT BASE	CHIP SEAL	ACHMBC	ACHMSC	18' LT	446+00
1		1	1		
AGG. BASE CRS. CL5	SOIL CEMENT BASE	ACHMBC	ACHMSC	36' LT	446+00
I	1	1	1		
SOIL CEMENT BASE	CHIP SEAL	ACHMBC	ACHMSC	27' RT	438+00
8.0	0.25	7.5	2.25		
SOIL CEMENT BASE	CHIP SEAL	ACHMBC	ACHMSC	15' RT	438+00
1	6.0	8.0W	3.5W		
AGG. BASE CRS. CL5	SOIL CEMENT BASE	ACHMBC	ACHMSC	06' RT	438+00
Ĭ	1	i	1		
AGG. BASE CRS. CL5	SOIL CEMENT BASE	ACHMBC	ACHMSC	36' LT	430+00
12.0	ä	1	2.0		
AGG. BASE CRS. CL5	SOIL CEMENT BASE	ACHMBC	ACHMSC	27' LT	430+00
	Ī	10.0W	5.75W		
	SOIL CEMENT BASE	ACHMBC	ACHMSC	18' LT	430+00
	1	1	1		
	SOIL CEMENT BASE	ACHMBC	ACHMSC	27' RT	422+00
	6.0	5.5W	4.25W		
	SOIL CEMENT BASE	ACHMBC	ACHMSC	15' RT	422+00
1	6.0	7.0W	6.5W		
AGG. BASE CRS. CL5	SOIL CEMENT BASE	ASHMBC	ACHMSC	06' RT	422+00

STA.# LOC.

PAVEMENT SOUNDINGS

comments:

W=MULTIPLE LAYERS, X=STRIPPED
ALL LOCATIONS MEASURED FROM CENTERLINE OF EXISTING HIGHWAY

		W-WIII TIDI E I AVEDS V-STRIBBED		101	-
	6.0	1	3.0W		
	SOIL CEMENT BASE	ACHMBC	ACHMSC	15' RT	520+00
	6.0	3.25WX	3.75WX		
	SOIL CEMENT BASE	ACHMBC	ACHMSC	06' RT	520+00
		7.0	5.0WX		
		SOIL CEMENT BASE	ACHMSC	06' LT	512+00
		ľ	Ê		
	SOIL CEMENT BASE	ACHMBC	ACHMSC	27' LT	512+00
	7.0	I	3.0X		
	SOIL CEMENT BASE	ACHMBC	ACHMSC	15' LT	512+00
		I	I		
		SOIL CEMENT BASE	ACHMSC	24' RT	504+00
		6.0	3.25W		
		SOIL CEMENT BASE	ACHMSC	15' RT	504+00
	7.0	3.0W	4.5WX		
	SOIL CEMENT BASE	ACHMBC	ACHMSC	06' RT	504+00
	1	1	1		
	SOIL CEMENT BASE	ACHMBC	ACHMSC	27' LT	496+00
	6.0	I	3.0		
	SOIL CEMENT BASE	ACHMBC	ACHMSC	15' LT	496+00
	7.0	4.5W	3.5W		
	SOIL CEMENT BASE	ACHMBC	ACHMSC	06' LT	496+00
	1	1	Ĩ		
	SOIL CEMENT BASE	ACHMBC	ACHMSC	27' RT	486+00
	6.0	Ĭ	3.75W		
	SOIL CEMENT BASE	ACHMBC	ACHMSC	15' RT	486+00
	7.0	8.0W	2.0		
	SOIL CEMENT BASE	ACHMBC	ACHMSC	06' RT	486+00
	1	1	Ī		
	SOIL CEMENT BASE	ACHMBC	ACHMSC	27' LT	478+00
	1	6.0	8.5W		
	SOIL CEMENT BASE	ACHMBC	ACHMSC	15' LT	478+00
	7.0	ì	13.0W		
	SOIL CEMENT BASE	ACHMBC	ACHMSC	06' LT	478+00
	1	1	Ĭ		
	SOIL CEMENT BASE	ACHMBC	ACHMSC	24' RT	470+00
	4.0	6.5WX	2.5		
	SOIL CEMENT BASE	ACHMBC	ACHMSC	15' RT	470+00
PAVEMENT SOUNDINGS				LOC.	SIA.#
S A TOTAL CONTROL OF THE PARTY					

comments: W=MULTIPLE LAYERS, X=STRIPPED
ALL LOCATIONS MEASURED FROM CENTERLINE OF EXISTING HIGHWAY

	Ŀ	E	ı		
	SOIL CEMENT BASE	ACHMBC	ACHMSC	30' RT	576+00
	SOIL CEMENT BASE 7.0	ACHMBC	ACHMSC 3.0W	15' RT	576+00
CHIP SEAL	SOIL CEMENT BASE 7.0	ACHMBC 2.5	ACHMSC 4.5W	06' RT	576+00
	ı	į.			
CHIP SEAL	SOIL CEMENT BASE	ACHMBC	ACHMSC	27' LT	568+00
1.0	7.0	Ē	1.5		
CHIP SEAL	SOIL CEMENT BASE	ACHMBC	ACHMSC	15' LT	568+00
	SOIL CEMENT BASE	ACHMBC 2.0	ACHMSC 5.5WX	06' LT	568+00
	2.0	2.25W	6.0W		
	SOIL CEMENT BASE	ACHMBC	ACHMSC	24' RT	554+00
	SOIL CEMENT BASE 4.0	ACHMBC 2.25W	ACHMSC 4.5W	15' RT	554+00
	I	1	I		
	SOIL CEMENT BASE	ACHMBC	ACHMSC	45' RT	554+00
	7.0	1	5.5W		
	SOIL CEMENT BASE	ACHMBC	ACHMSC	15' LT	545+00
	7.0	2.25	5.25W		
	SOIL CEMENT BASE	ACHMBC	ACHMSC	06' LT	545+00
	I	I	1		
	SOIL CEMENT BASE	ACHMBC	ACHMSC	27' LT	545+00
	ı	I	I		
	SOIL CEMENT BASE	ACHMBC	ACHMSC	27' RT	538+00
	6.0	I	3.0W		
	SOIL CEMENT BASE	ACHMBC	ACHMSC	15' RT	538+00
	6.0	4.0W	4.5W		
	SOIL CEMENT BASE	ACHMBC	ACHMSC	06' RT	538+00
	1	I	1		
	SOIL CEMENT BASE	ACHMBC	ACHMSC	27' LT	528+00
	7.0	I	3.0		
	SOIL CEMENT BASE	ACHMBC	ACHMSC	15' LT	528+00
	7.0	2.25	3.25W	06	528+00
		1		2	
	SOIL CEMENT BASE	ACHMBC	ACHMSC	27' RT	520+00
PAVEMENI SOUNDINGS				LOC.	31A.#
					071

comments: W=MULTIPLE LAYERS, X=STRIPPED
ALL LOCATIONS MEASURED FROM CENTERLINE OF EXISTING HIGHWAY

Wednesday, December 09, 2015	HMAY	W-MULTIPLE LAYERS, X=STRIPPED ALL LOCATIONS MEASURED FROM CENTERI INF OF FXISTING HIGHWAY	W=MULTIPLE LAYERS, X=STRIPPED ALL LOCATIONS MEASURED FROM CE	=MULTIPLE LAYE		comments:
		4.0	ı	3.5W		
		SAND	ACHMBC	ACHMSC	15' RT	640+00
	5.0	E.	4.5	5.5WX		
	SAND	SOIL CEMENT BASE	ACHMBC	ACHMSC	06' LT	632+00
		ľ	f	I		
		SAND	ACHMBC	ACHMSC	27' LT	632+00
		7.0	Ē	3.0W		
		SAND	ACHMBC	ACHMSC	15' LT	632+00
	Ē	E	Ī	Ĭ		
	SAND	SOIL CEMENT BASE	ACHMBC	ACHMSC	27' RT	624+00
	Ĩ	7.0	1	3.0W		
	SAND	SOIL CEMENT BASE	ACHMBC	ACHMSC	15' RT	624+00
		8.25	2.75	4.0W		
		SOIL CEMENT BASE	ACHMBC	ACHMSC	06' RT	624+00
		I	1	I		
		SOIL CEMENT BASE	ACHMBC	ACHMSC	27' LT	616+00
		7.0	I	3.0W		
		SOIL CEMENT BASE	ACHMBC	ACHMSC	15' LT	616+00
		7.0	2.5	3.75W		
		SOIL CEMENT BASE	ACHMBC	ACHMSC	06' LT	616+00
		Ī	1	Ì		
		SOIL CEMENT BASE	ACHMBC	ACHMSC	27' RT	610+00
		6.0	1	2.5		
		SOIL CEMENT BASE	ACHMBC	ACHMSC	15' RT	610+00
		7.0	2.0	3.25W		
		SOIL CEMENT BASE	ACHMBC	ACHMSC	06' RT	610+00
		7.0	ı	2.0		
		SOIL CEMENT BASE	ACHMBC	ACHMSC	27' LT	600+00
		1	1	1		
		SOIL CEMENT BASE	ACHMBC	ACHMSC	33' LT	600+00
		7.0	1.5	3.0W		
		SOIL CEMENT BASE	ACHMBC	ACHMSC	18' LT	600+00
		I	ì	I		
		SOIL CEMENT BASE	ACHMBC	ACHMSC	27' RT	592+00
		6.0	I	2.5W		
		SOIL CEMENT BASE	ACHMBC	ACHMSC	15' RT	592+00
		6.0	2.0	4.0W		
		SOIL CEMENT BASE	ACHMBC	ACHMSC	06' RT	592+00
					١	

STA.# LOC.

PAVEMENT SOUNDINGS

W=MULTIPLE LAYERS, X=STRIPPED
ALL LOCATIONS MEASURED FROM CENTERLINE OF EXISTING HIGHWAY

STA.# LOC. PAVEMENT SOUNDINGS	SAND	ACHMBC	640+00 27' RT ACHMSC	27' RT	640+00
	PAVEMENT SOUNDINGS			LOC.	STA.#

	4.0	3.75W		
	SAND	ACHMSC	15' LT	664+00
4.0	1.5	6.0W		
SAND	ACHMBC	ACHMSC	06' LT	664+00
	I	1		
	SAND	ACHMSC	27' LT	664+00
ı	1	1	r	
SAND	ACHMBC	ACHMSC	27' RT	656+00
ŀ	6.0	3.0W		
SAND	ACHMBC	ACHMSC	15' RT	656+00
6.0	2.0	5.5W		
SAND	ACHMBC	ACHMSC	06' RT	656+00
1	1	Ì		
SAND	ACHMBC	ACHMSC	27' LT	648+00
6.0	Ĩ	3.25W		
SAND	ACHMBC	ACHMSC	15' LT	648+00
4.0	2.25	5.0W		
SAND	ACHMBC	ACHMSC	06' LT	648+00
ı	4.5W	4.5W		
SAND	ACHMBC	ACHMSC	06' RT	640+00
ı	Ĭ	Ì		
SAND	ACHMBC	ACHMSC	27' RT	640+00

Arkansas State Highway Transporation Department

JOB NAME: HWY.98 - HWY.79 (WIDENING) (S)

Materials Division

COUNTY NO. 14 **DATE TESTED** 12/4/2015

Michael Benson, Materials Engineer

STA.#	LOC. DEPTH	COLOR	#4	#10	#40	#80	#200	L.L.	P.I.	SOIL CLASS	LAB#:	%MOISTURE
379+00	27' LT 0-5	BROWN	97	96	95	92	77	27	05	A-4(3)	RV661	
462+00	36' LT 0-5	BROWN	93	91	89	83	68	22	03	A-4(0)	RV662	
610+00	27' RT 0-5	RD/BR	96	95	93	74	52	23	06	A-4(0)	RV663	
656+00	27' RT 0-5	BROWN	97	97	96	89	62	ND	NP	A-4(0)	RV664	
371+00	06' RT 0-5	BROWN	99	99	93	81	45	29	14	A-6(3)	S557	17.4
371+00	15' RT 0-5	BROWN	100	99	91	79	45	27	11	A-6(2)	S558	16.1
371+00	27' RT 0-5	RD/BR	99	99	88	75	39	27	12	A-6(1)	S559	17.6
379+00	06' LT 0-5	RD/BR	100	99	98	93	80	31	12	A-6(8)	S560	22,5
379+00	15' LT 0-5	BROWN	100	99	97	88	68	23	07	A-4(2)	S561	18
379+00	27' LT 0-5	BROWN		100	99	98	91	34	14	A-6(13)	S562	24.3
390+00	06' RT 0-5	BROWN	100	99	98	90	62	28	08	A-4(3)	S563	20,6
390+00	15' RT 0-5	BROWN	99	99	97	87	59	27	08	A-4(2)	S564	19
390+00	27' RT 0-5	RD/BR	95	93	92	88	67	29	08	A-4(4)	S565	19.7
398+00	06' LT 0-5	RD/BR	100	99	99	94	69	33	15	A-6(8)	S566	23
398+00	15' LT 0-5	RD/BR	99	99	98	90	65	27	07	A-4(3)	S567	19.5
398+00	27' LT 0-5	BR/GR	99	99	98	93	65	30	10	A-4(5)	S568	23.2
406+00	06' RT 0-5	RD/BR	99	99	98	84	53	23	07	A-4(1)	S569	17.2
406+00	15' RT 0-5	BROWN	99	99	99	86	59	26	11	A-6(4)	S570	17.6
414+00	12' LT 0-5	BR/GR	99	99	96	86	61	25	07	A-4(2)	S571	20.9
414+00	21' LT 0-5	BR/GR	98	94	89	78	53	25	08	A-4(1)	S572	16.6
414+00	33' LT 0-5	BR/GR	96	95	87	80	65	23	05	A-4(1)	S573	19.5
422+00	06' RT 0-5	RD/BR	99	99	99	93	75	27	09	A-4(5)	S574	23.1
422+00	15' RT 0-5	BROWN	98	96	94	89	79	24	06	A-4(3)	S575	20.7
422+00	27' RT 0-5	RD/BR	97	95	92	89	72	23	05	A-4(1)	S576	17.9
430+00	18' LT 0-5	BR/GR	100	99	98	90	49	ND	NP	A-4(0)	S577	15.5
430+00	27' LT 0-5	BR/GR	97	93	89	83	48	18	04	A-4(0)	S578	12

STA.#	LOC.	DEPTH	COLOR	#4		#40	#80	#200 E S -	L.L.	P.I.	SOIL CLASS	<i>LAB</i> #:	%MOISTURE
430+00	36' LT	0-5	BR/GR	99	98	95	88	45	ND	NP	A-4(0)	S579	14.3
438+00	06' RT	0-5	BROWN	99	99	98	92	60	27	09	A-4(3)	S580	18.1
438+00	15' RT	0-5	BROWN	100	99	98	90	64	28	14	A-6(6)	S581	18.5
438+00	27' RT	0-5	RD/BR	99	99	98	94	66	26	10	A-4(4)	S582	15.8
446+00	18' LT	0-5	BR/GR	98	96	94	84	63	24	07	A-4(2)	S583	21.3
446+00	27' LT	0-5	BR/GR	98	95	89	84	59	23	08	A-4(2)	S584	14.4
446+00	36' LT	0-5	BR/GR	97	96	93	82	56	17	03	A-4(0)	S585	14.2
454+00	06' RT	0-5	BR/GR	99	97	94	83	55	22	08	A-4(1)	S586	20.1
454+00	15' RT	0-5	BR/GR	99	97	95	84	62	25	11	A-6(4)	S587	19.6
454+00	24' RT	0-5	BR/GR	99	98	96	80	52	18	04	A-4(0)	S588	19
462+00	18' LT	0-5	BROWN	99	98	97	84	59	19	03	A-4(0)	S589	27.5
462+00	27' LT	0-5	BROWN	97	93	88	74	49	20	04	A-4(0)	S590	13.6
462+00	36' LT	0-5	BROWN	99	96	92	78	58	22	05	A-4(0)	S591	19
470+00	06' RT	0-5	BROWN	99	99	98	86	56	18	02	A-4(0)	S592	14.7
470+00	15' RT	0-5	BR/GR	99	99	98	86	60	18	03	A-4(0)	S593	13
470+00	24' RT	0-5	BR/GR	99	98	97	81	49	17	01	A-4(0)	S594	13.4
478+00	06' LT	0-5	BR/GR	99	99	97	87	63	20	05	A-4(0)	S595	14.1
478+00	15' LT	0-5	BR/GR	99	97	95	85	57	19	04	A-4(0)	S596	14.2
478+00	27' LT	0-5	BR/GR	99	98	96	85	60	18	04	A-4(0)	S597	14.9
486+00	06' RT	0-5	BR/GR	100	99	99	92	65	17	03	A-4(0)	S598	16.3
486+00	15' RT	0-5	BR/GR	100	99	99	88	56	17	03	A-4(0)	S599	14.3
486+00	27' RT	0-5	BR/GR	100	99	98	89	61	18	03	A-4(0)	S600	15.7
496+00	06' LT	0-5	BR/GR	100	99	98	87	59	17	04	A-4(0)	S601	13.6
496+00	15' LT	0-5	BR/GR	99	99	97	81	54	ND	NP	A-4(0)	\$602	12.9
496+00	27' LT	0-5	BR/GR	98	97	96	83	55	ND	NP	A-4(0)	S603	13.8
504+00	06' RT	0-5	BR/GR	100	99	98	86	62	16	02	A-4(0)	\$604	15.3
504+00	15' RT	0-5	BR/GR	99	98	96	82	56	18	02	A-4(0)	S605	14.9
504+00	24' RT	0-5	BR/GR	98	97	95	82	57	17	02	A-4(0)	S606	14.7

