ARKANSAS DEPARTMENT OF TRANSPORTATION



SUBSURFACE INVESTIGATION

STATE JOB NO.		090384		
FEDERAL AID PRO	JECT NO.	STPF-CA-0004(67)		
PE	A RIDGE NAT		(MITIGATION (S)	
STATE HIGHWAY		SECTION		
IN		BENTON		<u>COUNTY</u>

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

ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT

December 22, 2010

TO: Mr. Michael D. Fugett, Engineer of Roadway Design

SUBJECT: Job No. 090065 Avoca – North Garfield (S) Route 62 Section 2 Benton County

The Geotechnical Section has reviewed the proposed cross-sections for the above referenced project for the station limits of 170+00 to 186+00. The area of the project alignment has been mapped as the Boone Formation (Mb). The Boone is composed of gray; fine to coarse grained fossiliferous limestone interbedded with chert and is known for dissolutional features. Some sections may be predominantly either limestone or chert. The quantity of chert varies considerably both vertically and horizontally. The thickness of the Boone Formation is 300 to 350 feet in most of northern Arkansas. The limestone is overlain with various thickness of reddish cherty clay material. Top of bedrock exposed along the alignment of the proposed cut is approximately 5 to 15 feet above the existing ditch grade.

The proposed cuts between stations 172+00 to 178+00 left and right of centerline, station 179+00 left of centerline, station 180+00 left and right of centerline and stations 181+00 to 186+00 right of centerline are rock cuts with an approximate depth of 28 feet with varying amounts of overburden. The limestone bedrock may be excavated on a slope no steeper than 0.5H:1V. The limestone will require blasting to obtain the recommended slope configuration. A 5 feet wide bench should be constructed at the cherty clay – limestone interface to provide an area for isolated slope adjustments during construction if dissolutional features are encountered during rock excavation. The cherty clay overburden should be excavated on slopes no steeper than 3H:1V.

Michael C. Benson Materials Engineer

MCB:jaa:bjj Attachment cc: State Constr. Eng. – Master File Copy District 9 Engineer G. C. File

ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT

December 22, 2009

TO: Mr. Charles Clements, Engineer of Roadway Design

SUBJECT: Job No. 090065 Avoca – North Garfield (S) Route 62 Section 2 Benton County

Transmitted herewith is the requested Soil Survey, Strength Data and Resilient Modulus test results for the above referenced job. The project consists of widening 6.439 miles of Highway 62 from two lanes to five lanes. A portion of the project involves a relocation of the roadway off of the existing alignment. Samples were obtained in the travel lanes, shoulders and ditch line of the existing highway as well as selected locations along the proposed new location. All sample locations were measured from the proposed centerline of construction.

Based on laboratory test results of samples obtained within the existing ditch line, material in the vicinity of stations 115+00 to 147+00, 163+00 to 187+00, 203+00 to 235+00, 371+00, 387+00 and 419+00 consists primarily of highly plastic cherty clay. Given the high chert fragment content of the samples, it is anticipated that the material should provide a stable working platform if the weather during construction is good and/or additional processing of the subgrade material is performed by the contractor to dry the material. If weather conditions are poor and additional processing of the material is not sufficient to allow work to proceed, undercutting to stable material and backfilling with stone backfill may be considered to accelerate the work schedule.

It is recommended that fill slopes on this project are constructed at no steeper than a 3H:1V configuration. Cut slopes in soil should also be limited to a maximum 3H:1V configuration, but cutting on steeper configurations may be considered if any areas of cut extend into bedrock. Bedrock (limestone and/or chert) was encountered at several locations within the project limits. Table 1 below provides a summary of the locations where rock was encountered and the depth to rock. Design profile and cross sections were not available at the time of this investigation; further recommendations for slope construction can be provided upon request when design profiles and cross sections become available.

Station and Location	Depth (ft)	Station and Location	Depth (ft)
115+00; 10' and 27' RT CL	4.2, 4.0	235+00; 5' RT CL	3.5
131+00; 34' RT CL	3.5	243+00; 7', 16', and 47' LT CL	3.5, 3.5, 3.5
139+00; 6' RT CL	2.5	259+00; 6' and 39' LT CL	3.8, 2.3
147+00; 1' and 8' RT CL	4.0, 3.5	267+00; 16' and 50' RT CL	4.5, 1.5
155+00; 7' RT CL	2.5	275+00; 15' and 58' RT CL	2.5, 2.5
163+00; 5' LT CL	2.5	307+00; CL	4.0
171+00; 6' and 30' LT CL	4.0, 3.5	371+00; 14' LT CL	1.5
179+00; 20' and 36' LT CL	1.5, 4.7	387+00; 12' LT CL	2.5
203+00; 21' and 45' LT CL	3.5, 3.5	419+00; 44' LT CL	2.0
210+00; 11', 23', and 48' LT CL	3.0, 4.0, 4.0	427+00; 12' and 22' LT CL	2.0, 3.0
219+00; 11' and 50' RT CL	3.5, 4.0	443+00; 10' LT CL	1.5

TABLE 1 – Location and Depth to Rock Encountered

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

Туре	Asphalt Cement %	Mineral Aggregate %
Surface Course	5.9	94.1
Binder Course	4.9	95.1
Base Course	4.4	95.6

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Michael C. Benson Materials Engineer

MCB:bj

Attachment

cc: State Constr. Eng. – Master File Copy District 9 Engineer Planning Div. – Jared Wiley G. C. File ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT - LITTLE ROCK, ARKANSAS MATERIALS DIVISION MICHAEL BENSON, MATERIALS ENGINEER *** SOIL SURVEY STRENGTH TEST REPORT ***

DATE - 11, JOB NUMBER - 09(/30/2009 0065	SEQUENCE NO 1 MATERIAL CODE - SSRVPS SPEC. YEAR - 2003 SUPPLIER ID 1 COUNTY/STATE - 04 DISTRICT NO 09
JOB NAME - AVOCA	A - NORTH GARFIELD (S)	DISTRICT NO 09
* * * * * * * * * * * * * * * *	*****	* * * * * * * * * * * * * * * * * * * *
*	STATION LIMITS	R-VALUE AT 240 psi *
* * * * * * * * * * * * * * * *	* * * * * * * * * * * * * * * * * * * *	********************************
	BEGIN JOB - END JOB	6
	RESLIENT MODULUS	
	STA.155+00	8002
	STA.235+00	7680
	STA.395+40	7331

REMARKS -

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AASHTO TESTS : T190

JOB: 090065

COUNTY NO. 4

Arkansas State Highway Transporation Department

JOB NAME: AVOCA - NORTH GARFIELD (S)

DATE TESTED 11/24/2009

Materials Division Michael Benson, Materials Engineer

00011		• •	DITL ILDI		1/24/	2009						C,	
STA.#	LOC.	DEPTH	H COLOR	#4	#10	#40 E	#80 V	#200 E S	<i>L.L</i> .	<i>P.I.</i>	SOIL CLASS	LAB #: 5	%MOISTURE
155+00	56'RT		RED	100	99	97	93	78	27	8	A-4(5)	RV938	
235+00	50'RT		RED	100	95	89	82	78	33	20	A-6(13)	RV939	
395+40	42'RT		RED	100	95	89	83	78	35	16	A-6(11)	RV940	
115+00	10'RT	0-4.2Z	RED	100	92	77	70	64	33	18	A-6(9)	S846	20.3
115+00	27'RT	0-4.0Z	RED	100	96	88	84	80	29	15	A-6(10)	S847	21.4
115+00	52'RT	0-5	RED	100	88	76	73	69	51	32	A-7-6(21)	S848	16.1
123+00	7'RT	0-5	RED	100	91	78	73	67	52	36	A-7-6(22)	S849	26.8
123+00	28'RT	0-5	RED	100	98	91	86	80	56	39	A-7-6(31)	S850	31.7
123+00	56'RT	0-5	RED	100	92	72	64	56	40	22	A-6(9)	S851	19.6
131+00	6'RT	0-5	RED	100	96	87	82	76	50	32	A-7-6(24)	S852	40.2
131+00	16'RT	0-5	RED	100	92	79	73	67	36	23	A-6(13)	S853	22.2
131+00	34'RT	0-3.5Z	RED	100	91	81	77	72	50	33	A-7-6(22)	S854	19.7
139+00	6'RT	0-2.5Z	RED	100	92	78	73	67	41	26	A-7-6(15)	S855	22.4
139+00	17'RT	0-5	RED	100	94	84	80	75	36	20	A-6(13)	S856	25
139+00	50'RT	0-5	RED	100	89	75	71	67	35	19	A-6(9)	S857	18.3
147+00	8'LT	0-4Z	RED	100	93	79	73	66	35	20	A-6(11)	S858	26
147+00	1'RT	0-3.5Z	RED	100	94	80	74	67	44	27	A-7-6(16)	S859	31.4
147+00	29'RT	0-5	RED	100	95	84	79	75	61	42	A-7-6(31)	S860	32.8
155+00	7'LT	0-5	RED	100	97	86	79	71	27	12	A-6(6)	S861	20.8
155+00	7'RT	0-2.5Z	RED	100	96	84	77	70	26	10	A-4(5)	S862	19.8
155+00	41'RT	0-5	RED	100	99	98	94	80	24	5	A-4(2)	S863	21.4
163+00	R'LT	0-2.5Z	RED	100	93	79	73	69	36	22	A-6(11)	S864	23.1
163+00	11'RT	0-5	RED	100	88	75	70	65	48	32	A-7-6(18)	S865	23.6
171+00	6'LT	0-4Z	RED	100	98	94	91	87	60	42	A-7-6(39)	S866	32.8
171+00	16'LT	0-5	RED	100	95	89	87	84	60	42	A-7-6(37)	S867	30.5
171+00	30'LT	0-3.5Z	RED	100	92	83	79	74	47	27	A-7-6(19)	S868	32.8

comments: Z=AUGER REFUSAL, W=MULTIPLE LAYERS, X=STRIPPED LOCATIONS MEASURED FROM CENTERLINE OF CONSTRUCTION Monday, December 21, 2009