STA	.# LOC.	DEPTH	COLOR	#4	#10	#40	#80	#200 E S	L.L.	P.I.	SOIL CLASS	<i>LAB</i> #:	%MOISTURE
512+0	00 06' LT	0-5	BR/GR	99	99	98	84	56	19	03	A-4(0)	S607	17.1
512+0	00 15' L T	0-5	BR/GR	100	99	98	82	55	ND	NP	A-4(0)	S608	20
512+0	00 27' LT	0-5	BR/GR	97	93	90	78	51	17	02	A-4(0)	S609	15.9
520+0	00 06' RT	0-5	BR/GR	98	97	94	79	54	ND	NP	A-4(0)	S610	15.7
520+0	00 15' RT	0-5	BR/GR	100	99	98	85	59	17	04	A-4(0)	S611	12
520+0	00 27' RT	0-5	BR/GR	99	99	97	79	50	15	01	A-4(0)	S612	8.9
528+0	00 06' LT	0-5	BROWN	99	99	98	81	51	ND	NP	A-4(0)	S613	15.5
528+0	00 15' LT	0-5	BROWN	99	98	96	78	50	ND	NP	A-4(0)	S614	11.5
528+0	00 27' LT	0-5	BROWN	100	98	95	78	46	ND	NP	A-4(0)	S615	15.6
538+0	00 06' RT	0-5	RD/BR	99	99	97	79	55	19	03	A-4(0)	S616	18.7
538+0	00 15' RT	0-5	RD/BR	100	99	97	82	56	ND	NP	A-4(0)	S617	19.1
538+0	00 27' RT	0-5	BROWN	100	99	97	71	52	19	03	A-4(0)	S618	21.4
545+0	00 06' LT	0-5	RD/BR	99	98	95	78	56	23	07	A-4(1)	S619	18
545+0	00 15' LT	0-5	BROWN	99	98	95	77	55	20	4	A-4(0)	S620	18.7
545+0	00 27' LT	0-5	BROWN	96	92	70	64	53	24	8	A-4(1)	S621	16.1
554+0	00 15' RT	0-5	BROWN	99	99	98	85	60	22	7	A-4(1)	S622	19.1
554+0	00 24' RT	0-5	BROWN	99	99	96	82	15	19	4	A-4(1)	S623	16
554+0	00 45' RT	0-5	BROWN	99	98	96	88	69	27	12	A-6(6)	S624	17.7
568+0	00 06' LT	0-5	BROWN	100	99	97	77	52	18	4	A-4(0)	S625	13.6
568+0	0 15' LT	0-5	BROWN	99	98	95	77	56	17	5	A-4(0)	S626	11.9
568+0	00 27' LT	0-5	BROWN	99	99	98	82	59	17	2	A-4(0)	S627	12.1
576+0	00 06' RT	0-5	BR/GR	97	96	93	78	57	18	4	A-4(0)	S628	15.2
576+0	0 15' RT	0-5	BROWN	98	98	95	61	44	31	17	A-6(3)	S629	15.4
576+0	0 30' RT	0-5	BROWN	87	83	80	63	47	18	3	A-4(0)	S630	18.3
592+0	0 06' RT	0-5	RD/BR	100	99	97	67	45	26	13	A-6(2)	S631	15.5
592+0	0 15' RT	0-5	RD/BR	100	99	97	69	44	27	14	A-6(2)	S632	17.7
592+0	0 27' RT	0-5	RD/BR	100	99	97	83	60	20	7	A-4(1)	S633	20.2
600+0	0 18' LT	0-5	RD/BR	100	98	93	46	29	28	13	A-2-6(0)	S634	19,9

S	STA.#	LOC. 1	DEPTH	COLOR	#4	#10	#40	#80	#200	L, L .	P.I.	SOIL CLASS	<i>LAB</i> #:	%MOISTURE
B10+00 Color Col	600+00	27' LT	0-5	RD/BR	and the same of				S 35	30	17	A-2-6(1)	S635	18.5
Second S	600+00	33' LT	0-5	RD/BR	100	99	92	46	35	31	15	A-2-6(1)	S636	18
610+00 27 RT 0-5 RD/BR 99 97 95 76 51 25 13 A-6(3) S639 16.9 618+00 06 LT 0-5 RD/BR 99 99 97 78 54 26 13 A-6(4) S640 23.2 618+00 15 LT 0-5 RD/BR 98 98 95 76 53 24 9 A-4(6) S641 16.5 618+00 27 LT 0-5 RD/BR 97 95 92 69 50 24 11 A-6(4) S642 18.8 624+00 06 RT 0-5 RD/BR 100 99 98 84 65 24 11 A-6(4) S643 19.9 624+00 15 RT 0-5 RD/BR 99 99 97 84 68 24 9 A-4(3) S644 16.9 624+00 27 RT 0-5 RD/BR 99 99 97 84 68 24 9 A-4(3) S645 17.2 632+00 06 LT 0-5 RD/BR 99 99 97 86 90 69 20 6 A-4(1) S646 17.7 632+00 15 LT 0-5 BROWN 99 99 98 86 90 69 20 6 A-4(1) S646 17.7 632+00 15 LT 0-5 BROWN 99 99 99 92 74 21 06 A-4(2) S647 16.3 632+00 06 RT 0-5 BROWN 99 99 99 92 77 80 59 23 08 A-4(2) S649 18.1 640+00 06 RT 0-5 BROWN 99 99 98 97 90 59 23 08 A-4(2) S649 18.1 640+00 15 RT 0-5 BROWN 99 99 98 97 90 59 23 08 A-4(0) S651 17.3 648+00 06 LT 0-5 BROWN 99 99 98 97 90 59 23 08 A-4(0) S651 17.3 648+00 06 LT 0-5 BROWN 99 99 98 97 90 59 23 08 A-4(0) S651 17.3 648+00 06 LT 0-5 BROWN 99 99 98 97 90 59 23 08 A-4(0) S651 17.3 648+00 06 LT 0-5 BROWN 99 99 98 97 90 59 23 08 A-4(0) S651 17.3 648+00 06 LT 0-5 BROWN 99 99 98 87 90 59 23 08 A-4(0) S651 17.3 648+00 06 LT 0-5 BROWN 99 99 98 87 90 59 23 08 A-4(0) S651 17.3 648+00 06 LT 0-5 BROWN 99 99 98 87 90 59 23 08 A-4(0) S651 17.3 648+00 06 LT 0-5 BROWN 99 99 98 87 90 59 23 08 A-4(0) S651 17.3 648+00 06 LT 0-5 BROWN 99 99 98 87 90 59 23 08 A-4(0) S651 17.3 648+00 06 LT 0-5 BROWN 99 99 98 87 90 59 23 08 A-4(0) S651 17.3 648+00 06 LT 0-5 BROWN 99 99 98 88 81 59 16 03 A-4(0) S651 17.3 648+00 06 LT 0-5 BROWN 99 99 98 88 81 59 16 03 A-4(0) S655 18 656+00 06 RT 0-5 BROWN 99 99 98 88 86 65 80 10 ND NP A-4(0) S656 14.3 656+00 06 LT 0-5 BROWN 99 99 98 88 86 65 80 ND NP A-4(0) S656 14.3	610+00	06' RT	0-5	RD/BR	100	99	91	55	41	39	25	A-6(5)	S637	19.2
616+00 06*LT 0-5 RD/BR 99 97 78 54 26 13 A-6(4) S640 23 2 616+00 15*LT 0-5 RD/BR 98 98 95 76 53 24 9 A-4(6) S641 16.5 616+00 27*LT 0-5 RD/BR 97 95 92 69 50 24 11 A-6(2) S642 18.8 624+00 06*RT 0-5 RD/BR 100 99 98 84 65 24 11 A-6(4) S643 19.9 624+00 15*RT 0-5 RD/BR 99 99 97 78 57 20 5 A-4(0) S645 17.2 632+00 26*LT 0-5 BROWN 99 99 99 96 69 20 6 A-4(1) S646 17.7 632+00 27*LT 0-5 BROWN 99 99 99 <td>610+00</td> <td>15' RT</td> <td>0-5</td> <td>RD/BR</td> <td>99</td> <td>98</td> <td>92</td> <td>66</td> <td>46</td> <td>25</td> <td>9</td> <td>A-4(1)</td> <td>S638</td> <td>17.5</td>	610+00	15' RT	0-5	RD/BR	99	98	92	66	46	25	9	A-4(1)	S638	17.5
618+00 15'LT 0-5 RD/BR 98 98 95 76 53 24 9 A.4(6) S641 16.5 616+00 27'LT 0-5 RD/BR 97 95 92 69 50 24 11 A-6(2) S642 18.8 624+00 06'RT 0-5 RD/BR 100 99 98 84 65 24 11 A-6(4) S643 19.9 624+00 15'RT 0-5 RD/BR 99 99 97 84 68 24 9 A-4(3) S644 16.9 624+00 27'RT 0-5 RD/BR 99 99 97 78 57 20 5 A-4(0) S645 17.2 632+00 15'LT 0-5 BROWN 93 99 99 99 20 64 68 21 07 A-4(2) S648 14.1 640+00 15'RT 0-5 BROWN <td>610+00</td> <td>27' RT</td> <td>0-5</td> <td>RD/BR</td> <td>99</td> <td>97</td> <td>95</td> <td>75</td> <td>51</td> <td>25</td> <td>13</td> <td>A-6(3)</td> <td>S639</td> <td>16.9</td>	610+00	27' RT	0-5	RD/BR	99	97	95	75	51	25	13	A-6(3)	S639	16.9
616+00 27'LT 0-5 RD/BR 97 95 92 69 50 24 11 A-6(2) S642 18.8 624+00 06'RT 0-5 RD/BR 100 99 98 84 65 24 11 A-6(4) S643 19.9 624+00 15'RT 0-5 RD/BR 99 99 97 84 68 24 9 A-4(3) S644 16.9 624+00 27'RT 0-5 RD/BR 99 99 97 78 57 20 5 A-4(0) S645 17.2 632+00 06'LT 0-5 BROWN 99 99 98 84 68 21 07 A-4(2) S646 17.7 632+00 15'LT 0-5 BROWN 99 99 99 97 84 68 21 07 A-4(2) S647 16.3 632+00 06'RT 0-5 BROWN 99 99 99 97 80 84 68 21 07 A-4(2) S648 14.1 640+00 06'RT 0-5 BROWN 99 99 97 90 59 23 08 A-4(2) S648 14.1 640+00 15'RT 0-5 BROWN 99 99 97 90 59 23 08 A-4(2) S649 18.1 640+00 15'RT 0-5 BROWN 99 99 98 97 90 62 24 09 A-4(3) S650 21.1 640+00 06'LT 0-5 BROWN 99 99 98 81 59 16 03 A-4(0) S651 17.3 648+00 06'LT 0-5 BROWN 99 99 98 81 59 16 03 A-4(0) S651 17.3 648+00 15'LT 0-5 BROWN 99 99 98 87 77 54 16 03 A-4(0) S652 11 648+00 15'LT 0-5 BROWN 99 99 98 88 60 17 02 A-4(0) S653 14.1 646+00 27'LT 0-5 BROWN 99 99 98 88 60 17 02 A-4(0) S655 15 656+00 06'RT 0-5 BROWN 99 99 98 88 60 17 02 A-4(0) S655 16 666+00 06'LT 0-5 BROWN 99 99 98 88 60 17 02 A-4(0) S655 14.3 656+00 06'LT 0-5 BROWN 99 99 98 88 60 17 02 A-4(0) S655 14.3 656+00 06'LT 0-5 BROWN 99 99 98 88 60 17 02 A-4(0) S655 14.3 656+00 06'LT 0-5 BROWN 99 99 98 88 60 17 02 A-4(0) S655 14.3 656+00 06'LT 0-5 BROWN 99 99 98 88 60 17 02 A-4(0) S656 14.3 656+00 06'LT 0-5 BROWN 99 99 98 88 60 17 02 A-4(0) S656 14.3 656+00 06'LT 0-5 BROWN 99 99 98 88 60 17 02 A-4(0) S656 14.3 656+00 06'LT 0-5 BROWN 99 99 98 88 60 17 02 A-4(0) S656 14.3	616+00	06' LT	0-5	RD/BR	99	99	97	78	54	26	13	A-6(4)	S640	23.2
624+00 06'RT 0-5 RD/BR 100 99 98 84 65 24 11 A-6(4) S643 19.9 624+00 15'RT 0-5 RD/BR 99 99 97 84 68 24 9 A-4(3) S644 16.9 624+00 27'RT 0-5 RD/BR 99 99 97 78 57 20 5 A-4(0) S645 17.2 632+00 06'LT 0-5 BROWN 99 99 98 90 69 20 6 A-4(1) S846 17.7 632+00 15'LT 0-5 BROWN 93 92 90 84 68 21 07 A-4(2) S647 16.3 632+00 06'LT 0-5 BROWN 99 99 99 99 12 74 21 06 A-4(2) S648 14.1 640+00 06'RT 0-5 BROWN 99 99 99 97 90 59 23 08 A-4(2) S649 18.1 640+00 06'RT 0-5 BROWN 99 99 98 97 90 62 24 09 A-4(3) S650 21.1 640+00 06'LT 0-5 BROWN 99 99 98 92 74 21 06 A-4(0) S651 17.3 648+00 06'LT 0-5 BROWN 99 99 98 81 59 16 03 A-4(0) S651 17.3 648+00 06'LT 0-5 BROWN 99 99 98 97 77 54 16 03 A-4(0) S652 11 648+00 06'RT 0-5 BROWN 99 99 98 87 77 54 16 03 A-4(0) S653 14.1 648+00 06'RT 0-5 BROWN 99 99 98 87 77 54 16 03 A-4(0) S653 14.1 648+00 06'RT 0-5 BROWN 99 99 98 87 77 54 16 03 A-4(0) S655 115 656+00 06'RT 0-5 BROWN 99 99 98 88 60 17 02 A-4(0) S655 15 656+00 15'RT 0-5 BROWN 99 99 98 86 55 ND NP A-4(0) S656 14.3 656+00 06'RT 0-5 BROWN 99 99 98 86 55 ND NP A-4(0) S656 14.3 656+00 06'LT 0-5 BROWN 99 99 98 86 55 ND NP A-4(0) S656 14.3 656+00 06'LT 0-5 BROWN 99 99 98 86 55 ND NP A-4(0) S656 14.3	616+00	15' LT	0-5	RD/BR	98	98	95	76	53	24	9	A-4(6)	S641	16.5
624+00 15'RT 0-5 RD/BR 99 99 97 84 68 24 9 A-4(3) S644 16.9 624+00 27'RT 0-5 RD/BR 99 99 97 78 57 20 5 A-4(0) S645 17.2 632+00 06'LT 0-5 BROWN 99 99 98 90 69 20 6 A-4(1) S646 17.7 632+00 15'LT 0-5 BROWN 93 92 90 84 68 21 07 A-4(2) S647 16.3 632+00 27'LT 0-5 BROWN 99 99 99 92 74 21 06 A-4(2) S648 14.1 640+00 06'RT 0-5 BROWN 99 99 99 97 90 59 23 08 A-4(2) S649 18.1 640+00 15'RT 0-5 BROWN 99 98 97 90 62 24 09 A-4(3) S650 21.1 640+00 06'LT 0-5 BROWN 99 98 92 93 46 23 06 A-4(0) S651 17.3 648+00 06'LT 0-5 BROWN 99 98 97 77 54 16 03 A-4(0) S652 11 648+00 15'LT 0-5 BR/GR 99 98 97 77 54 16 03 A-4(0) S653 14.1 648+00 06'LT 0-5 BR/GR 100 99 98 77 53 ND NP A-4(0) S654 11.8 656+00 06'RT 0-5 BROWN 99 99 98 86 60 17 02 A-4(0) S655 15 656+00 15'RT 0-5 BR/GR 99 97 96 86 55 ND NP A-4(0) S656 14.3 656+00 06'LT 0-5 BR/GR 99 98 86 68 58 19 04 A-4(0) S658 14.2 664+00 16'LT 0-5 BR/GR 100 99 98 86 68 58 19 04 A-4(0) S658 14.2	616+00	27' LT	0-5	RD/BR	97	95	92	69	50	24	11	A-6(2)	S642	18.8
624+00 27'RT 0-5 RD/BR 99 99 97 78 57 20 5 A-4(0) S645 17.2 632+00 06'LT 0-5 BROWN 99 99 98 90 69 20 6 A-4(1) S646 17.7 632+00 15'LT 0-5 BROWN 99 99 99 92 74 21 06 A-4(2) S647 16.3 632+00 27'LT 0-5 BROWN 99 99 99 92 74 21 06 A-4(2) S648 14.1 640+00 06'RT 0-5 BROWN 99 99 97 90 59 23 08 A-4(2) S649 18.1 640+00 15'RT 0-5 BROWN 99 99 98 97 90 62 24 09 A-4(3) S650 21.1 640+00 27'RT 0-5 BROWN 99 99 98 92 74 23 06 A-4(0) S651 17.3 648+00 06'LT 0-5 BROWN 99 99 98 81 59 16 03 A-4(0) S652 11 648+00 15'LT 0-5 BR/GR 99 98 97 77 54 16 03 A-4(0) S653 14.1 648+00 27'LT 0-5 BR/GR 100 99 98 77 53 ND NP A-4(0) S654 11.8 656+00 06'RT 0-5 BR/GR 99 99 98 88 60 17 02 A-4(0) S655 15 656+00 15'RT 0-5 BR/GR 99 99 98 88 60 17 02 A-4(0) S655 15 656+00 27'RT 0-5 BR/GR 99 99 98 86 58 19 04 A-4(0) S657 16.6 664+00 06'LT 0-5 BR/GR 100 99 98 86 58 19 04 A-4(0) S659 15.8	624+00	06' RT	0-5	RD/BR	100	99	98	84	65	24	11	A-6(4)	S643	19.9
632+00 06'LT 0-5 BROWN 99 99 98 90 69 20 6 A-4(1) S646 17.7 632+00 15'LT 0-5 BROWN 93 92 90 84 68 21 07 A-4(2) S647 16.3 632+00 27'LT 0-5 BROWN 99 99 99 92 74 21 06 A-4(2) S648 14.1 640+00 06'RT 0-5 BROWN 99 99 99 97 90 59 23 08 A-4(2) S649 18.1 640+00 15'RT 0-5 BROWN 99 98 97 90 62 24 09 A-4(3) S650 21.1 640+00 06'LT 0-5 BROWN 99 98 92 93 46 23 06 A-4(0) S651 17.3 648+00 06'LT 0-5 BROWN 99 98 92 93 46 23 06 A-4(0) S651 17.3 648+00 06'LT 0-5 BROWN 99 98 97 77 54 16 03 A-4(0) S652 11 648+00 15'LT 0-5 BR/GR 99 98 97 77 54 16 03 A-4(0) S653 14.1 648+00 27'LT 0-5 BR/GR 100 99 98 77 53 ND NP A-4(0) S655 15 656+00 06'RT 0-5 BROWN 99 99 98 86 60 17 02 A-4(0) S655 15 656+00 15'RT 0-5 BR/GR 99 95 94 86 63 ND NP A-4(0) S656 14.3 666+00 27'RT 0-5 BR/GR 99 95 94 86 65 ND NP A-4(0) S656 14.3 666+00 27'RT 0-5 BR/GR 100 99 98 86 68 55 ND NP A-4(0) S656 14.3 666+00 15'LT 0-5 BR/GR 100 99 98 86 68 59 ND NP A-4(0) S656 14.3	624+00	15' RT	0-5	RD/BR	99	99	97	84	68	24	9	A-4(3)	S644	16.9
632+00 15'LT 0-5 BROWN 93 92 90 84 68 21 07 A-4(2) S647 16.3 632+00 27'LT 0-5 BROWN 99 99 99 92 74 21 06 A-4(2) S648 14.1 640+00 06'RT 0-5 BROWN 99 99 97 90 59 23 08 A-4(2) S649 18.1 640+00 15'RT 0-5 BROWN 99 98 97 90 62 24 09 A-4(3) S650 21.1 640+00 27'RT 0-5 BROWN 99 98 92 93 46 23 06 A-4(0) S651 17.3 648+00 06'LT 0-5 BROWN 99 99 98 81 59 16 03 A-4(0) S652 11 648+00 15'LT 0-5 BR/GR 99 98 97 77 54 16 03 A-4(0) S653 14.1 648+00 27'LT 0-5 BR/GR 100 99 98 77 53 ND NP A-4(0) S654 11.8 656+00 06'RT 0-5 BROWN 99 99 98 88 60 17 02 A-4(0) S655 15 656+00 15'RT 0-5 BR/GR 99 97 98 86 63 ND NP A-4(0) S656 14.3 656+00 27'RT 0-5 BR/GR 99 97 98 86 65 ND NP A-4(0) S656 14.3 656+00 06'LT 0-5 BR/GR 99 97 98 86 65 ND NP A-4(0) S656 14.3 656+00 06'LT 0-5 BR/GR 99 97 98 86 65 ND NP A-4(0) S656 14.3	624+00	27' RT	0-5	RD/BR	99	99	97	78	57	20	5	A-4(0)	S645	17.2
632+00 27' LT 0-5 BROWN 99 99 99 92 74 21 06 A-4(2) S648 14.1 640+00 06' RT 0-5 BROWN 99 99 97 90 59 23 08 A-4(2) S649 18.1 640+00 15' RT 0-5 BROWN 99 98 97 90 62 24 09 A-4(3) S650 21.1 640+00 27' RT 0-5 BROWN 99 98 92 93 46 23 06 A-4(0) S651 17.3 648+00 06' LT 0-5 BROWN 99 99 98 81 59 16 03 A-4(0) S652 11 648+00 15' LT 0-5 BR/GR 99 98 97 77 54 16 03 A-4(0) S653 14.1 648+00 27' LT 0-5 BR/GR 100 99 98 77 53 ND NP A-4(0) S654 11.8 656+00 06' RT 0-5 BROWN 99 99 98 88 60 17 02 A-4(0) S656 15 656+00 15' RT 0-5 BR/GR 99 95 94 86 53 ND NP A-4(0) S656 14.3 656+00 27' RT 0-5 BROWN 99 99 98 86 58 58 19 04 A-4(0) S657 16.6 664+00 06' LT 0-5 BR/GR 100 99 98 86 58 19 04 A-4(0) S658 14.2 664+00 15' LT 0-5 BR/GR 100 99 98 86 58 19 04 A-4(0) S659 15.8	632+00	06' LT	0-5	BROWN	99	99	98	90	69	20	6	A-4(1)	S646	17.7
640+00 06'RT 0-5 BROWN 99 99 97 90 59 23 08 A-4(2) S649 18.1 640+00 15'RT 0-5 BROWN 99 98 97 90 62 24 09 A-4(3) S650 21.1 640+00 27'RT 0-5 BROWN 99 98 92 93 46 23 06 A-4(0) S651 17.3 648+00 06'LT 0-5 BROWN 99 99 98 81 59 16 03 A-4(0) S652 11 648+00 15'LT 0-5 BR/GR 99 98 97 77 54 16 03 A-4(0) S653 14.1 648+00 27'LT 0-5 BR/GR 100 99 98 77 53 ND NP A-4(0) S654 11.8 656+00 06'RT 0-5 BROWN 99 99 98 88 60 17 02 A-4(0) S655 15 656+00 15'RT 0-5 BR/GR 99 95 94 86 53 ND NP A-4(0) S656 14.3 656+00 27'RT 0-5 BR/GR 99 97 96 86 55 ND NP A-4(0) S656 14.3 656+00 06'LT 0-5 BROWN 99 99 98 86 58 19 04 A-4(0) S657 16.6 664+00 15'LT 0-5 BR/GR 100 99 98 86 68 58 19 04 A-4(0) S658 14.2	632+00	15' LT	0-5	BROWN	93	92	90	84	68	21	07	A-4(2)	S647	16.3
640+00 15'RT 0-5 BROWN 99 98 97 90 62 24 09 A-4(3) S650 21.1 640+00 27'RT 0-5 BROWN 99 98 92 93 46 23 06 A-4(0) S651 17.3 648+00 06'LT 0-5 BROWN 99 99 98 81 59 16 03 A-4(0) S652 11 648+00 15'LT 0-5 BR/GR 99 98 97 77 54 16 03 A-4(0) S653 14.1 648+00 27'LT 0-5 BR/GR 100 99 98 77 53 ND NP A-4(0) S654 11.8 656+00 06'RT 0-5 BROWN 99 99 98 88 60 17 02 A-4(0) S655 15 656+00 15'RT 0-5 BR/GR 99 95 94 86 53 ND NP A-4(0) S656 14.3 656+00 27'RT 0-5 BROWN 99 97 96 86 55 ND NP A-4(0) S656 14.3 656+00 06'LT 0-5 BR/GR 100 99 98 86 58 19 04 A-4(0) S658 14.2 664+00 15'LT 0-5 BR/GR 99 99 98 88 60 17 04 A-4(0) S658 14.2	632+00	27' LT	0-5	BROWN	99	99	99	92	74	21	06	A-4(2)	S648	14.1
640+00 27' RT 0-5 BROWN 99 98 92 93 46 23 06 A-4(0) S651 17.3 648+00 06' LT 0-5 BROWN 99 99 98 81 59 16 03 A-4(0) S652 11 648+00 15' LT 0-5 BR/GR 99 98 97 77 54 16 03 A-4(0) S653 14.1 648+00 27' LT 0-5 BR/GR 100 99 98 77 53 ND NP A-4(0) S654 11.8 656+00 06' RT 0-5 BR/GR 99 99 98 88 60 17 02 A-4(0) S655 15 656+00 15' RT 0-5 BR/GR 99 97 96 86 55 ND NP A-4(0) S656 14.3 656+00 27' RT 0-5 BROWN 99 99 98 86 58 19 04 A-4(0) S658 14.2 664+00 06' LT 0-5 BR/GR 100 99 98 86 68 50 17 04 A-4(0) S658 14.2	640+00	06' RT	0-5	BROWN	99	99	97	90	59	23	80	A-4(2)	S649	18.1
648+00 06' LT 0-5 BROWN 99 99 98 81 59 16 03 A-4(0) S652 11 648+00 15' LT 0-5 BR/GR 99 98 97 77 54 16 03 A-4(0) S653 14.1 648+00 27' LT 0-5 BR/GR 100 99 98 77 53 ND NP A-4(0) S654 11.8 656+00 06' RT 0-5 BROWN 99 99 98 88 60 17 02 A-4(0) S655 15 656+00 15' RT 0-5 BR/GR 99 95 94 86 53 ND NP A-4(0) S656 14.3 656+00 27' RT 0-5 BROWN 99 97 96 86 55 ND NP A-4(0) S657 16.6 664+00 06' LT 0-5 BR/GR 100 99 98 86 58 19 04 A-4(0) S658 14.2 664+00 15' LT 0-5 BR/GR 99 99 98 88 60 17 04 A-4(0) S659 15.8	640+00	15' RT	0-5	BROWN	99	98	97	90	62	24	09	A-4(3)	S650	21.1
648+00 15' LT 0-5 BR/GR 99 98 97 77 54 16 03 A-4(0) S653 14.1 648+00 27' LT 0-5 BR/GR 100 99 98 77 53 ND NP A-4(0) S654 11.8 656+00 06' RT 0-5 BROWN 99 99 98 88 60 17 02 A-4(0) S655 15 656+00 15' RT 0-5 BR/GR 99 95 94 86 53 ND NP A-4(0) S656 14.3 656+00 27' RT 0-5 BROWN 99 97 96 86 55 ND NP A-4(0) S657 16.6 664+00 06' LT 0-5 BR/GR 100 99 98 86 58 19 04 A-4(0) S658 14.2 664+00 15' LT 0-5 BR/GR 99 99 98 88 60 17 04 A-4(0) S659 15.8	640+00	27' RT	0-5	BROWN	99	98	92	93	46	23	06	A-4(0)	S651	17.3
648+00 27' LT 0-5 BR/GR 100 99 98 77 53 ND NP A-4(0) S654 11.8 656+00 06' RT 0-5 BROWN 99 99 98 88 60 17 02 A-4(0) S655 15 656+00 15' RT 0-5 BR/GR 99 95 94 86 53 ND NP A-4(0) S656 14.3 656+00 27' RT 0-5 BROWN 99 97 96 86 55 ND NP A-4(0) S657 16.6 664+00 06' LT 0-5 BR/GR 100 99 98 86 58 19 04 A-4(0) S658 14.2 664+00 15' LT 0-5 BR/GR 99 99 98 88 60 17 04 A-4(0) S659 15.8	648+00	06' LT	0-5	BROWN	99	99	98	81	59	16	03	A-4(0)	S652	11
656+00 06'RT 0-5 BROWN 99 99 98 88 60 17 02 A-4(0) S655 15 656+00 15'RT 0-5 BR/GR 99 95 94 86 53 ND NP A-4(0) S656 14.3 656+00 27'RT 0-5 BROWN 99 97 96 86 55 ND NP A-4(0) S657 16.6 664+00 06'LT 0-5 BR/GR 100 99 98 86 58 19 04 A-4(0) S658 14.2 664+00 15'LT 0-5 BR/GR 99 99 98 88 60 17 04 A-4(0) S659 15.8	648+00	15' LT	0-5	BR/GR	99	98	97	77	54	16	03	A-4(0)	S653	14.1
656+00 15' RT 0-5 BR/GR 99 95 94 86 53 ND NP A-4(0) S656 14.3 656+00 27' RT 0-5 BROWN 99 97 96 86 55 ND NP A-4(0) S657 16.6 664+00 06' LT 0-5 BR/GR 100 99 98 86 58 19 04 A-4(0) S658 14.2 664+00 15' LT 0-5 BR/GR 99 99 98 88 60 17 04 A-4(0) S659 15.8	648+00	27' LT	0-5	BR/GR	100	99	98	77	53	ND	NP	A-4(0)	S654	11.8
656+00 27' RT 0-5 BROWN 99 97 96 86 55 ND NP A-4(0) S657 16.6 664+00 06' LT 0-5 BR/GR 100 99 98 86 58 19 04 A-4(0) S658 14.2 664+00 15' LT 0-5 BR/GR 99 99 98 88 60 17 04 A-4(0) S659 15.8	656+00	06' RT	0-5	BROWN	99	99	98	88	60	17	02	A-4(0)	S655	15
664+00 06' LT 0-5 BR/GR 100 99 98 86 58 19 04 A-4(0) S658 14.2 664+00 15' LT 0-5 BR/GR 99 99 98 88 60 17 04 A-4(0) S659 15.8	656+00	15' RT	0-5	BR/GR	99	95	94	86	53	ND	NP	A-4(0)	S656	14.3
664+00 15'LT 0-5 BR/GR 99 99 98 88 60 17 04 A-4(0) S659 15.8	656+00	27' RT	0-5	BROWN	99	97	96	86	55	ND	NP	A-4(0)	S657	16.6
Including Comment Continued Internal Incomment	664+00	06' LT	0-5	BR/GR	100	99	98	86	58	19	04	A-4(0)	S658	14.2
664+00 27' LT 0-5 BROWN 97 95 93 84 63 17 04 A-4(0) S660 15	664+00	15' LT	0-5	BR/GR	99	99	98	88	60	17	04	A-4(0)	S659	15.8
	664+00	27' LT	0-5	BROWN	97	95	93	84	63	17	04	A-4(0)	S660	15