STA,#	LOC.	DEPTH	COLOR	#4	#10 I	#40 E	#80 V	#200	L.L.	<i>P.I</i> .	SOIL CLASS	LAB #:	%MOISTURE
179+00	6'LT	0-5	RED	100	88	72	66	60	23	7	A-4(2)	S869	18.4
179+00	20'LT	0-1.5Z	RED	100	76	51	43	37	ND	NP	A-4(0)	S870	7.5
179+00	36'LT	0-4.7Z	RED	100	93	83	79	75	40	24	A-6(16)	S871	31.6
187+00	5'LT	0-5	RD/BR	100	96	88	82	66	26	9	A-4(4)	S872	20.2
187+00	16'LT	0-5	RD/BR	100	88	76	71	66	37	23	A-6(12)	S873	21.7
187+00	35'LT	0-5	RED	100	95	88	83	78	37	20	A-6(14)	S874	26.8
195+00	5'LT	0-5	RD/BR	100	90	79	75	71	33	19	A-6(11)	S875	20.2
195+00	16'LT	0-5	RD/BR	100	87	77	72	68	31	17	A-6(9)	S876	21.8
195+00	40'LT	0-5	RD/BR	100	96	91	85	79	30	14	A-6(9)	S877	19.3
203+00	8'LT	0-5	RD/BR	100	94	83	77	72	24	7	A-4(11)	S878	19.2
203+00	21'LT	0-3.5Z	RD/BR	100	92	81	76	70	28	12	A-6(6)	S879	18.9
203+00	45'LT	0-3.5Z	RED	100	99	81	78	75	55	39	A-7-6(28)	S880	30.1
210+00	11'LT	0-3Z	RED	100	96	86	81	75	33	18	A-6(11)	S881	20.5
210+00	23'LT	0-4Z	RED	100	97	90	87	83	34	19	A-6(14)	S882	21
210+00	48'LT	0-4Z	RED	100	97	89	86	81	47	30	A-7-6(24)	S883	26.8
219+00	11'RT	0-3.5Z	RED	100	93	83	79	75	34	18	A-6(11)	S884	20.5
219+00	50'RT	0-4Z	RED	100	94	85	82	78	41	24	A-7-6(18)	S885	23.9
227+00	7'LT	0-5	RED	100	96	93	82	61	54	37	A-7-6(19)	S886	28.7
227+00	15'LT	0-5	RED	100	89	74	68	62	45	30	A-7-6(15)	S887	21.1
227+00	27'LT	0-5	RED	100	93	80	75	71	68	50	A-7-6(35)	S888	27.4
235+00	5'RT	0-3.5Z	RED	100	93	80	73	63	28	13	A-6(5)	S889	16.7
235+00	15'RT	0-5	RED	100	88	77	73	67	23	6	A-4(2)	S890	18.7
235+00	50'RT	0-5	RED	100	94	88	84	76	38	22	A-6(15)	S891	22.4
243+00	7'LT	0-3.5Z	RD/BR	100	92	84	80	76	33	17	A-6(11)	S892	21.4
243+00	16'LT	0-3.5Z	RD/BR	100	89	80	76	71	27	12	A-6(6)	S893	23.2
243+00	47'LT	0-5	RED	100	90	85	81	76	31	12	A-6(8)	S894	24.8
251+00	7'RT	0-5	BROWN	100	96	93	91	87	26	9	A-4(6)	S895	22.2
251+00	16'RT	0-5	BROWN	100	95	90	86	82	23	7	A-4(3)	S896	23.3

STA.#	LOC.	DEPTH	COLOR	#4	#10	#40 E	#80 V E	#200	L.L.	<i>P.I.</i>	SOIL CLASS	LAB #:	%MOISTURE
251+00	50'RT	0-5	RD/BR	100	93	86	83	78	34	18	A-6(12)	S897	21.9
259+00	6'LT	0-3.8Z	RED	100	87	74	68	61	28	13	A-6(5)	S898	19.3
259+00	16'LT	0-5	RED	100	92	76	70	64	31	14	A-6(6)	S899	22.1
259+00	56'LT	0-2.8Z	RED	100	88	77	73	69	45	27	A-7-6(17)	S900	33.5
267+00	6'RT	0-5	BROWN	100	90	75	70	66	22	7	A-4(2)	S901	19.9
267+00	16'RT	0-4.5Z	BROWN	100	84	71	65	60	23	7	A-4(2)	S902	22.9
267+00	50'RT	0-1.5Z	RD/BR	100	79	69	66	64	31	7	A-4(3)	S903	26
275+00	6'RT	0-5	RED	100	87	69	63	57	27	11	A-6(3)	S904	24.1
275+00	15'RT	0-2.5Z	RED	100	84	68	63	58	26	8	A-4(2)	S905	19.8
275+00	58'RT	0-2.5Z	RED	100	86	75	71	66	26	7	A-4(3)	S906	16.9
283+00	CL	0-5	RD/BR	100	82	70	66	63	35	18	A-6(9)	S907	24.5
291+00	CL	0-5	RD/BR	100	93	90	86	81	31	13	A-6(9)	S908	22.7
296+00	CL	0-5	RED	100	94	86	82	77	29	12	A-6(7)	S909	22.4
307+00	CL	0-4Z	RED	100	89	73	69	64	29	11	A-6(5)	S910	27.2
318+50	CL	0-5	RED	100	91	82	78	73	29	12	A-6(7)	S911	20.1
323+00	CL	0-5	RED	100	93	86	81	74	31	14	A-6(8)	S912	20.7
331+00	CL	0-5	BR/RD	100	85	69	63	56	25	8	A-4(2)	S913	19.1
339+50	100'LT	0-5	BR/RD	100	88	81	77	72	28	10	A-4(5)	S914	22
347+00	CL	0-5	RED	100	90	78	75	69	27	10	A-4(5)	S915	23.8
355+25	CL	0-5	RED	100	92	76	70	62	25	7	A-4(2)	S916	28.8
363+00	CL	0-5	RED	100	97	89	83	77	32	13	A-6(9)	S917	18.4
371+00	14'LT	0-1.5Z	RED	100	84	75	69	62	44	26	A-7-6(13)	S918	29.4
371+00	23'LT	0-5	RED	100	95	86	82	75	32	14	A-6(9)	S919	34.5
379+50	11'RT	0-5	RED	100	89	75	70	60	34	18	A-6(8)	S920	22.6
379+50	50'RT	0-5	RED	100	95	89	84	77	28	10	A-4(6)	S921	29.5
387+00	12'LT	0-3.1Z	RED	100	92	85	82	77	48	31	A-7-6(23)	S922	34.9
387+00	29'LT	0-5	RD/BR	100	92	81	76	70	38	22	A-6(13)	S923	31
395+40	12'RT	0-5	RED	100	95	85	81	75	22	8	A-4(3)	S924	22.1

STA.#	LOC.	DEPTH	COLOR	#4	#10	#40	#8 <i>0</i>	#200	<i>L.L</i> .	<i>P.I</i> .	SOIL CLASS	LAB #:	%MOISTURE
395+40	42'RT	0-5	RED	<u> </u>	92	<u>Е</u> 86	<u>v 1</u> 83	<u>s</u> 78	29	11	A-6(7)	S925	29.9
403+00	11'LT	0-5	RED	100	91	80	73	63	22	7	A-4(2)	S926	17.5
403+00	45'LT	0-5	RED	100	90	73	67	61	29	13	A-6(5)	S927	17.2
411+00	10'RT	0-5	RED	100	86	74	66	55	23	7	A-4(1)	S928	16.8
411+00	50'RT	0-5	RED	100	96	85	79	72	27	8	A-4(4)	S929	17.5
419+00	10'LT	0-5	RED	100	98	95	93	80	46	31	A-7-6(24)	S930	23.6
419+00	44'LT	0-2.0Z	BROWN	100	93	90	88	77	50	32	A-7-6(24)	S931	26.9
427+00	12'LT	0-2Z	BROWN	100	82	74	71	56	24	7	A-4(1)	S932	13.6
427+00	22'LT	0-3.0Z	BROWN	100	91	78	68	53	35	17	A-6(6)	S933	14.8
435+00	11'RT	0-5	BROWN	100	91	84	80	67	21	6	A-4(1)	S934	17.4
443+00	10'LT	0-1.5Z	RED	100	85	78	68	60	26	10	A-4(3)	S935	15.5
443+00	20'LT	0-5	RED	100	97	87	82	75	29	10	A-4(6)	S936	21.7
443+00	32'LT	0-5	RED	100	91	77	71	65	28	10	A-4(4)	S937	22.3