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

(SPEC. YEAR - 2014 SUPPLIER ID 1 COUNTY/STATE - 14 DISTRICT NO 07 (S) DATE SAMPLED - 11/03/15 DATE RECEIVED - 11/05/15 DATE TESTED - 11/30/15
a Ma	MENT SOUNDINGS
2 2 *	- 20153601 - 20153602 - S558 - S559 - INFORMATION ONLY - INFORMATION ONLY - 371+00 - 371+00
2 2	15' RT 27' RT 0-5
=======================================	BROWN RD/BR
**	33 19 27.50 = 33 19 27.40 93 18 1.90 93 18 2.00
	100 100 99 99 99 91 88 79 75
	45 39 - 27 = 27 - 11 - 12 - A-6(2) - A-6(1) - 16.1 17.6
	3.0W 2.0
4	EN

REMARKS - W=MULTIPLE LAYERS, X=STRIPPED

- ALL LOCATIONS MEASURED FROM CENTERLINE OF EXISTING HIGHWAY

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

**	* SOIL	SURVEY / PAVEMENT	SO	UNDING TEST	REPORT	***	
DATE - 11/30/15 SEQUENCE NO JOB NUMBER - CA0705 MATERIAL CODE - FEDERAL AID NO TO BE ASSIGNED SPEC. YEAR - PURPOSE - SOIL SURVEY SAMPLE SUPPLIER ID SPEC. REMARKS - NO SPECIFICATION CHECK COUNTY/STATE - SUPPLIER NAME - STATE DISTRICT NO NAME OF PROJECT - HWY.98 - HWY.79 (WIDENING) (S) PROJECT ENGINEER - NOT APPLICABLE PIT/QUARRY - ARKANSAS LOCATION - COLUMBIA, COUNTY DATE SAMPLED -							
SAMPLED BY - T.FRAZ	ZIER					CEIVED - 11/05/15	
SAMPLE FROM - TEST MATERIAL DESC SOI		מור די אור די אור	יום א מביי	TATE COLUMN		STED - 11/30/15	
LAB NUMBER SAMPLE ID TEST STATUS	-	20153603 S560 INFORMATION ONLY	3	20153604 S561 INFORMATIO	ON ONLY -	20153605 S562 INFORMATION ONLY	
STATION		379+00	=	379+00		379+00	
LOCATION DEPTH IN FEET	-	00 11	=	15' LT 0-5		27' LT 0-5	
MAT'L COLOR		RD/BR	-	BROWN	i-	BROWN	
MAT'L TYPE	-		-		15	•	
LATITUDE DEG-MIN- LONGITUDE DEG-MIN-	SEC - SEC -	33 19 22.60 93 17 54.50	-	33 19 3 93 17	22.70 - 54.40		
% PASSING 2	IN -		-		*	e:	
· -	IN		-		: :		
	IN		_		≅	ia S	
	4 -	100	-	100	56	*i	
NO.	10 -	99	_	99		100	
	40 -	98	-	97	-	99	
	80 - 200 -	93	-	88 68	1	98	
NO.		80				91	
LIQUID LIMIT	-		**	23	9	- 34 - 14	
PLASTICITY INDEX AASHTO SOIL	-	12 A-6(8)	=	07 A-4(2)		A-6(13)	
UNIFIED SOIL	_	A-0(0)	-	A 1(2)	6	A-0(13)	
% MOISTURE CONTENT	_	22.5	=	18.0	5	24.3	
ACHMSC	(IN) -	4.0W	77/	2.5		- 	
ACHMBC	(IN) -	2.5	2				
SOIL CEMENT BASE	(IN) -	6.0	-	6.0		H.H.H.	
	_		-			-	
	_		=			_	
	_		-			- -	
	-		=			- 2	
	_		-			-	

REMARKS - W= MULTIPLE LAYERS, X= STRIPPED

- ALL LOCATIONS MEASURED FROM CENTERLINE OF EXISTING HIGHWAY

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.