JOB: JOB NAME:	JOB: 090065 JOB NAME: AVOCA - NORTH GARFIELD (S)	Arkanse	rkansas State Highway Transporation Department Materials Division	poration Department ion	DATE TESTED 11/24/2009
COUNTY NO.). 4		Michael Benson, Materials Engineer	erials Engineer	
LOC.			PAVEMENT SOUNDINGS	DINGS	
10'RT	T ACHM SURFACE ACHM BINDER 4.0W 3.25	ACHM SURFACE 3.5	AGG BASE CRS CL7 6.0		
27'RT	T ACHM SURFACE ACHM BINDER 4.0W 6.75	ACHM SURFACE	AGG BASE CRS CL7 8.0		
52'RT	T ACHM SURFACE ACHM BINDER	ACHM SURFACE	AGG BASE CRS CL7		
7'RT					
28'RT	ACHM SURFACE 4.0	ACHM SURFACE	AGG BASE CRS CL7 8.0		
56'RT	T ACHM SURFACE ACHM BINDER		AGG BASE CRS CL7		
6'RT	ACHM SURFACE ACHM BINDER 6.0W 2.5	 AGG BASE CRS CL7 6.0	1		
16'RT	T ACHM SURFACE ACHM BINDER 3.0X	AGG BASE CRS CL7 7.0			
34'RT	T ACHM SURFACE ACHM BINDER	AGG BASE CRS CL7			
6'RT	ACHM SURFACE ACHM BINDER 5.75W 2.0	— AGG BASE CRS CL7 8.0			
17'RT 50'RT	T ACHM SURFACE ACHM BINDER 3.0 T ACHM SURFACE ACHM BINDER	AGG BASE CRS CL7 6.0 AGG BASE CRS CL7			
8'LT		— ACHM SURFACE 3.5	ACHM BINDER 2.5	AGG BASE CRS CL7 7.0	
1'RT	ACHM SURFACE ACHM BINDER 5.5W	ACHM SURFACE	ACHM BINDER	AGG BASE CRS CL7 7.0	
7'LT				AGG BASE CRS CL7 	
7'RT					
comments:	Z=AUGER REFUSAL, W=MULTIPLE LAYERS, X=STRIPPED LOCATIONS MEASURED FROM CENTERLINE OF CONSTRUCTION	S, X=STRIPPED VE OF CONSTRUCTION		Monday, December 21, 2009	

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STA.#	LOC.		PAVEMENT SOUNDINGS	S
155+00	41'RT	ACHM SURFACE AGG BASE CRS CL7		
163+00	R'LT	ACHM SURFACE ACHM BINDER 9.0W 1.5	AGG BASE CRS CL7 6.0	
163+00	11'RT	1 SURFACE	AGG BASE CRS CL7 6.0	
171+00	6'LT	ACHM SURFACE ACHM BINDER 5.0 1.5	AGG BASE CRS CL7 5.0	
171+00	16'LT	ACHM SURFACE ACHM BINDER 3.0	AGG BASE CRS CL7 5.0	
171+00	30'LT	ACHM SURFACE ACHM BINDER	AGG BASE CRS CL7	
179+00	6'LT			
179+00	20'LT	ACHM SURFACE ASPH TREAT BASE C 3.5W	ASPH TREAT BASE CR&SPH TREAT BASE CRS AGG BASE CRS CL7 	
179+00	36'LT	ACHM SURFACE ASPH TREAT BASE CRSSPH TREAT BASE CRS	CR&SPH TREAT BASE CRS AGG BASE CRS CL7	
187+00	5'LT		CRESPH TREAT BASE CRS AGG BASE CRS CL7 1.0X 3.0	
187+00	16'LT	ACHM SURFACE ACHM BINDER 2.5	ASPH TREAT BASE CRS AGG BASE CRS CL7 	
187+00	35'LT	ACHM SURFACE ACHM BINDER	ASPH TREAT BASE CRS AGG BASE CRS CL7	
195+00	5'LT	ACHM SURFACE ACHM BINDER 5.0W 2.5		
195+00	16'LT	ACHM SURFACE AGG BASE CRS CL7 4.5W 5.0		
195+00	40'LT	ACHM SURFACE AGG BASE CRS CL7		
203+00	8'LT			
203+00	21'LT	ACHM SURFACE ACHM BINDER 3.0W	AGG BASE CRS CL7 6.0	
203+00	45'LT	ACHM SURFACE ACHM BINDER	AGG BASE CRS CL7	
210+00	11'LT			
comments:		Z=AUGER REFUSAL, W=MULTIPLE LAYERS, X=STRIPPED LOCATIONS MEASURED FROM CENTERLINE OF CONSTRUCTION	S, X=STRIPPED NE OF CONSTRUCTION	Monday, December 21, 2009

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STA.#	LOC.			PAVFMFNT SOUNDINGS	DINCO		
				IAVENENI SOUN	CUVIC		
210+00	23'LT	ACHM SURFACE ACHM BINDER	AGG BASE CRS CL7				
		3.5W	0.9				
210+00	48'LT	ACHM SURFACE ACHM BINDER	AGG BASE CRS CL7				
			[
219+00	11'RT	ACHM SURFACE ACHM BINDER	AGG BASE CRS CL7				
			0.6				
219+00	50'RT	ACHM SURFACE CHIP SEAL	ACHM BINDER	AGG BASE CRS CL7			
00-200	ł]	1			
00+/27		ACHM SURFACE CHIP SEAL 11 75W 10	ACHM BINDER	AGG BASE CRS CL7			
	ł		Ċ.				
227+00	15'LT	ACHM SURFACE CHIP SEAL	ACHM BINDER	AGG BASE CRS CL7			
		6.UW	2.0	5.0			
227+00	27'LT	ACHM SURFACE AGG BASE CRS CL7					
]					
235+00	5'RT	SURFACE					
		12.25W 3.0					
235+00	15'RT	I SURFACE					
		7.5W 5.0					
235+00	50'RT	ACHM SURFACE CHIP SEAL	ACHM BINDER	ASPH TREAT BASE CRS	AGG BASE CRS CL7	-7	
		1	I	I	1		
243+00	7'LT	ACHM SURFACE CHIP SEAL	ACHM BINDER	ASPH TREAT BASE CRS	AGG BASE CRS CI 7	7	
		11.0W 1.0	2.0	J	5.0	ī	
243+00	16'LT	ACHM SURFACE CHIP SEAL	ACHM BINDER	ASPH TREAT BASE CPS		2	
		7.0W		AN TITLE PAGE CAS		-1	
00.010	1 1			X0:0	4.0		
243+00	47'LI	ACHIM SURFACE ACHIM BINDER	CHIP SEAL	ACHM BINDER	CHIPSEAL	ACHM BINDER	AGG BASE CRS C
		1	l	1	1	I	1
251+00	7'RT	ACHM SURFACE ACHM BINDER	CHIP SEAL	ACHM BINDER	CHIPSEAL	ACHM BINDER	AGG BASE CRS C
		7.5W 2.0	1.0	1.5	.5	2.0	3.0
251+00	16'RT	ACHM SURFACE ACHM BINDER	CHIP SEAL	ACHM BINDER	CHIPSEAL	ACHM BINDER	AGG BASE CRS C
		11.0W	I	!		ſ	3.0
251+00	50'RT	ACHM SURFACE ACHM BINDER	AGG BASE CRS CL7				
		1	J				
259+00	6'LT	ACHM SURFACE ACHM BINDER	AGG BASE CRS CL7				
		10.5W 2.0	3.0				
259+00	16'LT	ACHM SURFACE ACHM BINDER	AGG BASE CRS CL7				
		9.0W	5.0				
259+00	56'LT	ACHM SURFACE CHIP SEAL	ACHM SURFACE	ACHM BINDER	ACHM SURFACE	AGG BASE CRS CL7	-7
]	I	1	J	1	
comments:		Z=AUGER REFUSAL, W=MULTIPLE LAYERS, X=STRIPPED	3, X=STRIPPED				
	ΓO	LOCATIONS MEASURED FROM CENTERLINE OF CONSTRUCTION	IE OF CONSTRUCTION		Monday, Dec	Monday, December 21, 2009	
							Page 3 of 5
							1 ngc h n