MICHAEL BENSON, MATERIALS ENGINEER

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

DATE - 11/ JOB NUMBER - CAO FEDERAL AID NO TO : PURPOSE - SOI: SPEC. REMARKS - NO : SUPPLIER NAME - STA' NAME OF PROJECT - H PROJECT ENGINEER - N PIT/QUARRY - ARKAN LOCATION - COLUM SAMPLED BY - T.FRAZ SAMPLE FROM - TEST	705 BE ASSI L SURVE SPECIFI TE WY.98 - OT APPL SAS BIA, CC IER	Y SAMPLE CATION CHECK HWY.79 (WIDENING) ICABLE) (S)	MATERIAL SPEC. YE SUPPLIER COUNTY/S DISTRICT DATE SAM DATE REC	NO 3 CODE - SSRVPS AR - 2014 ID 1 TATE - 14 NO 07 MPLED - 11/03/15 EEIVED - 11/05/15 STED - 11/30/15
MATERIAL DESC SOI	L SURVE	EY - R VALUE- PAV	EME	ENT SOUNDIN	GS	
LAB NUMBER SAMPLE ID TEST STATUS STATION LOCATION	- - -	S563	3	20153607 S564 INFORMATIO 390+00 15' RT	ON ONLY -	20153608 S565 INFORMATION ONLY 390+00 27' RT
DEPTH IN FEET		0-5	=	0-5	-	0-5
MAT'L COLOR MAT'L TYPE		BROWN	**	BROWN	-	RD/BR
LATITUDE DEG-MIN-	SEC -	33 19 15.50	-	33 19	15.50 -	33 19 15.50
LONGITUDE DEG-MIN-	SEC -	93 17 44.60		93 17	44.70	93 17 44.80
3/4 3/8 NO. NO. NO.	IN IN IN 4 - 10 - 40 -	100 99 98 90 62		100 99 99 97 87 59	- - - - - -	100 98 95 93 92 88 67
LIQUID LIMIT	-	28	_	27	-	29
PLASTICITY INDEX	-	08	-	08	9	08
AASHTO SOIL	-	A-4(3)	-	A-4(2)	-	A-4 (4)
UNIFIED SOIL	-		-		-	(47)
% MOISTURE CONTENT	-	20.6	_	19.0	1761	19.7
ACHMSC	(IN) -	3.5W		2.5W	_	
ACHMBC	(IN) -	2.5W	-		_	
SOIL CEMENT BASE	(IN) -	6.0	-	7.0	-	H.H.H.
	_		-		_	
	_		-		_	
	-		-		-	
	-		-		-	et
	_		-		-	

REMARKS - W=MULTIPLE LAYERS, X=STRIPPED

- ALL LOCATIONS MEASURED FROM CENTERLINE OF EXISTING HIGHWAY

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MICHAEL BENSON, MATERIALS ENGINEER

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

•	, POIL	SURVEY / PAVEMENT	50	ONDING IESI	I REPORT			
DATE - 11/30/15 SEQUENCE NO 4 JOB NUMBER - CA0705 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 - 14 SUPPLIER NAME - STATE DISTRICT NO 07 NAME OF PROJECT - HWY.98 - HWY.79 (WIDENING) (S) PROJECT ENGINEER - NOT APPLICABLE PIT/QUARRY - ARKANSAS								
	MBIA, CO	UNTY			DATE SAN	MPLED - 11/03/15		
SAMPLED BY - T.FRA	ZIER					CEIVED - 11/05/15		
SAMPLE FROM - TEST					DATE TES	STED - 11/30/15		
MATERIAL DESC SO	IL SURVE	Y - R VALUE- PAV	EME	ENT SOUNDING	GS			
LAB NUMBER	-	20153609	#0	20153610	-	20153611		
SAMPLE ID	=	S566	-	S567	-	S568		
TEST STATUS			==0			INFORMATION ONLY		
STATION		398+00	_	398+00		398+00		
LOCATION		06' LT	-	15' LT	-	27' LT		
DEPTH IN FEET		0-5 RD/BR	=	0-5 RD/BR	-	0-5 BR/GR		
MAT'L COLOR MAT'L TYPE	=	RD/BR	3	KD/BK	=	BR/GR		
LATITUDE DEG-MIN				33 19	10.70	33 19 10.70		
LONGITUDE DEG-MIN	-SEC -	93 17 37.30		93 17	37.20	93 17 37.10		
% PASSING 2	IN		-		-			
1 1/2	2 IN		-		_			
	1 IN		#		-	060		
· · · · · · · · · · · · · · · · · · ·	B IN. =		-	100	-	100		
	4 -	100	-	99 99		99		
	10 -	99	*	99	=	99 98		
NO.			-	90	-			
	200 -			65	-	65		
LIQUID LIMIT PLASTICITY INDEX	=		-	27 07	:	30 10		
AACHTO COTI.	20		=	A-4(3)	-	A-4(5)		
UNIFIED SOIL	-	A-0 (0)	=	A 4(3)	-	A-4 (5)		
% MOISTURE CONTENT	r =	23.0	-	19.5	=	23.2		
ACHMSC	(IN) -	4.25W	(20)	3.0				
ACHMBC	(IN) -	2.0	-		-			
SOIL CEMENT BASE	(IN) _	8.0	===	6.0	= =			
	=		-		= = =			
	-		-		-			
	₩.		-		7	136		
	4 0		-		2			
	-		_					

REMARKS - W=MULTIPLE LAYERS, X=STRIPPED

- ALL LOCATIONS MEASURED FROM CENTERLINE OF EXISTING HIGHWAY

AASHTO TESTS : T24 T88 T89 T90 T265

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MICHAEL BENSON, MATERIALS ENGINEER

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

DATE - 11/30/15 JOB NUMBER - CA0705 FEDERAL AID NO TO BE ASSIGNED PURPOSE - SOIL SURVEY SAMPLE SPEC. REMARKS - NO SPECIFICATION CHECK SUPPLIER NAME - STATE NAME OF PROJECT - HWY.98 - HWY.79 (WIDENING) (S) PROJECT ENGINEER - NOT APPLICABLE PIT/QUARRY - ARKANSAS								
LOCATION - COLUM SAMPLED BY - T.FRAZ	BIA, CC	UNTY				PLED - 11/03/15 EIVED - 11/05/15		
SAMPLE FROM - TEST					DATE REC			
MATERIAL DESC SOI	L SURVE	Y - R VALUE- PAV	EME	ENT SOUNDING	GS	16		
LAB NUMBER	-	20153612		20153613	72	20153614		
SAMPLE ID	-	S569		S570		S571		
TEST STATUS	-		*			INFORMATION ONLY		
STATION		406+00	-	406+00	-	414+00		
LOCATION DEPTH IN FEET		06' RT 0-5	20	15' RT	250- 241	12' LT 0-5		
MAT'L COLOR	_		+	0-5 BROWN	-	BR/GR		
MAT'L TYPE	_	KD/ BK	:#8 :20	BROWN	:=:	BK/ GK		
LATITUDE DEG-MIN-	SEC -	33 19 5.40	20	33 19	5.40	33 19 .50		
LONGITUDE DEG-MIN-	SEC -	93 17 30.20		93 17	30.20	93 17 22.60		
% PASSING 2	IN		-		-			
1 1/2	IN		77		::			
3/4	IN		-		-	100		
3/8	IN	100	-	100	-	99		
NO.	4 -	99	-	99	_	99		
NO.		99	2	99	-	99		
NO.	-	98	**	99	-	96		
NO.		84	~	86	-	86		
NO.	200 -	53		59		61		
LIQUID LIMIT	-	23	-	26		25		
PLASTICITY INDEX	-	07	-	11	=	07		
AASHTO SOIL	-	A-4(1)	-	A-6(4))=-	A-4(2)		
UNIFIED SOIL	-		_		-			
% MOISTURE CONTENT	-	17.2		17.6		20.9		
ACHMSC	(IN) -	5.5W	-	3.75W	-	4.5W		
ACHMBC	(IN) -	200	-		_	10.5W		
SOIL CEMENT BASE	(IN) -	6.0	*	6.0	_			
SAND	(IN)		-		_	6.0		
	20		70		-			
	-		-		-			
	======================================				-			
	4		-		_			

REMARKS - W=MULTIPLE LAYERS, X=STRIPPED

- ALL LOCATIONS MEASURED FROM CENTERLINE OF EXISTING HIGHWAY

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MICHAEL BENSON, MATERIALS ENGINEER

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

	. 2011	SORVEI / PAVEMENI	50	ONDING 1E2	I REPORT	
SPEC. REMARKS - NO SUPPLIER NAME - STA NAME OF PROJECT - H PROJECT ENGINEER - N PIT/QUARRY - ARKAN LOCATION - COLUM SAMPLED BY - T.FRAZ SAMPLE FROM - TEST MATERIAL DESC SOI	705 BE ASSI L SURVE SPECIFI TE WY.98 - OT APPL ISAS BIA, CO ZIER HOLE	Y SAMPLE CATION CHECK HWY.79 (WIDENING ICABLE UNTY) (MATERIAL SPEC. YE SUPPLIER COUNTY/S DISTRICT DATE SAM DATE REC DATE TES	APLED - 11/03/15 CEIVED - 11/30/15
LAB NUMBER	-	20153615	-	20153616	-	20153617
SAMPLE ID	-	S572	-	S573	5=	S574
TEST STATUS	-	INFORMATION ONLY	-	INFORMATIO	ON ONLY -	INFORMATION ONLY
STATION	-	414+00	-	414+00	-	422+00
LOCATION		21' LT	_	33' LT	-	06' RT
DEPTH IN FEET		0-5	_	0-5	-	
MAT'L COLOR MAT'L TYPE	-	BR/GR	-	BR/GR	2	RD/BR
LATITUDE DEG-MIN-	CEC	33 19 .60	-	33 19	.70 =	33 18 55.30
LONGITUDE DEG-MIN-						93 17 15.60
% PASSING 2	IN					
	IN		2		_	
	IN		_	100	_	1.60
•	IN	100	=	98	-	100
,	4 -		2	96	-	99
NO.			~	95	-	99
	40 -		*	87	-	99
NO.			2	80	-	
	200 -		-	65	_	75
LIQUID LIMIT	-		-	23	-	27 09
	-		-	0.5		
	-	A-4(1)	-	A-4(1)	(-	A-4 (5)
UNIFIED SOIL % MOISTURE CONTENT	_	16.6	2	19.5	-	23.1
	(IN) -	2.5	-		_	6.5W
ASHMBC	(IN) -		*		_	7.0W
SOIL CEMENT BASE	(IN) -		275		=	6.0
AGG. BASE CRS. CL5	(IN) -	10.0	-		-	222
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	5		-		_	
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REMARKS - W=MULTIPLE LAYERS, X=STRIPPED

- ALL LOCATIONS MEASURED FROM CENTERLINE OF EXISTING HIGHWAY

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

* *	* SOIL	SURVEY / PAVEMENT	SC	ONDING TES.	r REPORT ,	***	
DATE - 11/30/15 SEQUENCE NO 7 JOB NUMBER - CA0705 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 - 14 SUPPLIER NAME - STATE DISTRICT NO 07 NAME OF PROJECT - HWY.98 - HWY.79 (WIDENING) (S) PROJECT ENGINEER - NOT APPLICABLE PIT/QUARRY - ARKANSAS							
LOCATION - COLUM	BIA, CC	UNTY			DATE SAM	MPLED - 11/03/15	
SAMPLED BY - T.FRA2						CEIVED - 11/05/15	
SAMPLE FROM - TEST		מתר בונדותנו כו עני	7175/71	NAME COLDINATE		TED - 11/30/15	
MATERIAL DESC SOI	LL SURVE						
LAB NUMBER	-	20133010				20153620	
SAMPLE ID		S575		S576		S577	
TEST STATUS STATION				1NFORMATIC 422+00		INFORMATION ONLY 430+00	
LOCATION	_		-	422+00 27' RT	-	18' LT	
DEPTH IN FEET		0-5	-	0-5	-	0-5	
	_		_	RD/BR	-	BR/GR	
MAT'L TYPE	-		-		-	'	
LATITUDE DEG-MIN-					55.10 -	33 18 50.40	
LONGITUDE DEG-MIN-	SEC -	93 17 15.70		93 17	15.70	93 17 8.10	
% PASSING 2	IN IN		-		5=1	, ®	
	IN	100	2	100	-		
•	IN		ŭ.	99	120		
•	4 -		÷	97	-	100	
NO.	10 -	96	 E	95	-	99	
NO.	40 -	94	2	92	1.77 =	98	
NO.	80 -	89	*	89	-	90	
NO.	200 -	79		72		49	
LIQUID LIMIT	_	24	_	23	.=	ND	
PLASTICITY INDEX	_	06	-	05	-	NP	
AASHTO SOIL	-	A-4(3)	-	A-4(1)	-	A-4(0)	
UNIFIED SOIL	-		-		(=)		
% MOISTURE CONTENT	_	20.7	-	17.9	-	15.5	
ACHMSC	(IN) -	4.25W	-	ase.	-	5.75W	
ACHMBC	(IN) -	5.5W	-	*****	-	10.0W	
SOIL CEMENT BASE	(IN) _	6 : 0	_	(m, m, m)	_	光光表:	
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REMARKS - W=MULTIPLE LAYERS, X=STRIPPED

- ALL LOCTAIONS MEASURED FROM CENTERLINE OF EXISTING HIGHWAY

MICHAEL BENSON, MATERIALS ENGINEER

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

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DATE - 11/	30/15				SEQUENCE	NO 8
JOB NUMBER - CA0	705				MATERIAL	CODE - SSRVPS
FEDERAL AID NO TO	SPEC. YE	AR - 2014				
PURPOSE - SOI					SUPPLIER	ID 1
SPEC. REMARKS - NO	SPECIFI	CATION CHECK			COUNTY/S	STATE - 14
SUPPLIER NAME - STA						'NO 07
NAME OF PROJECT - H	WY.98 -	HWY.79 (WIDENING) (S)		35
PROJECT ENGINEER - N	OT APPL	ICABLE				
PIT/QUARRY - ARKAN	SAS					
LOCATION - COLUM	BIA, CO	UNTY			DATE SAI	MPLED - 11/03/15
SAMPLED BY - T.FRAZ						CEIVED - 11/05/15
SAMPLE FROM - TEST						STED - 11/30/15
MATERIAL DESC SOI	_	Y - R VALUE- PAV	EME	ENT SOUNDING		11,30,13
LAB NUMBER		20153621		20153622	_	20153623
SAMPLE ID	=	S578	=	S579	-	S580
TEST STATUS	-	INFORMATION ONLY	-	INFORMATIC	N ONLY -	INFORMATION ONLY
STATION	-	430+00	_	430+00		438+00
LOCATION	-	27' LT	-	36' LT	-	06' RT
DEPTH IN FEET		0-5	- #3 - 53	0-5	_	0-5
MAT'L COLOR	3	BR/GR		BR/GR	_	BROWN
MAT'L TYPE	3 33		3 4 3		_	
LATITUDE DEG-MIN-	SEC -	33 18 50.50	-	33 18 9	50.50 -	33 18 45.20
LONGITUDE DEG-MIN-	SEC -	93 17 8.10		93 17	8.00	93 17 1.00
% PASSING 2	IN					
	IN		_			· ·
	IN	100	_		-	
		99	_	100	_	3.00
	4 -	97	_	100 99	_	100 99
			-		-	
NO.		93	-	98	-	99
		89	-	95	-	98
NO.		83	_	88	-	92
NO.	200 -	48		45		60
LIQUID LIMIT		18	=	ND	30-	27
PLASTICITY INDEX	*	04	-	NP	=	09
AASHTO SOIL	=	A-4(0)	57. 10	A-4(0)	-	A-4(3)
UNIFIED SOIL	S			, ,	-	
% MOISTURE CONTENT	=	12.0	-	14.3	39	18.1
ACHMSC	(IN) -	2.0	-		-	3.5W
ACHMBC	(IN) -		-		-	8.0W
SOIL CEMENT BASE	(IN) -		-		-	6.0
AGG. BASE CRS. CL5	(IN) -	12.0	-		-	
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REMARKS - W=MULTIPLE LAYERS, X=STRIPPED

- ALL LOCATIONS MEASURED FROM CENTERLINE OF EXISTING HIGHWAY

MICHAEL BENSON, MATERIALS ENGINEER

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

DATE - 11/ JOB NUMBER - CAC FEDERAL AID NO TO PURPOSE - SOI SPEC. REMARKS - NO SUPPLIER NAME - STA NAME OF PROJECT - E PROJECT ENGINEER - N PIT/QUARRY - ARKAN LOCATION - COLUM SAMPLED BY - T.FRAZ SAMPLE FROM - TEST MATERIAL DESC SOI	BE ASSI L SURVE SPECIFI TE WY.98 - TOT APPI JISAS MBIA, CO ZIER HOLE	Y SAMPLE CATION CHECK HWY.79 (WIDENING ICABLE UNTY		MATERIAL SPEC. YEA SUPPLIER COUNTY/ST DISTRICT DATE SAM DATE REC DATE TES	TATE - 14
LAB NUMBER	_	20153624	- 20153625	947	20153626
SAMPLE ID	-	\$581	_ S582		S583
TEST STATUS	-	INFORMATION ONLY	- INFORMATI	ON ONLY 🖛	INFORMATION ONLY
STATION		438+00	- 438+00	:##	446+00
LOCATION		15' RT	- 27' RT	-	18' LT
DEPTH IN FEET		0-5	0-5		0-5
MAT'L COLOR MAT'L TYPE	-	BROWN	_ RD/BR		BR/GR
LATITUDE DEG-MIN-	- GEC _	33 18 45 10	- - 33 18	45.00	33 18 40.30
LONGITUDE DEG-MIN-				1.20	93 16 53.50
		2,9 -7 -11-0	33 1.	1.20	10 33.30
% PASSING 2			50 40	-	
•	IN		⊕:	-	
-	IN		100) = ;	100
	4 -	100	99	(2)	98
NO.		99	99		96
NO.		98	98	_	94
NO.	80 -	90	94		84
NO.	200 -	64	66		63
LIQUID LIMIT	_	28	= 26	·	24
PLASTICITY INDEX	_	14	- 10	-	07
AASHTO SOIL	-	A-6(6)	A-4(4)	355	A-4(2)
UNIFIED SOIL	-		30	(77)	
% MOISTURE CONTENT	-	18.5	15.8		21.3
ACHMSC	(IN) -	2.25		2	6.0W
ACHMBC	(IN) -	7.5		2	9.25W
CHIP SEAL	(IN) -	0.25		-	d see
SOIL CEMENT BASE	(IN) -	8.0			
	_		141	22	
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	_			7	
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REMARKS - W=MULTIPLE LAYERS, X=STRIPPED

- ALL LOCATIONS MEASURED FROM CENTERLINE OF EXISTING HIGHWAY

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MICHAEL BENSON, MATERIALS ENGINEER

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

DATE - 11/30/15 SEQUENCE NO 10 JOB NUMBER - CA0705 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 - 14 SUPPLIER NAME - STATE DISTRICT NO 07 NAME OF PROJECT - HWY.98 - HWY.79 (WIDENING) (S) PROJECT ENGINEER - NOT APPLICABLE PIT/QUARRY - ARKANSAS LOCATION - COLUMBIA, COUNTY DATE SAMPLED - 11/03/1 SAMPLED BY - T.FRAZIER DATE RECEIVED - 11/05/1 SAMPLE FROM - TEST HOLE DATE TESTED - 11/30/1							
MATERIAL DESC SO	IL SURVE	Y - R VA	LUE- PAV	EME	NT SOUNDIN	GS	
LAB NUMBER SAMPLE ID TEST STATUS STATION	-	446+00	ION ONLY		446+00	ON ONLY -	20153629 S586 INFORMATION ONLY 454+00
LOCATION	-	27' LT		20	36' LT	() To	06' RT
DEPTH IN FEET		0-5		-	0-5	-	0-5
MAT'L COLOR	-	BR/GR		-	BR/GR		BR/GR
MAT'L TYPE	-	22 10	40 40	•	22 -		22 10 25 00
LATITUDE DEG-MIN-			40.40	-	33 18		33 18 35.00
LONGITUDE DEG-MIN-	SEC -	93 16	53.50		93 16	53.40	93 16 46.50
% PASSING 2	INA -			*		-	
1 1/2	IN			•		-	
3/4	IN				100	-	
3/8	IN	100			98	-	100
NO.	4 -	98		-	97	_	99
NO.	10 -	95		2	96	_	97
NO.	40 -	89		-	93	-	94
NO.	80 -	84		-	82	-	83
NO.	200 -	59			56		55
LIQUID LIMIT	_	23		_	17	-	22
PLASTICITY INDEX	_	08		_	03	199 194	08
AASHTO SOIL	_	A-4(2)		_	A-4(0)	:=:	-A-4(1)
UNIFIED SOIL	_	A 4(2)		-	A 4(0)	S#6	>N-4(I)
% MOISTURE CONTENT	_	14.4		-	14.2	34	20.1
ACHMSC	(IN) -	2.25		-		_	2.5W
ACHMBC	(IN) -			-		=	1.5W
SOIL CEMENT BASE	(IN) -			-		-	4.0
AGG. BASE CRS. CL5	(IN) -	11.0		-		-	
	-						
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REMARKS - W=MULTIPLE LAYERS, X=STRIPPED

- ALL LOCATIONS MEASURED FROM CENTERLINE OF EXISTING HIGHWAY

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

DATE - 11/30/15 SEQUENCE NO. - 11 JOB NUMBER - CA0705 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 - 14 SUPPLIER NAME - STATE DISTRICT NO. - 07

NAME OF PROJECT - HWY.98 - HWY.79 (WIDENING) (S)

PROJECT ENGINEER - NOT APPLICABLE

PIT/QUARRY - ARKANSAS

LOCATION - COLUMBIA, COUNTY DATE SAMPLED - 11/03/15 SAMPLED BY - T.FRAZIER DATE RECEIVED - 11/05/15 SAMPLE FROM - TEST HOLE DATE TESTED - 11/30/15

MATERIAL DESC. - SOIL SURVEY - R VALUE- PAVEMENT SOUNDINGS

LAB NUMBER SAMPLE ID TEST STATUS STATION LOCATION DEPTH IN FEET MAT'L COLOR MAT'L TYPE LATITUDE DEG-MIN-SEC	-	20153630 S587 INFORMATION ONLY 454+00 15' RT 0-5 BR/GR		454+00 24' RT 0-5 BR/GR			S589 INFORMAT 462+00 18' LT 0-5 BROWN	ION ONLY
LONGITUDE DEG-MIN-SEC	-	93 16 46.60		93 16	46.60		93 16	38.90
NO. 10	- - -	100 99 97 95 84 62		100 99 98 96 80 52			100 99 99 98 97 84 59	
LIQUID LIMIT	-	25	-	18		-	19	
PLASTICITY INDEX	-	11	**	04			03	
AASHTO SOIL	-	A-6(4)	======================================	A-4(0)		-	A-4(0)	
UNIFIED SOIL % MOISTURE CONTENT	_	19.6	-	19.0		-	27.5	
ACHMSC (IN)	-	1.5X	_			_	6.0W	
ACHMBC (IN)	-	6.5WX	-			-	10.0W	
CHIP SEAL (IN)	-	1.5X	-			-		
SOIL CEMENT BASE (IN)	:=	6.0	_			_		
	-		_			_		
	12		-			-	este.	
	()		-			-	140.0	
	150		-			-		

REMARKS - W=MULTIPLE LAYERS, X=STRIPPED

- ALL LOCATIONS MEASURED FROM CENTERLINE OF EXISTING HIGHWAY

MICHAEL BENSON, MATERIALS ENGINEER

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

DATE - 11/30/15 SEQUENCE NO 12 JOB NUMBER - CA0705 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 - 14 SUPPLIER NAME - STATE DISTRICT NO 07 NAME OF PROJECT - HWY.98 - HWY.79 (WIDENING) (S) PROJECT ENGINEER - NOT APPLICABLE PIT/QUARRY - ARKANSAS LOCATION - COLUMBIA, COUNTY DATE SAMPLED - 11/03/ SAMPLED BY - T.FRAZIER DATE RECEIVED - 11/05/							
SAMPLE FROM - TEST					DATE TES		
MATERIAL DESC SOI	L SURVE	Y - R VALUE- PAVI	EME	ENT SOUNDING	GS		
LAB NUMBER	-	20153633	-	20153634	:	20153635	
SAMPLE ID	-	S590	-	S591	-	S592	
TEST STATUS	-	INFORMATION ONLY	-	INFORMATIO	ON ONLY	INFORMATION ONLY	
STATION	-	462+00	-	462+00	7=	470+00	
LOCATION		27' LT	_	36' LT		06' RT	
DEPTH IN FEET		0-5	_	0-5	-	0-5	
MAT'L COLOR MAT'L TYPE	_	BROWN	-	BROWN	-	BROWN	
LATITUDE DEG-MIN-	SEC -	33 18 30 20	_	33 18	30.20 -	33 18 24.80	
LONGITUDE DEG-MIN-					38.80	93 16 31.90	
	IN		=======================================		1 5 2		
•	IN -	100	22		~	i ®	
·		99	-	100	-	100	
NO.		97	π	99	=	99	
NO.		93	~	96	-	99	
	40 -	88	-	92	-	98	
NO.		74	-	78	-	86	
	200 -			58	-	56	
LIQUID LIMIT	_	20	2	22	_	18	
PLASTICITY INDEX	_		2	05	-	102	
AASHTO SOIL	_		-	A-4(0)	-	A-4(0)	
UNIFIED SOIL	_	11 1(0)	57	11 1(0)	-	11 1 (0)	
% MOISTURE CONTENT	_	13.6	1	19.0	_	14.7	
ACHMSC	(IN) -	2.25	-		-	2.5	
ACHMBC	(IN) -		-		-	12.0W	
SOIL CEMENT BASE	(IN) -		*		-	6.0	
AGG. BASE CRS. CL5	(IN) -	8.0	-		-		
	_		_		_	Set	
	-		-		-	•	
	-		-		=		
	-		-		_		
	_		-		-		

REMARKS - W=MULTIPLE LAYERS, X=STRIPPED

- ALL LOCATIONS MEASURED FROM CENTERLINE OF EXISTING HIGHWAY

AASHTO TESTS : T24 T88 T89 T90 T265

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

	. DOTH	BORVET / PAVER	ENI DO	ONDING IED	I KELOKI	
DATE - 11/ JOB NUMBER - CAO FEDERAL AID NO - TO PURPOSE - SOI SPEC. REMARKS - NO SUPPLIER NAME - STA NAME OF PROJECT - H PROJECT ENGINEER - N PIT/QUARRY - ARKAN LOCATION - COLUM SAMPLE FROM - TEST	705 BE ASSI L SURVE SPECIFI TE WY.98 - OT APPI SAS BIA, CC	Y SAMPLE CATION CHECK HWY.79 (WIDEN		S)	MATERIAL SPEC. YEA SUPPLIER COUNTY/ST DISTRICT DATE SAM	PLED - 11/03/15 EIVED - 11/05/15
MATERIAL DESC SOI	L SURVE	EY - R VALUE-	PAVEME	NT SOUNDI	1GS	
LAB NUMBER SAMPLE ID TEST STATUS STATION LOCATION DEPTH IN FEET	- - - -	S593 INFORMATION O 470+00 15' RT 0-5	NLY -	470+00 24' RT 0-5	ON ONLY -	20153638 S595 INFORMATION ONLY 478+00 06' LT 0-5
MAT'L COLOR	-	BR/GR	(4)	BR/GR	-	BR/GR
MAT'L TYPE LATITUDE DEG-MIN- LONGITUDE DEG-MIN-				33 18 93 16	24.70 32.00	33 18 20.00 93 16 24.60
3/4 3/8 NO. NO. NO.	40 -	100 99 99 98 86 60		100 99 98 97 81 49		100 99 99 97 87 63
LIQUID LIMIT	_	18	·	17	<u>.</u> =	20
	-	03 A-4(0)	# #	01 A-4(0)	** **	05 A-4(0) 14.1
ACHMSC ACHMBC SOIL CEMENT BASE	(IN) - (IN) -	2.5 6.5WX 4.0	-	200 200 200	- - - -	13.0W 7.0
	-		343		-	
	_		: = :		-	
	_		-		_	

REMARKS - W=MULTIPLE LAYERS, X=STRIPPED

- ALL LOCATIONS MEASURED FROM CENTERLINE OF EXISTING HIGHWAY

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MICHAEL BENSON, MATERIALS ENGINEER

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

DATE - 12/01/15 JOB NUMBER - CA0705 FEDERAL AID NO TO BE ASSIGNED PURPOSE - SOIL SURVEY SAMPLE SPEC. REMARKS - NO SPECIFICATION CHECK SUPPLIER NAME - STATE NAME OF PROJECT - HWY.98 - HWY.79 (WIDENING PROJECT ENGINEER - NOT APPLICABLE PIT/QUARRY - ARKANSAS LOCATION - COLUMBIA, COUNTY SAMPLED BY - T.FRAZIER SAMPLE FROM - TEST HOLE	DATE SAMPLED - 11/03/15 DATE RECEIVED - 11/05/15 DATE TESTED - 11/30/15
MATERIAL DESC SOIL SURVEY - R VALUE- PAV	
LAB NUMBER - 20153639	- 20153640 - 20153641
SAMPLE ID - S596	_ S597
	- INFORMATION ONLY - INFORMATION ONLY - 478+00 - 486+00
STATION - 478+00 LOCATION - 15' LT	- 478+00 - 486+00 - 27' LT - 06' RT
DEPTH IN FEET - 0-5	0-5 - 0-5
MAT'L COLOR - BR/GR	BR/GR BR/GR
MAT'L TYPE -	_ bk/ dk
LATITUDE DEG-MIN-SEC - 33 18 20.10	- 33 18 20.10 - 33 18 14.70
LONGITUDE DEG-MIN-SEC - 93 16 24.60	93 16 24.50 93 16 17.40
% PASSING 2 IN	
1 1/2 IN	
3/4 IN	*
3/8 IN 100	100
NO. 4 - 99	99 100
NO. 10 - 97	98 99
NO. 40 - 95	_ 96 _ 99
NO. 80 - 85	- 85 - 92
NO. 200 - 57	60 65
LIQUID LIMIT - 19	= 18 = 17
PLASTICITY INDEX - 04	- 04 - 03
AASHTO SOIL - A-4(0)	- A-4(0) - A-4(0)
UNIFIED SOIL -	11 1(0) A 4(0)
% MOISTURE CONTENT - 14.2	14.9 16.3
ACHMSC (IN) - 8.5W ACHMBC (IN) - 6.0	2.0 8.0W
SOIL CEMENT BASE (IN)	7.0
CIN/	-
#:	w =
등 일	* -
조는 즐	- 200
-	*: -

REMARKS - W=MULTIPLE LAYERS, X=STRIPPED

= ALL LOCATIONS MEASURED FROM CENTERLINE OF EXISTING HIGHWAY

MICHAEL BENSON, MATERIALS ENGINEER

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

Si .	2012	, 1111		001101110 1110	I RELOTE	
DATE - 12/	09/15				SEQUENCE	NO. = 15
JOB NUMBER - CAO	705				MATERIAL	CODE - SSRVPS
FEDERAL AID NO TO	BE ASSI	GNED			SPEC. YEA	AR = 2014
PURPOSE - SOI						ID 1
SPEC. REMARKS - NO	SPECIFI	CATION CHECK				TATE = 14
SUPPLIER NAME - STA						NO 07
NAME OF PROJECT - H	WY.98 -	HWY.79 (WID	ENING)	(S)		
PROJECT ENGINEER - N						
PIT/QUARRY - ARKAN	ISAS					
LOCATION - COLUM		UNTY			DATE SAM	PLED = 11/03/15
SAMPLED BY - T.FRAZ	·					EIVED = 11/05/15
SAMPLE FROM - TEST						TED = 11/30/15
MATERIAL DESC SOI		Y - R VALUE	- PAVEM	ENT SOUNDIN		11/30/13
LAB NUMBER		20153642			-	20153644
SAMPLE ID	-	S599	2	S600	3	S601
TEST STATUS	-	INFORMATION	ONLY -	INFORMATIO	ON ONLY	INFORMATION ONLY
STATION	-	486+00	-	486+00	-	496+00
LOCATION	-	15' RT	2 2	27' RT	(#) (147)	06' LT
DEPTH IN FEET	-	0 - 5	_	0-5	-	0-5
MAT'L COLOR	-	BR/GR	-	BR/GR	-	BR/GR
MAT'L TYPE	-		=		-	
LATITUDE DEG-MIN-	SEC -	33 18 14	.60 =	33 18	14.60	33 18 8.60
LONGITUDE DEG-MIN-	SEC -	93 16 17	.40	93 16	17.50	93 16 8.30
% PASSING 2	IN		_			
	IN				-	
	IN		2		-	
-	IN		=		-	
·	4 -	100	*	100	(34)	100
	10 -	99		99	-	99
	40 -	99	8	98	-	98
	-		*	89		87
NO.	80 - 200 -	56	~	61	-	59
110:	200 -	50		0.1		59
LIQUID LIMIT	-	17	=	18	-	17
PLASTICITY INDEX	-	03	- 50	03	-	04
AASHTO SOIL	~	A-4 (0)	_	A-4(0)	(=)	A-4 (0)
UNIFIED SOIL	-		-		=	
% MOISTURE CONTENT	_	14.3	=	15.7	-	13.6
ACHMSC	(IN) -	3.75W	-		=	3.5W
ACHMBC	(IN) -	7.75.1	-		±	4 - 5W
SOIL CEMENT BASE	(IN) -	6.0	-			7.0
	# + TAGE -	0.0	Ξ.		#	7 . 0
	-		===		77.	
	_		2		2	
	~		-		_	
	_		=		=	
	_		2 2		2	

REMARKS - W=MULTIPLE LAYERS, X=STRIPPED

- ALL LOCATIONS MEASURED FROM CENTERLINE OF EXISTING HIGHWAY

"S : T24 T88 T89 T90

AASHTO TESTS : T24 T88 T89 T90 T265

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MICHAEL BENSON, MATERIALS ENGINEER

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

	2012	, ,		-	01101110 110.			
JOB NUMBER - CAO FEDERAL AID NO TO	BE ASSI L SURVE SPECIFI TE WY.98 - OT APPL ISAS BIA, CO	Y SAMPLE CATION CHE HWY.79 (V ICABLE	ECK	(S)	SPEC. YI SUPPLIED COUNTY/S DISTRICT	E CODE - EAR - R ID STATE - F NO	- SSRVPS - 2014 - 1 - 14
SAMPLE FROM - TEST	HOLE	יאנו דו אני	ייי דייי		יאות פאנדאנד דאו	DATE TE		- 11/30/15
MATERIAL DESC SOT LAB NUMBER SAMPLE ID TEST STATUS STATION LOCATION DEPTH IN FEET MAT'L COLOR	- - - - -	20153645 S602		30 30 50	20153646 S603	ON ONLY	20153 S604 INFOR 504+0 06' R 0-5 BR/GR	MATION ONLY 0 T
MAT'L TYPE LATITUDE DEG-MIN- LONGITUDE DEG-MIN-			8.70 8.30	=	33 18 93 16		33 93	
% PASSING 2 1 1/2 3/4	IN IN IN IN 4 - 10 - 40 - 80 -	100 99 99 97 81 54			100 98 97 96 83 55	2 2 3 3 3 4	100 99 98 86 62	
LIQUID LIMIT PLASTICITY INDEX AASHTO SOIL UNIFIED SOIL % MOISTURE CONTENT ACHMSC ACHMBC SOIL CEMENT BASE	- - (IN) - (IN) -	ND NP A-4(0) 12.9 3.0 6.0			ND NP A-4(0) 13.8		16 02 A-4(15 - 4.5 - 3.0	.3 SWX SW
	- - - - -			- - - - -				

REMARKS - W=MULTIPLE LAYERS, X=STRIPPED

- ALL LOCATIONS MEASURED FROM CENTERLINE OF EXISTING HIGHWAY

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AASHTO TESTS : T24 T88 T89 T90 T265

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MICHAEL BENSON, MATERIALS ENGINEER