	AGG BASE CRS CL7 3.0	AGG BASE CRS CL7 3.0	AGG BASE CRS CL7		AGG BASE CRS CL7	3.0														Monday, December 21, 2009
OUNDINGS	ACHM SURFACE	 ACHM SURFACE 3.0	ACHM SURFACE		ACHM SURFACE	l														Monday, De
PAVEMENT SOUNDINGS	ACHM BINDER 2.0	ACHM BINDER	CHIP SEAL	— CHIP SEAL 5	CHIP SEAL	1														
	ACHM SURFACE 1.5	ACHM SURFACE 1.0	ACHM SURFACE		ACHM SURFACE	ľ												ASE CRS	ASE CRS	Z=AUGER REFUSAL, W=MULTIPLE LAYERS, X=STRIPPED LOCATIONS MEASURED FROM CENTERLINE OF CONSTRUCTION
	ACE CHIP SEAL 1.0	ACHM SURFACE CHIP SEAL 4.0	ACHM SURFACE CHIP SEAL		ACHM SURFACE CHIP SEAL	1												ASPH TREAT BASE CRS		AL, W=MULTIPLE L
	ACHM SURFACE 8.5W			ACHM SURFA 8.0W										Т				ACHM SURF	ACHM SURF 9.0W	Z=AUGER REFUS LOCATIONS MEA
# TOC	0 6'RT	0 16'RT	0 50'RT	0 6'RT	0 15'RT) 58'RT	C CL	с С	0 CL	с С	с С	C	C C) 100'LT	CL	cr c	CL) 14'LT) 23'LT	
STA.#	267+00	267+00	267+00	275+00	275+00	275+00	283+00	291+00	296+00	307+00	318+50	323+00	331+00	339+50	347+00	355+25	363+00	371+00	371+00	comments:

PAVEMENT SOUNDINGS		GG BASE CRS CL7	- GG BASE CRS CL7 0	GG BASE CRS CL7									CHM SURF 5	CHM SURF		CHM SURF	ACHM BINDER CHIP SEAL ASPH TREAT BASE C			ACHM BINDER CHIP SEAL ASPH TREAT BASE C	Ņ					
	ASPH TREAT BASE CRS 4.0X	ASPH TREAT BASE CR&GG BASE CRS		ASPH TREAT BASE CRAGG BASE CRS		ASPH TREAT BASE CRS	— ASPH TREAT BASE CRS 2.0	ACHM BINDER		ACHM BINDER 3.0	ACHM BINDER	1	ASPH TREAT BASE CR&CHM SURF 2.5 2.5	ASPH TREAT BASE CRACHM SURF	ļ	ASPH TREAT BASE CR&CHM SURF 3.5	CHIP SEAL ACHM BIND			CHIP SEAL ACHM BIND		AGG BASE CRS CL7	5.0	AGG BASE CRS CL7	1	
	ACHM SURF 9.0W	ACHM SURF	— Achm Surf 6.5W	ACHM SURF		ACHM SURF	 Achm Surf 8.0W	ACHM SURF	I	ACHM SURF 8.0W	ACHM SURF	1	ACHM SURF 8.0W	ACHM SURF	ļ	ACHM SURF 7.0W	ACHM SURF	ACHM SLIDE	7.75W	ACHM SURF	8.0W	ACHM SURF	6.25W	ACHM SURF	I	
LOC.	11'RT	50'RT	12'LT	29'LT	12'RT	42'RT	11'LT	45'LT		10'RT	50'RT		10'LT	44'LT		12'LT	22'LT	14'FT	2	10.LT		20'LT		32'LT		
STA.# LOC.	379+50	379+50	387+00	387+00	395+40	395+40	403+00	403+00		411+00	411+00		419+00	419+00		427+00	427+00	435+00		443+00		443+00		443+00		

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Monday, December 21, 2009

comments: Z=AUGER REFUSAL, W=MULTIPLE LAYERS, X=STRIPPED LOCATIONS MEASURED FROM CENTERLINE OF CONSTRUCTION

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

Job No. Date Sampled: Date Tested: Name of Project: County:	090065 11/18/2009 November 18, 2009 AVOCA - NORTH GARFIELD (S) Code: 4 Name: BENTON	Material Code Station No.: Location:	SSRVPS 155+00 56'RT
Sampled By: Lab No.: Sample ID: LATITUDE:	20093245 RV938	Depth: AASHTO Class: Material Type (1 or 2 LONGITUDE:	0-5 A-4(5) 2
1. Testing Inform	nation:		
	Preconditioning - Permanent Strain > 5% (Y Testing - Permanent Strain > 5% (Y=Yes or Number of Load Sequences Completed (0-1	N=No)	N N 15
2. Specimen Info	ormation:		
	Specimen Diameter (in):		
	Тор		3.98
	Middle		3.98
	Bottom		3.99
	Average		3.98
	Membrane Thickness (in):		0.00
	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):		12.46
	Initial Volume, AoLo (cu. in):		99.94
3. Soil Specimer	Weight:		
• 20109 10 12 3	Weight of Wet Soil Used (g):		3179.70
4. Soil Properties	5:		
	Optimum Moisture Content (%):		14.8
	Maximum Dry Density (pcf):		110.6
	95% of MDD (pcf):		105.1
	In-Situ Moisture Content (%):		N/A
5. Specimen Pro	perties:		
	Wet Weight (g):		3179.70
	Compaction Moisture content (%):		15.1
	Compaction Wet Density (pcf):		121.22
	Compaction Dry Density (pcf):		105.32
	Moisture Content After Mr Test (%):		15.3
6. Quick Shear T	est (Y=Yes, N=No, N/A=Not Applicable):		#VALUE!
7. Resilient Modu	ılus, Mr:	10514(S	c)^-0.22950(S3)^0.30297
8. Comments			
9. Tested By:	DEB	Date: November 18, 2009	
		10000mber 10, 2003	

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

SSRVPS 155+00	56'RT	0-5 A-4(5) 2): 2
Material Code Station No.:	Location:	Depth: 0-5 AASHTO Class: A- Material Type (1 or 2): 2 LONGITUDE:
		BENTON
	GARFIELD (S)	Name:
090065 11/18/2009	November 18, 2009 AVOCA - NORTH GARFIELD (S)	Code: 4 20093245 RV938
Job No. Date Sampled:	Date Tested: Name of Project:	County: Sampled By: Lab No.: Sample ID: LATITUDE:

Chamber		Actual	Actual	Actual	Actual	Actual	Actual	Average	Resilient	Resilient
Confining	S	Applied	Applied	Applied	Applied	Applied	Applied	Recov Def.	Strain	Modulus
Pressure		Max. Axial	Cyclic Load	Contact	Max.	Cyclic	Contact	LVDT 1		
	Stress	Load		Load	Axial	Stress	Stress	and 2		
		1			Stress					
s. S	S _{cyclic}	Pmax	P _{cyclic}	Pcontact	S _{max}	S _{cyclic}	Sconlact	Hava	Ϋ́	Å
psi	psi	lbs	lbs	lbs	psi	psi	psi	'n	in/in	psi
6.0	2.0	25.7	22.8	2.9	2.1	1.8	0.2	0.00093	0.00012	15,731
6.0	4.0	48.1	45.2	2.9	3.9	3.6	0.2	0.00202	0.00025	14,364
6.0	6.0	71.3	67.4	3.9	5.7	5.4	0.3	0.00332	0.00041	13,082
6.0	8.0	95.3	88.9	6.4	7.6	7.1	0.5	0.00501	0.00062	11,424
6.0	10.0	118.8	109.8	9.0	9.5	8.8	0.7	0.00684	0.00085	10,330
4.0	2.0	25.6	22.7	2.9	2.1	1.8	0.2	0.00110	0.00014	13,238
4.0	4.0	47.8	44.9	2.9	3.8	3.6	0.2	0.00239	0.00030	12,078
4.0	6.0	69.6	66.6	3.0	5.6	5.3	0.2	0.00394	0.00049	10,881
4.0	8.0	93.5	87.9	5.6	7.5	7.1	0.4	0.00563	0.00070	10,046
4.0	10.0	117.2	109.2	8.0	9.4	8.8	0.6	0.00746	0.00093	9,411
2.0	2.0	25.4	22.5	2.9	2.0	1.8	0.2	0.00131	0.00016	11,019
2.0	4.0	47.2	44.3	2.9	3.8	3.6	0.2	0.00286	0.00036	9,965
2.0	6.0	68.3	65.3	3.0	5.5	5.2	0.2	0.00468	0.00058	8,985
2.0	8.0	90.8	86.1	4.7	7.3	6.9	0.4	0.00659	0.00082	8,410
2.0	10.0	114.2	106.9	7.2	9.2	8.6	0.6	0.00860	0.00107	8.002

November 18, 2009

DATE DATE

DEB

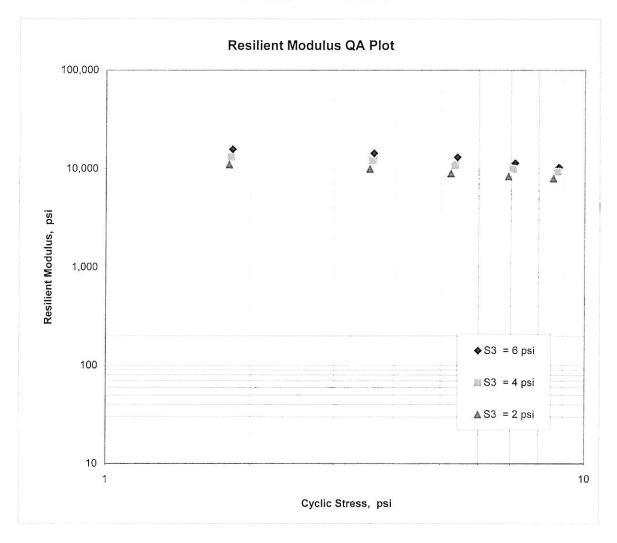
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AASHTO T 307-99 - RESILIENT MODULUS OF SUBGRADE SOILS RECOMPACTED / THINWALL TUBE SAMPLES