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

	2011	, , , , , , , , , , , , , , , , , , , ,	~	01.021.0 1001		
DATE - 12/0	01/15				SEQUENCE	NO 17
JOB NUMBER - CAO'	705				MATERIAL	CODE - SSRVPS
FEDERAL AID NO TO I	BE ASSI	GNED			SPEC. YE	AR - 2014
PURPOSE - SOII					SUPPLIER	ID 1
SPEC. REMARKS - NO S	SPECIFI	CATION CHECK				TATE - 14
SUPPLIER NAME - STAT						NO 07
NAME OF PROJECT - H	WY.98 -	HWY.79 (WIDENING)) (S)		
PROJECT ENGINEER - NO	OT APPL	ICABLE				
PIT/QUARRY - ARKAN						
LOCATION - COLUM	BIA, CO	UNTY			DATE SAM	PLED - 11/03/15
SAMPLED BY - T.FRAZ	IER					EIVED - 11/05/15
SAMPLE FROM - TEST 1	HOLE					TED - 11/30/15
MATERIAL DESC SOI		Y - R VALUE- PAV	F:MF	NT SOUNDING		11,30,13
LAB NUMBER	=	20153648	**	20153649	_	20153650
SAMPLE ID	-	S605	70	S606	-	S607
TEST STATUS	-	INFORMATION ONLY	-	INFORMATIC	N ONLY -	INFORMATION ONLY
STATION	-	504+00	-	504+00	_	512+00
LOCATION	-	15' RT	*	24' RT	-	06' LT
DEPTH IN FEET	-	0-5		0 - 5	_	0-5
MAT'L COLOR	_	BR/GR	2	BR/GR	_	BR/GR
MAT'L TYPE	_		_		_	
LATITUDE DEG-MIN-S	SEC -	33 18 3.40	-	33 18	3.30 -	33 17 58.60
LONGITUDE DEG-MIN-S						93 15 53.90
% PASSING 2	IN		-		-	
1 1/2			-			
- •	IN		_		_	
-	IN	100	_	100	==0 ==0	-100
		99	_	98	=:	99
	10 -	98	-	97	-	99
	40 -	96	-	95	=0	98
	80 -	82	-	82	=0	84
NO. 2	200 -	56		57		56
LIQUID LIMIT	_	18	-	17	-	19
PLASTICITY INDEX	_		_	02	-	03
AASHTO SOIL	_	A-4(0)	-	A-4(0)	20	A-4(0)
UNIFIED SOIL	_	A 1(0)	1	21 4 (0)	140	A-4(0)
% MOISTURE CONTENT	_	14.9	-	14.7	-	17.1
				/		
	(IN) -	3.25W	-		-	5.0WX
SOIL CEMENT BASE	(IN) -	6.0	- 		-	7.0
	-		27		_	
	1-		-		_	
	1.7		=		_	
	12		-		_	
	-		-		-	€
	-		*		-	
	.5		577		-	

REMARKS - W=MULTIPLE LAYERS, X=STRIPPED

- ALL LOCATIONS MEASURED FROM CENTERLINE OF EXISTING HIGHWAY

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MICHAEL BENSON, MATERIALS ENGINEER

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

	DOIL	SORVET / TAVERENT	50	ONDING TEBT	KELOKI		
DATE - 12/ JOB NUMBER - CAO FEDERAL AID NO TO	705 BE ASSI L SURVE SPECIFI TE WY.98 - OT APPL SAS BIA, CO IER HOLE	Y SAMPLE CATION CHECK HWY.79 (WIDENING) ICABLE UNTY	(S)	MATERIA SPEC. SUPPLIA COUNTY DISTRIA DATE S DATE R DATE T	AL YEA ER /ST CT	NO. = 18 CODE = SSRVPS AR = 2014 ID. = 1 PATE = 14 NO. = 07 PLED = 11/03/15 EIVED = 11/05/15 FED = 11/30/15
LAB NUMBER	_	20153651	_	20153652			20153653
SAMPLE ID		S608		S609			S610
TEST STATUS	_	INFORMATION ONLY			NI ONII V		
STATION		512+00	_	512+00	N ONLY	-	520+00
LOCATION		15' LT	_	27' LT			06' RT
DEPTH IN FEET	-		_	0-5		-	0-5
		BR/GR	-	BR/GR		-	BR/GR
MAT'L COLOR MAT'L TYPE	_	DR/GR	-	DR/GR		-	DR/GR
LATITUDE DEG-MIN-	CEC -	22 17 59 70	-	22 17 5	0 70	-	33 17 54.30
LONGITUDE DEG-MIN-					53.70	=	93 15 46.40
LONGITUDE DEG-MIN-	SEC -	93 13 53.60		93 15 5	53.70		93 15 46.40
% PASSING 2	IN		-			-	
1 1/2	IN		-			-	
3/4	IN		77			-	
3/8	IN		-	100		-	100
NO.	4 -	100	_	97		_	98
NO.	10 -	99	_	93		_	97
NO.	40 -	98	2	90		_	94
NO.	80 -	82	-	78		-	79
NO.	200 -	55		51			54
LIQUID LIMIT	_	ND	_	17			ND
	_		=	02		_	NP
	_	A-4(0)	4	A-4(0)		=	A-4(0)
UNIFIED SOIL	_	11 4(0)	4	11 1(0)		-	A 4(0)
% MOISTURE CONTENT	_	20.0	-	15.9		-	15.7
ACHMSC	(IN) -	3.0X	-				3.75WX
ACHMBC	(IN) -		-			-	3.25WX
SOIL CEMENT BASE	(IN) -	7.0	2			02	6.0
			$\widehat{\boldsymbol{x}} \to \widehat{\boldsymbol{x}}$			(ω)	
	-		-			(Ξ)	
0.00	-		70			0.55	
	_						
	_		300				
	_		-			-	

REMARKS - W=MULTIPLE LAYERS, X=STRIPPED

⁻ ALL LOCATIONS MEASURED FROM CENTERLINE OF EXISTING HIGHWAY

MICHAEL BENSON, MATERIALS ENGINEER

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

DATE - 12/6 JOB NUMBER - CAO FEDERAL AID NO TO I PURPOSE - SOI SPEC. REMARKS - NO S SUPPLIER NAME - STA NAME OF PROJECT - H PROJECT ENGINEER - NO PIT/QUARRY - ARKAN LOCATION - COLUM SAMPLED BY - T.FRAZ SAMPLE FROM - TEST I MATERIAL DESC SOI	705 BE ASSI L SURVE SPECIFI FE WY.98 - OT APPL SAS BIA, CO IER HOLE	Y SAMPLE CATION CHECK HWY.79 (WIDENING ICABLE UNTY		SPEC. YEAR SUPPLIER COUNTY/ST DISTRICT DATE SAME DATE RECEIVED.	CODE - SSRVPS AR - 2014
LAB NUMBER SAMPLE ID TEST STATUS STATION LOCATION DEPTH IN FEET MAT'L COLOR MAT'L TYPE LATITUDE DEG-MIN-S LONGITUDE DEG-MIN-S	EEC -	520+00 15' RT 0-5 BR/GR	520+00 - 27' RT - 0-5 - BR/GR - 33 17 !	ON ONLY -	20153656 S613 INFORMATION ONLY 528+00 06' LT 0-5 BROWN 33 17 51.00 93 15 37.80
% PASSING 2 1 1/2 3/4	IN IN IN IN 4 - 10 - 40 - 80 -	100 99 98 85 59	- 100 - 99 - 99 - 97 - 79 - 50	-	100 99 99 98 81 51
PLASTICITY INDEX AASHTO SOIL UNIFIED SOIL % MOISTURE CONTENT	2 2 2	04 A-4(0) 12.0	- 01 - A-4(0) - 8.9	- - -	NP A-4(0)
ACHMSC ACHMBC SOIL CEMENT BASE	(IN) - (IN) - - - - - - -	3.0W 6.0		2 4 E 2 2 E 2 E 2 E 2 E 2 E 2 E 2 E 2 E	3.25W 2.25 7.0

REMARKS - W=MULTIPLE LAYERS, X=STRIPPED

- ALL LOCATIONS MEASURED FROM CENTERLINE OF EXISTING HIGHWAY

MICHAEL BENSON, MATERIALS ENGINEER

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

		,	~ ~		1122 0111	
DATE - 12/0	01/15				SEQUENCE	NO 20
JOB NUMBER - CAO	705				MATERIAL	CODE - SSRVPS
FEDERAL AID NO TO	BE ASSI	GNED			SPEC. YE	AR = 2014
PURPOSE - SOII					SUPPLIER	ID. = 1
SPEC. REMARKS - NO	SPECIFI	CATION CHECK				TATE = 14
SUPPLIER NAME - STA	TE					NO 07
NAME OF PROJECT - H	WY.98 -	HWY.79 (WIDENING)) (S)		
PROJECT ENGINEER - NO	OT APPL	ICABLE				16
PIT/QUARRY - ARKAN	SAS					
LOCATION - COLUM	BIA, CO	UNTY			DATE SAM	IPLED - 11/03/15
SAMPLED BY - T.FRAZ	IER					EIVED - 11/05/15
SAMPLE FROM - TEST						TED - 11/30/15
MATERIAL DESC SOI	L SURVE	Y - R VALUE- PAV	EME	ENT SOUNDING		
LAB NUMBER	_			20153658		20153659
SAMPLE ID	-	S614		S615		S616
TEST STATUS						INFORMATION ONLY
STATION	-	528+00	=	528+00		538+00
LOCATION		15' LT		27' LT	_	06' RT
DEPTH IN FEET	-	0-5	_	0-5	_	0-5
MAT'L COLOR	-	BROWN		BROWN	_	RD/BR
MAT'L TYPE	-		22		_	
LATITUDE DEG-MIN-S				33 17 5	51.20 -	33 17 48.20
LONGITUDE DEG-MIN-	SEC -	93 15 37.80		93 15	37.70	93 15 26.90
% PASSING 2	IN		_			
	IN		=		-	970
	IN		2			
· · · · · · · · · · · · · · · · · · ·	IN	100	-			100
		99	=	100	=	99
			22	98	1	0.0
	40 -	98 96	#	95	-	97
			-	78	:=:	79
	80 - 200 -	50	=	46	=	55
NO. A	200 -	50		40		55
LIQUID LIMIT	-	ND	77	ND	-	⁻ 19
PLASTICITY INDEX	-	NP	-	NP	-	03
AASHTO SOIL	-	A-4(0)	*	A-4(0)	-	A-4(0)
UNIFIED SOIL	-		**			
% MOISTURE CONTENT	-	11.5		15.6	-	18.7
ACHMSC	(IN) -	3.0	-		-	4.5W
ACHMBC	(IN) -		=		84	4.0W
SOIL CEMENT BASE	(IN) -	7.0	\rightarrow		:=:	6.0
	8 8 _		-		:=:	
	-		-		-	S#5
	_		-		-	
	_		-			
	_		27		7# 25	
	-		=		22	

REMARKS - W=MULTIPLE LAYERS, X=STRIPPED

- ALL LOCATIONS MEASURED FROM CENTERLINE OF EXISTING HIGHWAY

MICHAEL BENSON, MATERIALS ENGINEER

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

SPEC. REMARKS - NO SUPPLIER NAME - STATEMANE OF PROJECT - HOUSE - NO SUPPLIER - COLUMN SAMPLED BY - T.FRAZ SAMPLE FROM - TEST IN	705 BE ASSI L SURVE SPECIFI FE WY.98 - OT APPI SAS BIA, CO IER HOLE	Y SAMPLE CATION CHECK HWY.79 (WIDENING) ICABLE OUNTY		SPEC. YES SUPPLIER COUNTY/S' DISTRICT DATE SAM DATE REC DATE TES	CODE - SSRVPS AR - 2014 ID 1 IATE - 14 NO 07 IPLED - 11/03/15 EIVED - 11/05/15
MATERIAL DESC SOI	L SURVI	EY - R VALUE- PAV	EMENT SOUNDIN	GS	
LAB NUMBER	-	20153660	- 20153661		20153662
SAMPLE ID	-	S617	_ S618	·=:	S619
TEST STATUS	-			ON ONLY -	INFORMATION ONLY
STATION	-		- 538+00		545+00
LOCATION	-	20 111	- 27' RT	-	06' LT
DEPTH IN FEET		0-5	_ 0-5	-	0-5
MAT'L COLOR	-	RD/BR	_ BROWN	120	RD/BR
MAT'L TYPE	-	22 17 40 10	-	1E 00	22 17 47 20
LATITUDE DEG-MIN-S				47.90	33 17 47.20 93 15 18.70
LONGITUDE DEG-MIN-S	SEC -	93 15 26.90	93 15	26.90	93 15 18.70
% PASSING 2	IN		<u>=</u>	-	
1 1/2			-	-	
	IN		-	_	
	IN	100	100	_	100
NO.	4 -	100	100	-	99
NO.		99 97	- 99 - 97	-	• 98 95
NO.		82	- 71	_	78
NO. 2		56	52	-	56
110.	200	50	54		
LIQUID LIMIT	-	ND	= 19	: :	23
PLASTICITY INDEX	-	NP	- 03	: :: :	07
AASHTO SOIL	-	A-4(0)	A-4(0)	-	A-4(1)
UNIFIED SOIL	_		*** ***	(+)	
% MOISTURE CONTENT	-	19.1	21.4		18.0
ACHMSC	(IN) -	3.0W		_	5.25W
ACHMBC	(IN) -	***	* ***	-	2.25
SOIL CEMENT BASE	(IN) -	6.0	7:	_	7.0
	-		-	_	
	=		*	_	
	2		70	-	
	<u>=</u> 7		70	_	
	=)		=	-	
	≅/		==	-	

REMARKS - W=MULTIPLE LAYERS, X=STRIPPED

- ALL LOCATIONS MEASURED FROM CENTERLINE OF EXISTING HIGHWAY

AASHTO TESTS : T24 T88 T89 T90 T265

2

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

 DATE
 - 11/30/15
 SEQUENCE NO. - 22

 JOB NUMBER
 - CA0705
 MATERIAL CODE - SSRVPS

 FEDERAL AID NO. - TO BE ASSIGNED
 SPEC. YEAR - 2014

FEDERAL AID NO. - TO BE ASSIGNED SPEC. YEAR - 2014

PURPOSE - SOIL SURVEY SAMPLE SUPPLIER ID. - 1

SPEC. REMARKS - NO SPECIFICATION CHECK COUNTY/STATE - 14

SUPPLIER NAME - STATE DISTRICT NO. - 07

NAME OF PROJECT - HWY.98 - HWY.79 (WIDENING) (S)

PROJECT ENGINEER - NOT APPLICABLE

PIT/QUARRY - ARKANSAS

LOCATION - COLUMBIA, COUNTY DATE SAMPLED - 11/03/15 SAMPLED BY - T.FRAZIER DATE RECEIVED - 11/05/15

SAMPLE FROM - TEST HOLE DATE TESTED - 11/30/15

MATERIAL DESC. - SOIL SURVEY - R VALUE- PAVEMENT SOUNDINGS

LAB NUMBER SAMPLE ID TEST STATUS STATION LOCATION DEPTH IN FEET MAT'L COLOR MAT'L TYPE		7		S621	_	20153665 S622 INFORMATION ONLY 554+00 15' RT 0-5 BROWN
LATITUDE DEG-MIN-SEC		33 17 47.30	<u>~</u>	,	-	33 17 47.00
LONGITUDE DEG-MIN-SEC	-	93 15 18 70		93 15 18.70		93 15 8.20
% PASSING 2 IN 1 1/2 IN 3/4 IN 3/8 IN NO. 4 NO. 10 NO. 40 NO. 80 NO. 200		100 99 98 95 77 55	-	100 98 96 92 70 64 53		100 99 99 98 85 60
LIQUID LIMIT	-	20	Ξ,	24	-	22
PLASTICITY INDEX	-	4	=	8	-	7
AASHTO SOIL	-	A-4(0)	-	A-4(1)	35	A-4(1)
UNIFIED SOIL	_	10 7	=	16.1	2	10.1
% MOISTURE CONTENT	, -	18.7		10.1		19.1
	1) –	5.5W	*		=	4.5W
ACHMBC (II SOIL CEMENT BASE (II	1) -	7.0	_		_	2.25W 4.0
DOLL CHARM DADE	_	7.0	7		77	1.0
	_		•		=	
	_		-		_	
	-		-		=	

REMARKS - W=MULTIPLE LAYERS, X=STRIPPED

- ALL LOCATIONS MEASURED FROM CENTERLINE OF EXISTING HIGHWAY

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

**	* SOIL	SURVEY / PAVEMENT	SQ	UNDING TEST	T REPORT *	**
DATE - 12/ JOB NUMBER - CAO FEDERAL AID NO TO PURPOSE - SOI SPEC. REMARKS - NO SUPPLIER NAME - STA NAME OF PROJECT - H PROJECT ENGINEER - N PIT/QUARRY - ARKAN	705 BE ASSI L SURVI SPECIFI TE WY.98 OT APPI	EY SAMPLE ICATION CHECK - HWY.79 (WIDENING			MATERIAL SPEC. YE. SUPPLIER COUNTY/S	NO 23 CODE - SSRVPS AR - 2014 ID 1 TATE - 14 NO 07
LOCATION - COLUM		YTNUC			DATE SAM	PLED - 11/03/15
SAMPLED BY - T.FRAZ						EIVED - 11/05/15
SAMPLE FROM - TEST						TED - 11/30/15
MATERIAL DESC SOI	L SURV	EY - R VALUE- PAV	EME	ENT SOUNDIN	GS	
LAB NUMBER	-	20153666			177	20153668
SAMPLE ID	-			S624	=	S625
TEST STATUS	-	INFORMATION ONLY	2	INFORMATIO	ON ONLY	INFORMATION ONLY
STATION				554+00 45' RT	-	
LOCATION DEPTH IN FEET		24' RT	2	0-5	=	06' LT 0-5
		BROWN	3	BROWN		BROWN
MAT'L TYPE	_	BICOMN	*	BICOMIV	· ·	BROWN
LATITUDE DEG-MIN-	SEC -	33 17 46.90	2	33 17	46.70	33 17 48.20
LONGITUDE DEG-MIN-	SEC -	93 15 8.10		93 15	8.10	
% PASSING 2	IN		-		<u>.</u> .	
	IN		-			
· ·	IN				(7)	
3/8	IN	100		100	20	
NO ,	4 -	99	: 	99	_	100
NO.	10 -	99	-	98	(3)	99
	40 -		-		₩.	
	80 -		+	-	-	
NO.	200 -	15		69		52
LIQUID LIMIT			$(\underline{\varphi})$	27	===	18
PLASTICITY INDEX	35	4	7.5		2.	4
AASHTO SOIL	100	A-4(1)		A-6(6)	-	A-4 (0)
UNIFIED SOIL	,0 00			10.0	-	
% MOISTURE CONTENT		16.0		17.7		13.6
ACHMSC	(IN) -	6.0W	=	5.55		5.5WX
ACHMBC	(IN) -	2.25W	ä	-	(8	2.0
SOIL CEMENT BASE	(IN) -	2.0	_		-	A. H. A.
	-		=		S=	
	0.2		÷		-	
	34		-		(= 	
	(5) (5)		-		; -	
	122				7 =	