Job No.	090065			Material Code SSRVPS
Date Sampled:	11/18/2009			Station No.: 155+00
Date Tested:	November 18, 2009			Location: 56'RT
Name of Project:	AVOCA - NORTH (GARFIEL	LD (S)	
County:	Code: 4	Name:	BENTON	
Sampled By:				Depth: 0-5
Lab No.:	20093245			AASHTO Class: A-4(5)
Sample ID:	RV938			Material Type (1 or 2): 2
LATITUDE:				LONGITUDE:

 $M_{R} = K1 (S_{C})^{K2} (S_{3})^{K5}$

K1 =	10,514	
K2 =	-0.22950	
K5 =	0.30297	
$R^2 =$	0.97	



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

Job No. Date Sampled: Date Tested: Name of Project: County: Sampled By: Lab No.: Sample ID:	090065 11/18/2009 November 18, 2009 AVOCA - NORTH GARFIELD (S) Code: 4 Name: BENTON 20093246 RV939	Material Code Station No.: Location: Depth: AASHTO Class: Material Type (1 or 2	SSRVPS 235+00 50'RT 0-5 A-6(13) 2): 2
LATITUDE:		LONGITUDE:	• CON 100"
1. Testing Inform	nation:		
	Preconditioning - Permanent Strain > 5% (Y		N
	Testing - Permanent Strain > 5% (Y=Yes or N	the commence	N
	Number of Load Sequences Completed (0-15	5)	15
2. Specimen Inf	ormation:		
	Specimen Diameter (in):		
	Тор		3.98
	Middle		3.99
	Bottom		3.98
	Average		3.98
	Membrane Thickness (in):		0.00
	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):		12.46
	Initial Volume, AoLo (cu. in):		99.94
3. Soil Specimer	weight:		
5. Oon opecimer	Weight of Wet Soil Used (g):		3181.90
			0101.90
4. Soil Propertie	s:		
	Optimum Moisture Content (%):		16.5
	Maximum Dry Density (pcf):		105.9
	95% of MDD (pcf):		100.6
	In-Situ Moisture Content (%):		N/A
5. Specimen Pro	perties:		
	Wet Weight (g):		3181.90
	Compaction Moisture content (%):		16.2
	Compaction Wet Density (pcf):		121.31
	Compaction Dry Density (pcf):		104.39
	Moisture Content After Mr Test (%):		16.8
6 Quick Shear T	est (Y=Yes, N=No, N/A=Not Applicable):		#VALUE!
7. Resilient Mod	ulus, Mr:	8049(S	c)^-0.14595(S3)^0.34376
8. Comments			
9. Tested By:	DEB D	ate: November 18, 2009	
o. resteu by.		ate. November 16, 2009	

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

SSRVPS	50'RT		0-5 A-6(13)	2): 2
Material Code Station No -	Location:		Depth: AASHTO Class:	Material Type (1 or 2): 2 LONGITUDE:
		BENTON		
	GARFIELD (S)	Name:		
090065 11/18/2009	November 18, 2009 AVOCA - NORTH GARFIELD (S)	Code: 4	20093246	RV939
Job No. Date Sampled:	Date Tested: Name of Project:	County:	Sampled By: Lab No.:	Sample ID: LATITUDE:

Resilient	Modulus				Mr	psi	13,578	12,831	11,969	11,136	10,746	11,712	10,685	9,941	9,557	9,284	9,396	8,513	7,971	7,751	7,680
Resilient	Strain				చ్	in/in	0.00014	0.00028	0.00045	0.00064	0.00082	0.00016	0.00034	0.00053	0.00074	0.00095	0.00019	0.00041	0.00065	0.00088	0.00112
Average	Recov Def.	LVDT 1	and 2		Havg	E	0.00109	0.00228	0.00363	0.00515	0.00662	0.00125	0.00269	0.00429	0.00592	0.00759	0.00154	0.00331	0.00522	0.00709	0.00896
Actual	Applied	Contact	Stress		Scontact	psi	0.2	0.2	0.3	0.5	0.7	0.2	0.2	0.2	0.4	0.6	0.2	0.2	0.2	0.4	0.6
Actual	Applied	Cyclic	Stress		S _{cyclic}	psi	1.8	3.6	5.4	7.2	8.9	1.8	3.6	5.3	7.1	8.8	1.8	3.5	5.2	6.9	8.6
Actual	Applied	Max.	Axial	Stress	S _{max}	psi	2.1	3.9	5.7	7.7	9.6	2.0	3.8	5.5	7.5	9.4	2.0	3.7	5.4	7.2	9.1
Actual	Applied	Contact	Load		Pcontact	lbs	2.7	2.8	3.8	6.3	8.8	2.7	2.8	2.9	5.4	7.9	2.7	2.8	2.8	4.6	7.1
Actual	Applied	Cyclic Load			Pcyclic	lbs	22.9	45.4	67.5	89.1	110.5	22.7	44.7	66.2	87.9	109.5	22.5	43.8	64.6	85.4	106.9
Actual	Applied	Max. Axial	Load		Pmax	lbs	25.7	48.2	71.3	95.5	119.3	25.4	47.5	69.2	93.3	117.4	25.2	46.5	67.4	90.0	114.0
Nominal	Maximum	Axial	Stress		Scyclic	psi	2.0	4.0	6.0	8.0	10.0	2.0	4.0	6.0	8.0	10.0	2.0	4.0	6.0	8.0	10.0
Chamber	Confining	Pressure			လိ	psi	6.0	6.0	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	Sequence 9	Sequence 10	Sequence 11	Sequence 12	Sequence 13	Sequence 14	Sequence 15

DATE November 18, 2009 DATE

TESTED BY REVIEWED BY

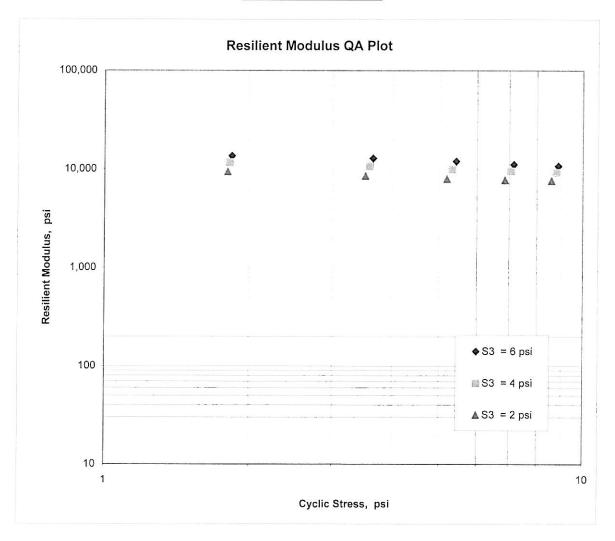
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AASHTO T 307-99 - RESILIENT MODULUS OF SUBGRADE SOILS RECOMPACTED / THINWALL TUBE SAMPLES

Job No.	090065			Material Code SSRVPS
Date Sampled:	11/18/2009			Station No.: 235+00
Date Tested:	November 18, 2009			Location: 50'RT
Name of Project:	AVOCA - NORTH G	ARFIEL	.D (S)	
County:	Code: 4	Name:	BENTON	
Sampled By:				Depth: 0-5
Lab No.:	20093246			AASHTO Class: A-6(13)
Sample ID:	RV939			Material Type (1 or 2): 2
LATITUDE:				LONGITUDE:

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

K1 =	8,049
K2 =	-0.14595
K5 =	0.34376
$R^2 =$	0.99



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

County: Sampled By: Lab No.: Sample ID:	090065 11/20/2009 November 20, 2009 AVOCA - NOTH GARFIELD (S) Code: 4 Name: BENTON 20093247 RV940	Material Code Station No.: Location: Depth: AASHTO Class: Material Type (1 or 2	SSRVPS 395+40 42'RT 0-5 A-6(11)): 2
LATITUDE:		LONGITUDE:	
1. Testing Inform	nation:		
	Preconditioning - Permanent Strain > 5% (Y= Testing - Permanent Strain > 5% (Y=Yes or N Number of Load Sequences Completed (0-15	l=No)	N N 15
2. Specimen Info	ormation:		
	Specimen Diameter (in):		
	Тор		3.94
	Middle		3.95
	Bottom		3.96
	Average		3.95
	Membrane Thickness (in):		0.00
	Height of Specimen, Cap and Base (in):		8.04
	Height of Cap and Base (in): Initial Length, Lo (in):		0.00
	Initial Area, Ao (sq. in):		8.04
	Initial Volume, AoLo (cu. in):		12.25
			98.52
3. Soil Specimer	ı Weight:		
	Weight of Wet Soil Used (g):		2986.60
4. Soil Properties	S:		
	Optimum Moisture Content (%):		19.7
	Maximum Dry Density (pcf):		100.9
	95% of MDD (pcf):		95.9
	In-Situ Moisture Content (%):		N/A
5. Specimen Pro	perties:		
•	Wet Weight (g):		2986.60
	Compaction Moisture content (%):		19.4
	Compaction Wet Density (pcf):		115.50
	Compaction Dry Density (pcf):		96.74
	Moisture Content After Mr Test (%):		19.7
6. Quick Shear To	est (Y=Yes, N=No, N/A=Not Applicable):		#VALUE!
7. Resilient Modu	ılus, Mr:	9389(Se	c)^-0.21387(S3)^0.29515
8. Comments			
9. Tested By:	DEB Da	ate: <u>November 20, 2009</u>	

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

SSRVPS 395+40 42'RT 0-5 A-6(11) 2): 2
Material Code S Station No.: 3 Location: 4 Depth: 6 AASHTO Class: A Material Type (1 or 2): 2 LONGITUDE:
BENTON
ARFIELD (S) Name:
090065 11/20/2009 November 20, 2009 AVOCA - NOTH GARFIELD (S) Code: 4 Name: 20093247 RV940
Job No. Date Sampled: Date Tested: Name of Project: County: Sampled By: Lab No.: Sample ID: LATITUDE:

LVDT 1 and 2	s _r in/in 0.00013	er in/in 7 0.00013 7 0.00028	ε _r in/in 0.00013 0.00028 0.00045	с _r in/in 0.00013 0.00028 0.00045 0.00067	 ε_r in/in 0.00013 0.00028 0.00028 0.00045 0.00067 0.00092 	 Er in/in 0.00013 0.00028 0.00045 0.00067 0.00067 0.00092 0.00015 	 Er in/in 0.00013 0.00028 0.00045 0.00045 0.00067 0.00067 0.00033 	 Er in/in 0.00013 0.00028 0.00067 0.00067 0.00067 0.00033 0.00053 	 Er in/in 0.00013 0.00028 0.00045 0.00045 0.00067 0.00092 0.00015 0.00033 0.00053 0.00053 	 ^Er in/in 0.00013 0.00028 0.00045 0.00067 0.00067 0.00052 0.00015 0.00033 0.00033 0.00053 0.00076 0.00100 	 ^{Er} in/in 0.00013 0.00028 0.00045 0.00067 0.00067 0.00033 0.00076 0.00076 0.00078 0.00018 	 ^{Er} in/in 0.00013 0.00045 0.00045 0.00045 0.00045 0.00053 0.00053 0.00053 0.00053 0.00076 0.00076 0.00076 0.00033 	 ^F in/in 0.00013 0.00045 0.00067 0.00067 0.00067 0.00015 0.00015 0.00033 0.00033 0.00033 0.00033 0.00018 0.00018 0.00039 0.00039 0.00039 	 ⁵ in/in 0.00013 0.00013 0.00045 0.00045 0.00067 0.00015 0.00015 0.00033 0.00033 0.00053 0.00076 0.00076 0.00018 0.00062 0.00062 0.00062 0.00062
	ni 70100 0	in 0.00107 0.00227	in 0.00107 0.00227 0.00359	in 0.00107 0.00227 0.00359 0.00538	in 0.00107 0.00227 0.00359 0.00538 0.00538	in 0.00107 0.00227 0.00359 0.00538 0.00738 0.00738	in 0.00107 0.00227 0.00359 0.00538 0.00738 0.00728 0.00123	in 0.00107 0.00227 0.00538 0.00538 0.00738 0.00738 0.00123 0.00268	in 0.00107 0.00227 0.00538 0.00738 0.00738 0.00738 0.007268 0.00123 0.00268	in 0.00107 0.00227 0.00359 0.00738 0.00738 0.00738 0.00738 0.00738 0.00738 0.00738 0.00268 0.00268 0.00268 0.00608 0.00608	in 0.00107 0.00227 0.00538 0.00738 0.00738 0.00738 0.00738 0.00723 0.00723 0.00268 0.00268 0.00268 0.00268 0.00608	in 0.00107 0.00227 0.00538 0.00738 0.00738 0.00738 0.00738 0.00268 0.00268 0.00268 0.00268 0.00268 0.00268 0.00268 0.00268	in 0.00107 0.00227 0.00359 0.00738 0.00738 0.00738 0.00738 0.00738 0.00738 0.00738 0.00738 0.00268 0.00268 0.00268 0.00268 0.00268 0.00268 0.00268 0.00268 0.00268 0.00268 0.00273 0.00268 0.00273 0.00273 0.00273 0.00733 0.000608 0.00033 0.00030 0.00030 0.00030 0.00030 0.000300000000	in 0.00107 0.00227 0.00538 0.00738 0.00738 0.00723 0.00508 0.00268 0.00268 0.00268 0.00268 0.00268 0.00268 0.00268 0.00203 0.00313 0.00501 0.00501
Scyclic Scontact psi psi	00	0.2 0.2	0.2 0.3 0.3	0.2 0.3 0.2 0.5 0.5	0.2 0.3 0.3 0.5	0.2 0.3 0.5 0.7 0.7	0.2 0.3 0.5 0.7 0.2 0.2	0.2 0.3 0.7 0.2 0.2 0.2	0.2 0.3 0.7 0.2 0.2 0.2 0.2 0.2	0.2 0.3 0.5 0.5 0.2 0.2 0.2 0.6	0.2 0.3 0.5 0.7 0.2 0.2 0.2 0.6 0.6	0.2 0.3 0.3 0.5 0.2 0.2 0.4 0.2 0.2 0.2 0.2	0.2 0.3 0.5 0.5 0.2 0.4 0.2 0.6 0.2 0.2 0.2 0.2	0.2 0.3 0.3 0.2 0.2 0.2 0.4 0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.2
α,		3.6	3.6 5.4	3.6 5.4 7.0	3.6 5.4 7.0 8.6	3.6 5.4 7.0 8.6 1.8	3.6 5.4 7.0 8.6 3.6 3.6	3.6 5.4 7.0 8.6 1.8 3.6 5.3	3.6 5.4 7.0 8.6 3.6 5.3 7.0	3.6 5.4 7.0 1.8 3.6 5.3 7.0 8.6	3.6 5.4 7.0 8.6 3.6 5.3 7.0 8.6 1.8	3.6 5.4 7.0 7.0 3.6 7.0 7.0 7.0 7.0 3.5	3.6 5.4 7.0 8.6 1.8 3.6 7.0 7.0 8.6 8.6 3.5 3.5 5.1	3.6 5.4 7.0 7.0 8.6 7.3 7.0 7.0 7.0 7.0 7.0 5.3 5.1 6.8
21	3.9		5.7	5.7 7.5	5.7 7.5 9.3	5.7 7.5 9.3 2.0	5.7 7.5 9.3 3.8 3.8	5.7 7.5 9.3 2.0 3.8 5.5	5.7 7.5 9.3 2.0 3.8 3.8 5.5 7.4	5.7 7.5 9.3 3.8 7.4 7.4	5.7 7.5 9.3 2.0 3.8 5.5 7.4 7.4 2.0	5.7 7.5 9.3 3.8 3.8 7.4 7.4 7.4 2.0 3.7	5.7 7.5 9.3 2.0 3.8 5.5 7.4 7.4 9.2 9.2 3.7 5.4	5.7 7.5 9.3 3.8 5.5 5.5 9.2 2.0 3.7 7.1 7.1
2.6	2.7		3.6	3.6 6.1	3.6 6.1 8.5	3.6 6.1 8.5 2.7	3.6 6.1 8.5 2.7 2.7	3.6 6.1 8.5 2.7 2.8	3.6 6.1 8.5 2.7 2.8 2.8 5.2	3.6 6.1 8.5 7.8 7.8 7.8	3.6 6.1 8.5 2.7 2.8 7.8 7.8 7.8 2.7	3.6 6.1 8.5 2.7 2.8 7.8 7.8 2.7 2.8 2.8	3.6 6.1 8.5 5.2 2.8 7.8 2.8 2.8 2.9 2.9	3.6 6.1 8.5 2.7 2.7 2.8 7.8 2.8 2.8 2.9 2.9
lbs 22.5	44.5		66.0	66.0 86.1	66.0 86.1 106.0	66.0 86.1 106.0 22.3	66.0 86.1 106.0 22.3 43.7	66.0 86.1 106.0 22.3 43.7 64.7	66.0 86.1 106.0 22.3 43.7 64.7 85.3	66.0 86.1 106.0 22.3 43.7 64.7 85.3 104.9	66.0 86.1 106.0 22.3 43.7 64.7 85.3 104.9 104.9 22.0	66.0 86.1 106.0 22.3 43.7 64.7 64.7 64.7 64.7 104.9 104.9 104.9 22.0	66.0 86.1 106.0 22.3 43.7 64.7 64.7 64.9 104.9 104.9 722.0 42.8 63.0	66.0 86.1 106.0 22.3 43.7 64.7 64.7 85.3 104.9 104.9 22.0 22.0 85.3 63.0 83.1
P _{max} Ibs 25.2	C 1 Y	41.2	47.2 69.6	47.2 69.6 92.2	47.2 69.6 92.2 114.5	472 69.6 92.2 114.5 25.0	47.2 69.6 92.2 114.5 25.0 46.4	472 69.6 92.2 114.5 25.0 46.4 67.5	47.2 69.6 92.2 114.5 25.0 46.4 67.5 90.5	472 69.6 92.2 114.5 25.0 46.4 67.5 90.5 112.7	47.2 69.6 92.2 114.5 25.0 46.4 67.5 90.5 112.7 24.7	47.2 69.6 92.2 114.5 25.0 46.4 67.5 90.5 112.7 24.7 24.7 24.7	47.2 69.6 92.2 114.5 25.0 46.4 67.5 90.5 112.7 24.7 24.7 24.7 65.9 65.9	47.4 69.6 92.2 114.5 25.0 46.4 67.5 90.5 112.7 24.7 24.7 24.7 25.9 65.9 87.5
Stress S _{cyclic} psi 2.0		4.0	4.0 6.0	4.0 6.0 8.0	4.0 6.0 8.0 10.0	4.0 6.0 8.0 10.0 2.0	4.0 6.0 8.0 10.0 2.0 4.0	4.0 6.0 10.0 4.0 6.0	4.0 6.0 8.0 10.0 4.0 8.0 8.0	4.0 6.0 8.0 2.0 2.0 6.0 6.0 10.0	4.0 6.0 8.0 10.0 6.0 8.0 8.0 2.0 2.0	4.0 6.0 8.0 10.0 6.0 6.0 7.0 10.0 4.0 7.0	4.0 6.0 8.0 8.0 6.0 6.0 7.0 6.0 6.0 6.0 6.0	4.0 6.0 8.0 70.0 6.0 8.0 8.0 70.0 10.0 8.0 8.0 8.0 8.0 8.0
Pressure S ₃ psi 6.0		6.0	6.0	6.0	6.0 6.0 6.0	6.0 6.0 6.0 4.0	6.0 6.0 6.0 4.0	6.0 6.0 6.0 4.0 4.0	6.0 6.0 6.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7	6.0 6.0 6.0 6.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7	6.0 6.0 6.0 6.0 7.0 7.0 7.0 2.0 2.0	6.0 6.0 6.0 6.0 7.0 7.0 7.0 2.0 2.0	6.0 6.0 6.0 6.0 6.0 4.0 4.0 2.0 2.0 2.0	6.0 6.0 6.0 6.0 7.0 7.0 7.0 2.0 2.0 2.0 2.0
PARAMETER DESIGNATION UNIT Sequence 1		equence 2	equence 2 equence 3	Sequence 2 Sequence 3 Sequence 4	Sequence 2 Sequence 3 Sequence 4 Sequence 5	Sequence 2 Sequence 3 Sequence 4 Sequence 5 Sequence 6	Sequence 2 Sequence 3 Sequence 4 Sequence 6 Sequence 6 Sequence 7	Sequence 2 Sequence 3 Sequence 4 Sequence 5 Sequence 6 Sequence 8 Sequence 8	Sequence 2 Sequence 3 Sequence 4 Sequence 5 Sequence 6 Sequence 7 Sequence 8 Sequence 9	Sequence 2 Sequence 3 Sequence 4 Sequence 5 Sequence 6 Sequence 8 Sequence 9 Sequence 9 Sequence 10	Sequence 2 Sequence 3 Sequence 4 Sequence 5 Sequence 6 Sequence 8 Sequence 9 Sequence 10 Sequence 10 Sequence 10	Sequence 2 Sequence 3 Sequence 4 Sequence 5 Sequence 7 Sequence 8 Sequence 10 Sequence 11 Sequence 12 Sequence 12	Sequence 2 Sequence 3 Sequence 4 Sequence 5 Sequence 6 Sequence 7 Sequence 8 Sequence 10 equence 11 equence 12 equence 13	Sequence 2 Sequence 3 Sequence 4 Sequence 5 Sequence 6 Sequence 7 Sequence 1 Sequence 10 Sequence 12 Sequence 12 Sequence 12 Sequence 13 Sequence 13