REMARKS - W=MULTIPLE LAYERS, X=STRIPPED

- ALL LOCATIONS MEASURED FROM CENTERLINE OF EXISTING HIGHWAY

31 31

AASHTO TESTS : T24 T88 T89 T90 T265

:

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

JOB NUMBER - CAO FEDERAL AID NO TO	BE ASSI L SURVE SPECIFI ATE IWY.98 - IOT APPI ISAS	Y SAMPLE CATION CHECK HWY.79 (WIDENING LICABLE	G) (S)	SPEC. YEAR SUPPLIER COUNTY/ST	CODE - SSRVPS AR - 2014 ID 1 FATE - 14
SAMPLED BY - T.FRAZ SAMPLE FROM - TEST	ZIER	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,				EIVED - 11/05/15
MATERIAL DESC SO	IL SURVI	EY - R VALUE- PA	VEME	ENT SOUNDIN	GS	
LAB NUMBER SAMPLE ID	-	20153669 S626		20153670 S627	(<u>-</u>	20153671 S628
TEST STATUS	-		-	INFORMATIO		INFORMATION ONLY
STATION	-	568+00	÷.	568+00	7.50	576+00
LOCATION		15' LT		27' LT		06' RT
DEPTH IN FEET		0-5	940	0-5	:=	0-5
MAT'L COLOR MAT'L TYPE	-		=	BROWN	-	BR/GR
LATITUDE DEG-MIN-	SEC -	33 17 48.30	-		48.40	33 17 48.60
LONGITUDE DEG-MIN-	SEC -	93 14 51.70		93 14	51.70	93 14 42.40
% PASSING 2	IN		-		_	
1 1/2	IN		=		-	
3/4	IN		420		-	100
·	IN	100	*	100	-	98
NO.	4 -	99	300	99	-	 97
NO.	10 -	98	50) 50)	99	-	96
NO.	40 -	95	4	98	_	93
NO.	80 -	77	**	82	_	78
NO.	200 -	56		59		57
LIQUID LIMIT	-	17	=	17	-	18
PLASTICITY INDEX	-	5	-	2	224	4
AASHTO SOIL	-	A-4(0)	_	A-4(0)	(-	A-4(0)
UNIFIED SOIL	~		-) = 1 12	Z.
% MOISTURE CONTENT		11.9		12.1		15.2
ACHMSC	(IN) -	1.5	7	17,7,7	5	4.5W
ACHMBC	(IN) -	-5-70-T	-		-	2.5
SOIL CEMENT BASE	(IN) -	7.0	-		_	7.0
CHIP SEAL	(IN) _	1.0	-		_	
	=		=		=	
	-		-		-	
	-				-	iii
	-		7		=	
	-		-		_	

REMARKS - W=MULTPLE LAYERS, X=STRIPPED

- ALL LOCATIONS MEASURED FROM CENTERLINE OF EXISTING HIGHWAY

AASHTO TESTS : T24 T88 T89 T90 T265

1

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

	BOIL BORVET / PAVEMENT	DOONDING IEDI	KEFORT	
SPEC. REMARKS - NO SUPPLIER NAME - STA	P705 BE ASSIGNED L SURVEY SAMPLE SPECIFICATION CHECK TE WY.98 - HWY.79 (WIDENING) HOT APPLICABLE		MATERIAL SPEC. YEA SUPPLIER COUNTY/ST	NO 25 CODE - SSRVPS AR - 2014 ID 1 TATE - 14 NO 07
LOCATION - COLUM SAMPLED BY - T.FRAZ SAMPLE FROM - TEST	MBIA, COUNTY ZIER	EMENT SOUNDING	DATE REC	PLED - 11/03/15 EIVED - 11/05/15 TED - 11/30/15
LAB NUMBER SAMPLE ID TEST STATUS STATION LOCATION DEPTH IN FEET MAT'L COLOR MAT'L TYPE LATITUDE DEG-MIN-	- S629 - INFORMATION ONLY - 576+00 - 15' RT - 0-5	- S630 - INFORMATIO - 576+00 - 30' RT - 0-5 - BROWN	N ONLY	S631 INFORMATION ONLY 592+00 06' RT 0-5 RD/BR
LONGITUDE DEG-MIN- % PASSING 2	SEC - 93 14 42.40			
3/4 3/8 NO. NO. NO.	IN IN IN 100 4 - 98 10 - 98 40 - 95 80 - 61 200 - 44	- 100 - 93 - 87 - 83 - 80 - 63 47		100 99 97 67 45
LIQUID LIMIT PLASTICITY INDEX AASHTO SOIL UNIFIED SOIL % MOISTURE CONTENT	- 17 - A-6(3) -	18 3 A-4(0) 18.3		26 13 A-6(2) 15.5
ACHMSC ACHMBC SOIL CEMENT BASE	(IN) - 3.0W (IN) (IN) - 7.0		E 86 04 04 05 04 04 04 04 04 04 04 04 04 04 04 04 04	4.0W 2.0 6.0

REMARKS - W=MULTIPLE LAYERS, X=STRIPPED

ALL LOCATIONS MEASURED FROM CENTERLINE OF EXISTING HIGHWAY

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

DATE - 12/0 JOB NUMBER - CAO FEDERAL AID NO TO D PURPOSE - SOID SPEC. REMARKS - NO S SUPPLIER NAME - STAT NAME OF PROJECT - H PROJECT ENGINEER - NO PIT/QUARRY - ARKANS LOCATION - COLUMN SAMPLED BY - T.FRAZ SAMPLE FROM - TEST D MATERIAL DESC SOI	705 BE ASSI L SURVE SPECIFI TE WY.98 - OT APPL SAS BIA, CO IER HOLE	Y SAMPLE CATION CHECK HWY.79 (WIDENING ICABLE UNTY			MATERIA SPEC. Y SUPPLIE COUNTY/ DISTRIC DATE SA DATE RI DATE TI	AL (EA (ST CT AME	ID 1 ATE - 14 NO 07 PLED - 11/03/15 SIVED - 11/05/15
	T SOKVE						00150655
LAB NUMBER	-	2020000		20153676 S633			20153677 S634
SAMPLE ID TEST STATUS	=	S632					INFORMATION ONLY
STATION		592+00	20	592+00			600+00
LOCATION	_		111	27' RT		÷:	18' LT
DEPTH IN FEET	22		77	0 - 5		-	0 - 5
MAT'L COLOR	=	RD/BR	E 22	RD/BR		2	RD/BR
MAT'L TYPE	7		22			4	
LATITUDE DEG-MIN-S					49.60	-	33 17 50.60
LONGITUDE DEG-MIN-	SEC -	93 14 23.70		93 14	23.60		93 14 14.20
% PASSING 2	IN. =		-			-	
1 1/2	IN.		-			-	
	IN. =		_			_	
	IN. =		_	100		_	
	4 =	100	-	100 99		-	100
NO.		99 97	-	97		-	98 93
NO.		69	-	83		_	46
	200 =			60			29
T TOUTD I THE		0.5		2.0			28
LIQUID LIMIT PLASTICITY INDEX		27 14		20 7		-	13
AASHTO SOIL	<u></u>	A-6(2)	-	A-4(1)		-	A-2-6(0)
UNIFIED SOIL	2	11 0 (2)	77	11 1 (1)		-	11 2 3 (0)
% MOISTURE CONTENT		17.7	-	20.2		-	19.9
ACHMSC	(IN) -	2.5W	=0			-	3.0W
ACHMBC	(IN) -		-			Ħ	1.5
SOIL CEMENT BASE	(IN) -	6.0	77.0			77	7.0
	2		20			_	
	-		=0			+:	
	77		=			77	
	<u> </u>		-			2	
	-		= 1			-	

REMARKS W=MULTIPLE LAYERS, X=STRIPPED

- ALL LOCATIONS MEASURED FROM CENTERLINE OF EXISTING HIGHWAY.

3

AASHTO TESTS : T24 T88 T89 T90 T265

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

DATE - 12/09/15 SEQUENCE NO 27 JOB NUMBER - CA0705 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 - 14 SUPPLIER NAME - STATE DISTRICT NO 07 NAME OF PROJECT - HWY.98 - HWY.79 (WIDENING) (S) PROJECT ENGINEER - NOT APPLICABLE PIT/QUARRY - ARKANSAS									
LOCATION COLUMBIA, COUNTY DATE SAMPLED - 11/03/15 SAMPLED BY - T.FRAZIER DATE RECEIVED - 11/05/15 SAMPLE FROM - TEST HOLE DATE TESTED - 11/30/15									
MATERIAL DESC SOI		EY - R VALUE- PAV	EME	NT SOUNDING			11/30/13		
LAB NUMBER SAMPLE ID	-			20153679 S636			20153680 S637		
TEST STATUS STATION	_	INFORMATION ONLY 600+00		INFORMATIC	ON ONLY		INFORMATION ONLY 610+00		
LOCATION		27' LT	=	33' LT		==	06' RT		
DEPTH IN FEET		0-5	-	0-5		-	0-5		
MAT'L COLOR MAT'L TYPE	_	RD/BR	3	RD/BR			RD/BR		
LATITUDE DEG-MIN-	SEC -	33 17 50.70	90	33 17	50.70	-	33 17 51.00		
LONGITUDE DEG-MIN-	SEC -	93 14 14.30		93 14	14.20		93 14 2.50		
	IN IN		E E			/T.			
		100	**						
•	4 -	99	<u>₹</u>	100			100		
NO.	10 -	98	<u>,</u>	99		=	99		
NO.	40 -	92	\approx	92		-	91		
	80 -	47	27	46		(π)	55		
NO.	200 -	35		35			41		
LIQUID LIMIT	_	30	20	31		$\hat{\boldsymbol{x}} = \boldsymbol{x}$	39		
PLASTICITY INDEX	-	_ ,	-	15		165	25		
AASHTO SOIL	-	A-2-6(1)	×)	A-2-6(1)			A-6(5)		
UNIFIED SOIL	_		20			14			
% MOISTURE CONTENT	-	18.5		18.0			19.2		
ACHMSC	(IN) -	2.0	=			<u>=</u>	3.25W		
ACHMBC	(IN) -		-			-	2.0		
SOIL CEMENT BASE	(IN) _	7.0	-			2	7.0		
	≥:		25			4			
	₩);		-			*			
	27. 27.		-			2			
	#3		2			=			
	190		-			-			

REMARKS 🕏 W=MULTIPLE LAYERS, X=STRIPPED

- ALL LOCATIONS MEASURED FROM CENTERLINE OF EXISTING HIGHWAY.

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

DATE - 12/ JOB NUMBER - CAO FEDERAL AID NO TO TO PURPOSE - SOI SPEC. REMARKS - NO SUPPLIER NAME - STA NAME OF PROJECT - H PROJECT ENGINEER - N PIT/QUARRY - ARKAN LOCATION - COLUM SAMPLED BY - T.FRAZ SAMPLE FROM - TEST MATERIAL DESC SOI	705 BE ASSI L SURVE SPECIFI TE WY.98 - OT APPL SAS BIA, CO IER HOLE	Y SAMPLE CATION CHECK HWY.79 (WIDENING) ICABLE UNTY			MATERIA SPEC. Y SUPPLIA COUNTY DISTRIC DATE S DATE R DATE T	AL YEA ER /ST CT AMI	NO 28 CODE - SSRVPS R - 2014 ID 1 ATE - 14 NO 07 PLED - 11/03/1 EIVED - 11/05/1 FED - 11/30/1	15
LAB NUMBER	_	20153681	22	20153682		-	20153683	
SAMPLE ID	-	S638	-	S639		-	S640	
TEST STATUS	-	INFORMATION ONLY	=	INFORMATIO	ON ONLY		INFORMATION OF	$1\Gamma\lambda$
STATION	-	610+00	77	610+00		\Box	616+00	
LOCATION	-	15' RT	-	27' RT		-	06' LT	
DEPTH IN FEET		0-5	_	0 - 5		-	0-5	
MAT'L COLOR	_	RD/BR	-	RD/BR		-	RD/BR	
MAT'L TYPE	-		-			-		
LATITUDE DEG-MIN-				33 17		-	33 17 51.6	
LONGITUDE DEG-MIN-	SEC -	93 14 2.50		93 14	2.50		93 13 55.4	0
% PASSING 2	IN		=					
1 1/2	IN		=			-		
3/4	IN	100	-			-		
3/8		99		100		_	100	
NO .		99	2	99		2	99	
NO.		98	$\frac{1}{2\pi i}$	97		-		
	40 -		44	95		-	97	
	80 -		77	75		-	78	
NO.	200 -	46		51			54	
LIQUID LIMIT	-	25	22	25		-	26	
PLASTICITY INDEX	-	9	=	13		-	13	
AASHTO SOIL	-	A-4(1)		A-6(3)			A-6(4)	
UNIFIED SOIL	-		2			-		
% MOISTURE CONTENT	-	17.5		16.9			23.2	
ACHMSC	(IN) -	2.5	4			Ξ	3.75W	
ACHMBC	(IN) -		-			**	2.5	
SOIL CEMENT BASE	(IN) -	6.0	-			=	7 . 0	
	_		==0			=		
	_		=			\approx		
	_		-			77		
	_		70			2		
	_		-			_		

REMARKS - W=MULTIPLE LAYERS, X=STRIPPED

- ALL LOCATIONS MEASURED FROM CENTERLINE OF EXISTING HIGHWAY

30

AASHTO TESTS : T24 T88 T89 T90 T265

12

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

DATE - 12/ JOB NUMBER - CAO FEDERAL AID NO TO : PURPOSE - SOI: SPEC. REMARKS - NO : SUPPLIER NAME - STA' NAME OF PROJECT - H PROJECT ENGINEER - NO	SPEC. YEA	CODE - SSRVPS AR - 2014 ID 1 FATE - 14				
PIT/QUARRY - ARKAN LOCATION - COLUM SAMPLED BY - T.FRAZ SAMPLE FROM - TEST	BIA, CO IER	UNTY			DATE REC	PLED - 11/03/15 EIVED - 11/05/15 TED - 12/01/15
MATERIAL DESC SOI		CY - R VALUE- PAV	EME	ENT SOUNDIN		12/01/13
LAB NUMBER SAMPLE ID	-	20153684 S641		20153685 S642		20153686 S643
TEST STATUS	-					INFORMATION ONLY
STATION LOCATION	_		=	616+00 27' LT		624+00 06' RT
DEPTH IN FEET	_		=	0-5	(<u>—</u>)	0-5
MAT'L COLOR	_		=	RD/BR	-	RD/BR
MAT'L TYPE	-		=	241	======================================	
LATITUDE DEG-MIN-					51.80 -	33 17 52.00
LONGITUDE DEG-MIN-	SEC -	93 13 55.40		93 13	55.40	93 13 46.00
% PASSING 2	IN		777		-	
	IN		22		2	
_ '	IN	100	_		_	
·		99	=	100	-	100
	4 -	98	22	97 95	-	100 99
NO.	10 - 40 -		<u>~</u>	92	:=:	98
NO.			#	69	*	84
	200 -		~	50	353	65
	ñ					
LIQUID LIMIT	-	24	2	24	:=:	24 11
PLASTICITY INDEX	_	9	_	11	_	
AASHTO SOIL	-	A-4(6)	=	A-6(2)	-	A-6 (4)
UNIFIED SOIL % MOISTURE CONTENT	_	16.5	=======================================	18.8	:=:	19.9
ACHMSC	(IN) -	3.0W	-		_	4.0W
ACHMBC	(IN) -	7.0	_		-	2.75 8.25
SOIL CEMENT BASE	(IN) -	7.0	-	335	<u>=</u>	0.25
	_		-		÷	
	-		-		-	
	_		-			
	_		4		_	
	-		9			

REMARKS - W=MULTIPLE LAYERS, X=STRIPPED

- ALL LOCATIONS MEASURED FROM EXISTING CENTERLINE OF HIGHWAY

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

DATE - 12/09/15 SEQUENCE NO 30 JOB NUMBER - CA0705 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 - 14 SUPPLIER NAME - STATE DISTRICT NO 07 NAME OF PROJECT - HWY.98 - HWY.79 (WIDENING) (S) PROJECT ENGINEER - NOT APPLICABLE PIT/QUARRY - ARKANSAS									
PIT/QUARRY - ARKAN LOCATION - COLUM SAMPLED BY - T.FRAZ SAMPLE FROM - TEST MATERIAL DESC SOI	BIA, CC ZIER HOLE		TME	ENT SOUNDIN	DATE RI	ECI	PLED - 11/03/15 EIVED - 11/05/15 TED - 12/01/15		
	LI DORVI								
LAB NUMBER	-	_ 0 _ 0 0 0 0 .		20153688			20153689		
SAMPLE ID				S645			S646		
TEST STATUS STATION	*	624+00		624+00			INFORMATION ONLY 632+00		
LOCATION			2	27' RT			06' LT		
DEPTH IN FEET		0-5	÷	0-5		-	0-5		
MAT'L COLOR		RD/BR	**	RD/BR		*	BROWN		
MAT'L TYPE	#		= =	,		-			
LATITUDE DEG-MIN-	SEC -	33 17 51.90	\approx	33 17	51.90	-	33 17 52.70		
LONGITUDE DEG-MIN-	SEC -	93 13 46.00		93 13	46.00		93 13 36.60		
% PASSING 2	IN.		_			_			
	IN		2			_			
·	IN		¥			-			
	IN	100	*	100		-	100		
NO.	4 -	99	- 5	99		_	99		
NO.		99	22	99		_	99		
NO.	40 -	97	**	97		-	98		
	80 =		77	78		-	90		
NO.	200	68		57			69		
LIQUID LIMIT	=	24	2	20		-	20		
PLASTICITY INDEX	=	9	-	5		-	6		
AASHTO SOIL	2	A-4(3)	*	A-4(0)		-	A-4(1)		
UNIFIED SOIL	= ==					_			
% MOISTURE CONTENT	08	16.9	Ħ	17.2		-	17.7		
ACHMSC	(IN) -	3.0W	-			2	5.5WX		
ACHMBC	(IN) -		-	222		-	4.5		
SOIL CEMENT BASE	(IN) -	7.0	=			7			
SAND	(IN) -		7			ā	5.0		
			-			2			
	=		=			=			
	=					7			
	==		-			1			
			=			-			