DATE November 20, 2009 DATE

TESTED BY REVIEWED BY

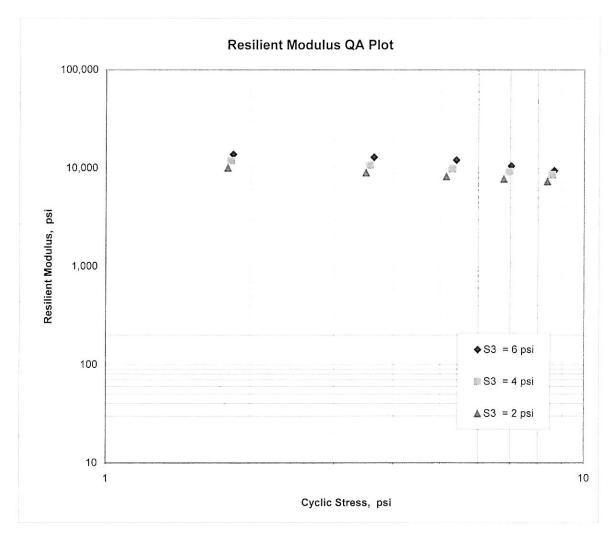
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AASHTO T 307-99 - RESILIENT MODULUS OF SUBGRADE SOILS RECOMPACTED / THINWALL TUBE SAMPLES

Job No.	090065			Material Code SSRVPS
Date Sampled:	11/20/2009			Station No.: 395+40
Date Tested:	November 20, 2009			Location: 42'RT
Name of Project:	AVOCA - NOTH GA	ARFIELD	D (S)	
County:	Code: 4	Name:	BENTON	
Sampled By:				Depth: 0-5
Lab No.:	20093247			AASHTO Class: A-6(11)
Sample ID:	RV940			Material Type (1 or 2): 2
LATITUDE:				LONGITUDE:

 $M_R = K1 (S_C)^{K_2} (S_3)^{K_5}$

K1 =	9,389	
K2 =	-0.21387	
	0.29515	
$R^2 =$	0.96	



ARKANSAS STATE HIG	HWAY AND TRANSPORTATIO MATERIALS I		ITLE ROCK, ARKANSAS		
444 QC	MICHAEL BENSON, MAT		۲		
	DIL SURVEY / PAVEMENT	SOUNDING TEST REPC	JKT. ***		
DATE - 12/04/09 SEQUENCE NO 1 JOB NUMBER - 090065 MATERIAL CODE - SSRVPS FEDERAL AID NO TO BE ASSIGNED SPEC. YEAR - 2003 PURPOSE - SOIL SURVEY SAMPLE SUPPLIER ID 1 SPEC. REMARKS - NO SPECIFICATION CHECK COUNTY/STATE - 04 SUPPLIER NAME - STATE DISTRICT NO 09 NAME OF PROJECT - AVOCA - NORTH GARFIELD (S) PROJECT ENGINEER - NOT APPLICABLE PIT/QUARRY - ARKANSAS					
LOCATION - BENTON CO	DUNTY		SAMPLED - 11/02/09		
SAMPLED BY - D.KRAFT SAMPLE FROM - TESTHOLE			RECEIVED - 11/09/09 TESTED - 11/24/09		
MATERIAL DESC SOIL SU			IESTED - 11/24/09		
LAB NUMBER		- 20093154	- 20093155		
SAMPLE ID		- S847	- \$848		
TEST STATUS	- INFORMATION ONLY	- INFORMATION ONL	Y - INFORMATION ONLY		
STATION	- 115+00	- 115+00	- 115+00		
LOCATION	- 10'RT	- 27'RT	_ 52'RT		
DEPTH IN FEET		0-4.0Z	0-5		
MAT'L TYPE	- RED -	_ RED -	_ RED		
LATITUDE DEG-MIN-SEC LONGITUDE DEG-MIN-SEC					
		94 04 16.10	94 04 15.80		
% PASSING 2 IN.			-		
1 1/2 IN. 3/4 IN.		-	-		
3/4 IN. 3/8 IN.		-	-		
NO. 4		- 100	- 100		
NO. 10	- 92	- 96	_ 88		
NO. 40	- 77	_ 88	_ 76		
NO. 80	- 70	- 84	- 73		
NO. 200	- 64	80	69		
LIQUID LIMIT	- 33	- 29	- 51		
PLASTICITY INDEX	- 18	- 15	- 32		
AASHTO SOIL	- A-6(9)	- A-6(10)	- A-7-6(21)		
UNIFIED SOIL % MOISTURE CONTENT	- 20.3	- 21.4	- 16.1		
ACHM SURFACE (IN)		- 4.0W	10.1		
ACHM SORFACE (IN) ACHM BINDER (IN)		- 4.0W			
ACHM SURFACE (IN)		-	-		
AGG BASE CRS CL7 (IN)	-	- 8.0			
		-	_		
	-		— 7		
	-	20 5			
	-	-	-		