REMARKS - W=MULTIPLE LAYERS, X=STRIPPED

- ALL LOCATIONS MEASURED FROM CENTERLINE OF EXISTING HIGHWAY

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

DATE - 12/09/15 SEQUENCE NO 31 JOB NUMBER - CA0705 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 - 14 SUPPLIER NAME - STATE DISTRICT NO 07 NAME OF PROJECT - HWY.98 - HWY.79 (WIDENING) (S) PROJECT ENGINEER - NOT APPLICABLE PIT/QUARRY - ARKANSAS LOCATION - COLUMBIA, COUNTY DATE SAMPLED - 11/03/15 SAMPLED BY - T.FRAZIER DATE RECEIVED - 12/01/15									
	Y - R VALUE- PAV	EME	NT SOUNDING		12/01/15				
= =	20153690 S647 INFORMATION ONLY		20153691 S648 INFORMATIO	ON ONLY -	20153692 S649 INFORMATION ONLY 640+00				
=	15' LT 0-5	2 8 2	27' LT 0-5 BROWN	# # # #	06' RT 0-5 BROWN				
					33 17 52.30 93 13 27.20				
N N N 4 - 0 - 0 -	95 93 92 90 84	31 3	100 99 99 99 92 74		100 99 99 97 90 59				
# H H H	21 07 A-4(2) 16.3	3 7 0 3	21 06 A-4(2) 14.1	- - -	23 08 A-4(2)				
IN) -	3.0W 7.0				4.5W 4.5W 				
	SASSIC SURVE SURVE SAPPL SA, CO SER SURVE SURVE SURVE SURVE SURVE SURVE SO SER SURVE	SASSIGNED SURVEY SAMPLE ECIFICATION CHECK 1.98 - HWY.79 (WIDENING APPLICABLE SA, COUNTY ER DLE SURVEY - R VALUE - PAV - 20153690 - S647 - INFORMATION ONLY - 632+00 - 15' LT - 0-5 - BROWN CC - 33 17 52.80 CC - 33 17 52.80 CC - 93 13 36.70 N N N N N N 0 - 95 4 - 93 0 - 92 0 - 90 0 - 84 0 - 68 - 21 - 07 - A-4(2) - 16.3 IN) - 3.0W IN)	SASSIGNED SURVEY SAMPLE ECIFICATION CHECK (1.98 - HWY.79 (WIDENING) (MAPPLICABLE) (2.5) (3.7) (3.7) (4.7) (5.7) (5.7) (5.7) (5.7) (6.7) (6.7) (7.7)	SASSIGNED SURVEY SAMPLE DECIFICATION CHECK 1.98 - HWY.79 (WIDENING) (S) APPLICABLE SA, COUNTY ER DLE SURVEY - R VALUE - PAVEMENT SOUNDING - 20153690	MATERIAL SASSIGNED SURVEY SAMPLE SURVEY SAMPLE SURVEY SAMPLE SUPPLIER COUNTY/S' C.98 - HWY.79 (WIDENING) (S) APPLICABLE SA, COUNTY DATE SAM BR DATE REC DATE TES SURVEY - R VALUE- PAVEMENT SOUNDINGS - 20153690 - 20153691 - S647 - S648 - INFORMATION ONLY - INFORMATION ONLY - 632+00 - 632+00 - 15' LT - 27' LT - 0-5 - 0-5 BROWN - BROWN - SC - 93 13 36.70 93 13 36.60 N N 100 N 95 - 100 A - 93 - 99 0 - 92 - 99 0 - 94 - 92 - 99 0 - 96 - 92 - 99 0 - 96 - 92 - 99 0 - 84 - 92 - 99 0 - 84 - 92 - 99 0 - 68 - 74 - 21 - 21 - 21 - 21 - 21 - 21 - 21 - 2				

REMARKS 🖃 W=MULTIPLE LAYERS, X=STRIPPED

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⁻ ALL LOCATIONS MEASURED FROM CENTERLINE OF EXISTING HIGHWAY

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

DATE - 12/09/15 SEQUENCE NO 32 JOB NUMBER - CA0705 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 - 14 SUPPLIER NAME - STATE DISTRICT NO 07 NAME OF PROJECT - HWY.98 - HWY.79 (WIDENING) (S) PROJECT ENGINEER - NOT APPLICABLE PIT/QUARRY - ARKANSAS									
LOCATION - COLUMBIA, COUNTY SAMPLED BY - T.FRAZIER DATE SAMPLED - 11/03/15 SAMPLE FROM - TEST HOLE DATE TESTED - 12/01/15									
MATERIAL DESC SOI		Y - R VALUE- PAV	EME	NT SOUNDIN		. بن	12/	01/13	
LAB NUMBER SAMPLE ID TEST STATUS	-	20153693 S650 INFORMATION ONLY	-	20153694 S651		-	20153695 S652	N. ONT V	
STATION	_	640+00	_	640+00			648+00	IN ONLI	
LOCATION		15' RT	-	27' RT		-	06' LT		
DEPTH IN FEET	-	0-5	_	0 - 5		-	0 - 5		
MAT'L COLOR MAT'L TYPE	-	BROWN	-	BROWN		-	BROWN		
LATITUDE DEG-MIN-	SEC -	33 17 52.30		33 17		=			
LONGITUDE DEG-MIN-	SEC -	93 13 27.20		93 13	27.20		93 13 3	17.80	
•	IN IN		=			-			
	IN IN	100	2	100		-	100		
		100 99	_	99		-	99		
NO.		98	\sim	98		(+)	99		
NO.	40 -	97	2	92		_	98		
NO.		90	G-	93			81		
NO.	200 -	62		46			59		
LIQUID LIMIT	_	24	2	23		-	16		
PLASTICITY INDEX	_	09	= 1	06		*	03		
AASHTO SOIL	-	A-4(3)	2	A-4(0)		-	A-4 (0)		
UNIFIED SOIL	-					-			
% MOISTURE CONTENT	-	21.1		17.3			11.0		
ACHMSC	(IN) -	3.5₩	-			÷	5.0W		
ACHMBC	(IN) -		-			α	2.25		
SAND	(IN) -	4.0		(#.H.H.)		-	4.0		
	-		-			-			
	777		-			7			
	2		•			-			
	-		-			-			
	20		-			7			

REMARKS W=MULTIPLE LAYERS, X=STRIPPED

ALL LOCATIONS MEASURED FROM CENTERLINE OF EXISTING HIGHWAY

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AASHTO TESTS : T24 T88 T89 T90 T265

- 8

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

DATE - 12/09/15 SEQUENCE NO 33 JOB NUMBER - CA0705 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 - 14 SUPPLIER NAME - STATE DISTRICT NO 07 NAME OF PROJECT - HWY.98 - HWY.79 (WIDENING) (S) PROJECT ENGINEER - NOT APPLICABLE PIT/QUARRY - ARKANSAS LOCATION - COLUMBIA, COUNTY DATE SAMPLED - 11/03/15 SAMPLED BY - T.FRAZIER DATE RECEIVED - 11/05/15 SAMPLE FROM - TEST HOLE DATE TESTED - 12/01/15									
LAB NUMBER		2020000		20153697		20153698			
SAMPLE ID		S653		S654		S655			
TEST STATUS						INFORMATION ONLY			
STATION		648+00		648+00 27' LT		656+00 06' RT			
LOCATION DEPTH IN FEET		15' LT 0-5	*	0-5	-	0-5			
		BR/GR	-	BR/GR	-	BROWN			
MAT'L COLOR MAT'L TYPE	33/) 22/11	DR/ GR	#	DR/ OR	_	BROWN			
LATITUDE DEG-MIN-SE	3C -	33 17 51.40	-	33 17 !	- 51.50 -	33 17 49.80			
LONGITUDE DEG-MIN-SE						93 13 8.70			
	IN. =								
1 1/2 I			_		-				
	IN.		-		:=:				
	IN	100	-		1754	100			
NO.			-	100	12	99			
NO. 1			-	99	-	99			
NO. 4			-	98	_	98			
NO. 8	30 =	77	-	77		88			
NO. 20	0.0	54		53		60			
LIQUID LIMIT		16	-	ND	7-	17			
PLASTICITY INDEX	-	03	=	NP	22	02			
AASHTO SOIL	40		=	A-4 (0)	(<u>a</u>	A-4(0)			
UNIFIED SOIL	27	()	-) E	(- (
% MOISTURE CONTENT	=	14.1	-	11.8	7,65	15.0			
ACHMSC (IN) -	3.25W	-		_	5.5W			
	IN) -	5.251	-		-	2.0			
,	IN) -	6.0	-		_	6.0			
,	~:		-		-				
8	**		-		_				
	20 20		=		_				
	=		_		-				
	=:		-		-				
	, -		-		-				

REMARKS — W=MULTIPLE LAYERS, X=STRIPPED

- ALL LOCATIONS MEASURED FROM CENTERLINE OF EXISTING HIGHWAY

AASHTO TESTS : T24 T88 T89 T90 T265

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

GNED Y SAMPLE CATION CHECK HWY.79 (WIDENING) ICABLE UNTY	(S)	MATERIAL SPEC. YEA SUPPLIER COUNTY/ST DISTRICT	TATE - 14			
SAMPLED BY - T.FRAZIER DATE RECEIVED - 11/05/1 SAMPLE FROM - TEST HOLE DATE TESTED - 12/01/1 MATERIAL DESC SOIL SURVEY - R VALUE - PAVEMENT SOUNDINGS						
20153699 S656	- 20153700 - 8657		20153701 S658 INFORMATION ONLY 664+00 06' LT 0-5 BR/GR			
33 17 49.80 93 13 8.60	33 17 93 13	49.70 - 8.60	33 17 48.60 93 12 59.20			
100 99 95 94 86 53	- - - 100 - 99 - 97 - 96 - 86 55		100 99 98 86			
ND NP A-4(0)	- ND - NP - A-4(0) - 16.6		19 04 A-4(0)			
3.0W 6.0 			6.0W 1.5 4.0			
בי כ	Y SAMPLE CATION CHECK HWY.79 (WIDENING) ICABLE JNTY Y - R VALUE- PAVI 20153699 S656 INFORMATION ONLY 656+00 15' RT 0-5 BR/GR 33 17 49.80 93 13 8.60 100 99 95 94 86 53 ND NP A-4(0) 14.3 3.0W 6.0	Y SAMPLE CATION CHECK HWY.79 (WIDENING) (S) ICABLE JINTY Y - R VALUE- PAVEMENT SOUNDING 20153699 - 20153700 2656 - S657 INFORMATION ONLY - INFORMATION 656+00 - 656+00 15' RT - 27' RT 0-5 - 0-5 BR/GR - BROWN 33 17 49.80 - 33 17 93 13 8.60 93 13	MATERIAL SPEC. YEX SUPPLIER CATION CHECK COUNTY/ST DISTRICT HWY.79 (WIDENING) (S) ICABLE JNTY DATE SAM DATE REC. DATE TEST Y - R VALUE- PAVEMENT SOUNDINGS 20153699 - 20153700 - S656 - S657 INFORMATION ONLY - INFORMATION ONLY - OF SECTION OF SECTIO			

REMARKS W=MULTIPLE LAYERS, X=STRIPPED

ALL LOCATIONS MEASURED FROM CENTERLINE OF EXISTING HIGHWAY

AASHTO TESTS : T24 T88 T89 T90 T265

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

DATE - 12/01/15 SEQUENCE NO. - 35

JOB NUMBER - CA0705 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 - 14

SUPPLIER NAME - STATE DISTRICT NO. - 07

NAME OF PROJECT - HWY.98 - HWY.79 (WIDENING) (S)

PROJECT ENGINEER - NOT APPLICABLE

PIT/QUARRY - ARKANSAS

LAB NUMBER

LOCATION - COLUMBIA, COUNTY DATE SAMPLED -

SAMPLED BY - T.FRAZIER DATE RECEIVED - 11/05/15

= 20153703

SAMPLE FROM - TEST HOLE DATE TESTED -

MATERIAL DESC. - SOIL SURVEY - R VALUE- PAVEMENT SOUNDINGS

- 20153702

IAD NONDER			20153702 S659			20155	103			
SAMPLE ID	SAMPLE ID				-	S660			*	
TEST STATUS		-	INFORMATI	ON ONLY	4	INFOR	(TAM	ON ONLY		
STATION		_	664+00		-	664+0	0		-	
LOCATION		_	15' LT		***	27' L	Т			
DEPTH IN FEET	ı	_	0-5		-	0-5			•	
MAT'L COLOR		_	BR/GR		-	BROWN			_	
MAT'L COLOR MAT'L TYPE		_	DIC/ OIC		-	Ditonii			-	
LATITUDE DEG	-MIN-SEC	-	33 17	48.80	-	33	17	48.90	*	
LONGITUDE DEG	-MIN-SEC	-	93 12	59.30		93	12	59.20		
% PASSING	2 IN.	_			¥)				-	
	1 1/2 IN.	_			-				-	
	3/4 IN.				27/	100			177	
	3/8 IN.		100		-	99			_	
	NO. 4	_	99		40	97			-	
			99		\rightarrow	95			-	
		-			7					
	NO. 40	-	98		-	93			-	
	NO. 80	-	88		4	84			_	
	NO. 200	-	60			63				
LIQUID LIMIT		-	17		-	17				
PLASTICITY IN	DEX	-	04			04			-	
AASHTO SOIL		_	A-4(0)		•	A-4 (0)		-	
UNIFIED SOIL		_			-					
% MOISTURE CO	NTENT	-	15.8		+	15	.0		-	
ACHMSC	(IN)	-	3.75W		-				-	
SAND	(IN)	-	4.0		-				-	
		-			-				-	
		-			-				_	
		-			-				_	
		-			100				_	
		-			-				_	
		_			-				_	
		_			120				_	
					127					

REMARKS - W=MULTIPLE LAYERS, X=STRIPPED

- ALL LOCATIONS MEASURED FROM CENTERLINE OF EXISTING HIGHWAY

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

DATE - 12/07/1 JOB NUMBER - CA0705 FEDERAL AID NO TO BE A PURPOSE - SOIL SU SPEC. REMARKS - NO SPEC SUPPLIER NAME - STATE NAME OF PROJECT - HWY.9 PROJECT ENGINEER - NOT A PIT/QUARRY - ARKANSAS LOCATION - COLUMBIA, SAMPLED BY - T.FRAZIER SAMPLE FROM - TEST HOLE MATERIAL DESC SOIL SU	ASSIGNED URVEY SAMPLE CIFICATION CHECK 98 - HWY.79 (WIDENING) APPLICABLE , COUNTY	(S)	SEQUENCE NO 1 MATERIAL CODE - RV SPEC. YEAR - 2014 SUPPLIER ID 1 COUNTY/STATE - 14 DISTRICT NO 07 DATE SAMPLED - 11/03/15 DATE RECEIVED - 11/05/15 DATE TESTED - 12/04/15 RESULTS
LAB NUMBER	- 20153704	20153705	- 20153706
SAMPLE ID		= RV662	- RV663
TEST STATUS			NONLY - INFORMATION ONLY
STATION	- 379+00	462+00	- 610+00
LOCATION	- 27' LT	36' LT	- 27' RT
DEPTH IN FEET	- 0-5	0-5	- 0-5
MAT'L COLOR	- BROWN	BROWN	_ RD/BR
MAT'L TYPE	-	51	_
LATITUDE DEG-MIN-SEC			
LONGITUDE DEG-MIN-SEC	- 93 17 54.30	93 16 3	8.80 93 14 2.50
% PASSING 2 IN.		*	=
1 1/2 IN.		=	(4)
3/4 IN.		100	·
3/8 IN.	100	95	100
1.0.		93	96
		91	95
NO. 40	- 95	89	<u>~</u> 93
NO. 80	- 92	÷ 83	- 74
NO. 200	- 77	68	52
LIQUID LIMIT	- 27	- 22	- 23
PLASTICITY INDEX	- 05	- 03	06
AASHTO SOIL	- A-4(3)	A-4(0)	A-4(0)
UNIFIED SOIL	-	-	5.775 1.775
% MOISTURE CONTENT	-		
	-		=
	-	=	Ħ
	-	2 2	≅
	_	-	-
	_		≈ ₩
	-	-	2 4
	-	#:	-
	- -	#1 -20	=
			₩ 2

REMARKS -

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

*** SO	IL SURVEY / PAVEMENT SO	OUNDING TEST REPORT ***	
DATE - 12/07/1 JOB NUMBER - CA0705 FEDERAL AID NO TO BE A PURPOSE - SOIL SU SPEC. REMARKS - NO SPEC SUPPLIER NAME - STATE NAME OF PROJECT - HWY.9 PROJECT ENGINEER - NOT A PIT/QUARRY - ARKANSAS LOCATION - COLUMBIA, SAMPLED BY - T.FRAZIER SAMPLE FROM - TEST HOLE MATERIAL DESC SOIL SU	SSIGNED RVEY SAMPLE IFICATION CHECK 8 - HWY.79 (WIDENING) PPLICABLE COUNTY	DATE SAMPLE DATE RECEIV DATE TESTED	DE - RV - 2014 1 E - 14
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. 3/4 IN.	- 20153707 - RV664 - INFORMATION ONLY - 656+00 - 27' RT - 0-5 - BROWN - 33 17 49.70 - 93 13 8.60 100 - 99 - 97 - 97 - 96 - 89 - 89		
LIQUID LIMIT PLASTICITY INDEX AASHTO SOIL UNIFIED SOIL % MOISTURE CONTENT	- ND	- - - - - - - - - - - - - - - - - - -	

REMARKS -

AASHTO TESTS : T24 T88 T89 T90 T265

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