- LOCATIONS MEASURED FROM CENTERLINE OF CONSTRUCTION

ARKANSAS STATE HIGHWAY AND TRANSPORTATION MATERIALS I	
MICHAEL BENSON, MA *** SOIL SURVEY / PAVEMENT	TERIALS ENGINEER
DATE - 12/04/09 JOB NUMBER - 090065 FEDERAL AID NO TO BE ASSIGNED PURPOSE - SOIL SURVEY SAMPLE SPEC. REMARKS - NO SPECIFICATION CHECK SUPPLIER NAME - STATE NAME OF PROJECT - AVOCA - NORTH GARFIELD (S) PROJECT ENGINEER - NOT APPLICABLE	SEQUENCE NO 2 MATERIAL CODE - SSRVPS SPEC. YEAR - 2003 SUPPLIER ID 1 COUNTY/STATE - 04 DISTRICT NO 09
PIT/QUARRY - ARKANSAS LOCATION - BENTON COUNTY SAMPLED BY - D.KRAFT SAMPLE FROM - TESTHOLE MATERIAL DESC SOIL SURVEY - R VALUE- PAVE	DATE SAMPLED - 11/02/09 DATE RECEIVED - 11/09/09 DATE TESTED - 11/24/09 EMENT SOUNDINGS
LAB NUMBER - 20093156 SAMPLE ID - S849 TEST STATUS - INFORMATION ONLY STATION - 123+00 LOCATION - 7'RT DEPTH IN FEET - 0-5 MAT'L COLOR - RED MAT'L COLOR - RED MAT'L TYPE - LATITUDE DEG-MIN-SEC - 36 24 35.00 LONGITUDE DEG-MIN-SEC - 94 04 14.60 % PASSING 2 IN 1 1/2 IN 3/4 IN 3/8 IN	- \$850 - \$851 - INFORMATION ONLY - INFORMATION ONLY - 123+00 - 123+00 - 28'RT - 56'RT 0-5 - 0-5 RED - RED
NO. 4 - 100 NO. 10 - 91 NO. 40 - 78 NO. 80 - 73 NO. 200 - 67 LIQUID LIMIT - 52 PLASTICITY INDEX - 36 AASHTO SOIL - A-7-6(22)	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
UNIFIED SOIL - % MOISTURE CONTENT - 26.8 ACHM SURFACE (IN) - 3.25 ACHM BINDER (IN) - 3.0 ACHM SURFACE (IN) - 6.0	31.7 19.6 4.0 - 9.0 -
AGG BASE CRS CL7 (IN) 6.0	

REMARKS - Z=AUGER REFUSAL, W=MULTIPLE LAYERS, X=STRIPPED - LOCATIONS MEASURED FROM CENTERLINE OF CONSTRUCTION

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ARKANSAS STATE	E HIGHWA	Y AND TRANSPORTAT: MATERIALS			- LITTLE	ROCK, ARKANSAS
+		MICHAEL BENSON, MA				6 . b. d.
		SURVEY / PAVEMENT	S	JUNDING TES.	I. KEPORT. 1	* * *
DATE-12/04/09SEQUENCE NO3JOB NUMBER-090065MATERIAL CODE-SSRVPSFEDERAL AID NO.TO BE ASSIGNEDSPEC. YEAR-2003PURPOSE-SOIL SURVEY SAMPLESUPPLIER ID1SPEC. REMARKS-NO SPECIFICATION CHECKCOUNTY/STATE-04SUPPLIER NAME-STATEDISTRICT NO09NAME OF PROJECT-AVOCA - NORTH GARFIELD (S)PROJECT ENGINEER-NOT APPLICABLE						
PIT/QUARRY - ARKA LOCATION - BENT		ГҮ			DATE SAM	IPLED - 11/02/09
SAMPLED BY - D.KRA					DATE REC	EIVED - 11/09/09
SAMPLE FROM - TEST MATERIAL DESC SO		זגרו ייווזזגזא ס עים	71211/01	ENT COINDIN		STED - 11/24/09
LAB NUMBER SAMPLE ID		20093159 S852				20093161 S854
TEST STATUS						INFORMATION ONLY
STATION	-	131+00		131+00		131+00
LOCATION	-	6'RT	-	16'RT	-	34'RT
DEPTH IN FEET		0-5	-	0-5	-	0-3.5Z
MAT'L TYPE	-		-	RED	-	RED
LATITUDE DEG-MIN- LONGITUDE DEG-MIN-						
		94 04 I3.00		94 04	12.80	94 04 12.70
% PASSING 2			-		~ —	
Martin Contraction (1997)	2 IN 4 IN		_		-	
	B IN		-0		-	
1000 - 1000 1000 - 1000	4 -	100		100		100
NO.	10 -	96	-	92	_	91
NO.	40 -	87	-	79	-	81
	80 -	82	-	73	-	77
NO.	200 -	76		67		72
LIQUID LIMIT	<u>10</u> 8	50	-	36	-	50
PLASTICITY INDEX	-	32	-	23	-	33
AASHTO SOIL	 .0	A-7-6(24)	-	A-6(13)	-	A-7-6(22)
UNIFIED SOIL	-	10.0	_	22.2	-	
% MOISTURE CONTENT		40.2		22.2		19.7
ACHM SURFACE	(IN) -	6.0W	-	3.0X		
ACHM BINDER AGG BASE CRS CL7	(IN) -	2.5	_	7.0	_	
AGG BASE CRS (L)	(IN) - -	6.0	-	7.0	_	
	-		-		-	
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- LOCATIONS MEASURED FROM CENTERLINE OF CONSTRUCTION

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ARKANSAS STATE H	IGHWAY AND TRANSPORTATI MATERIALS		LITTLE ROCK, ARKANSAS			
***	MICHAEL BENSON, MA SOIL SURVEY / PAVEMENT					
DATE- 12/04/09SEQUENCE NO 4JOB NUMBER- 090065MATERIAL CODE- SSRVPSFEDERAL AID NOTO BE ASSIGNEDSPEC. YEAR- 2003PURPOSE- SOIL SURVEY SAMPLESUPPLIER ID 1SPEC. REMARKS- NO SPECIFICATION CHECKCOUNTY/STATE- 04SUPPLIER NAME- STATEDISTRICT NO 09NAME OF PROJECT- AVOCA - NORTH GARFIELD (S)PROJECT ENGINEER- NOT APPLICABLEPIT/QUARRY- ARKANSAS						
SAMPLED BY - D.KRAFT		D	ATE SAMPLED - 11/02/09 ATE RECEIVED - 11/09/09			
SAMPLE FROM - TESTHOL MATERIAL DESC SOIL	LE SURVEY - R VALUE- PAV		ATE TESTED - 11/24/09			
SAMPLE ID TEST STATUS STATION LOCATION DEPTH IN FEET MAT'L COLOR MAT'L TYPE LATITUDE DEG-MIN-SE LONGITUDE DEG-MIN-SE % PASSING 2 I 1 1/2 I 3/4 I 3/8 I NO. NO. 1 NO. 1 NO. 4	- INFORMATION ONLY - 139+00 - 6'RT - 0-2.5Z - RED - - - - - - - - - - - - -	- S856 - INFORMATION (- 139+00 - 17'RT - 0-5 - RED - - 36 24 50.	- \$857 ONLY - INFORMATION ONLY - 139+00 - 50'RT - 0-5 - RED -			
NO. 20 LIQUID LIMIT PLASTICITY INDEX AASHTO SOIL UNIFIED SOIL % MOISTURE CONTENT	0 - 67 - 41 - 26 - A-7-6(15) - - 22.4	75 - 36 - 20 - A-6(13) - - 25.0	67 - 35 - 19 - A-6(9) - - 18.3			
ACHM SURFACE (1 ACHM BINDER (1	- 22.4 IN) - 5.75W IN) - 2.0 IN) - 8.0 - - - - -	- 3.0 - 6 .0 				

REMARKS - Z=AUGER REFUSAL, W=MULTIPLE LAYERS, X=STRIPPED - LOCATIONS MEASURED FROM CENTERLINE OF CONSTRUCTION -

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ARKANSAS STATE HI	IGHWAY AND TRANSPORTATI MATERIALS I		TLE ROCK, ARKANSAS			
MICHAEL BENSON, MATERIALS ENGINEER						
***	SOIL SURVEY / PAVEMENT	SOUNDING TEST REPOR	T ***			
DATE - 12/04 JOB NUMBER - 09006 FEDERAL AID NO TO BE PURPOSE - SOIL : SPEC. REMARKS - NO SP SUPPLIER NAME - STATE NAME OF PROJECT - AVO PROJECT ENGINEER - NOT PIT/QUARRY - ARKANSA LOCATION - BENTON	5 SASSIGNED SURVEY SAMPLE ECIFICATION CHECK CA - NORTH GARFIELD (S) APPLICABLE S	MATER: SPEC. SUPPL: COUNT DISTR:	NCE NO 5 IAL CODE - SSRVPS YEAR - 2003 IER ID 1 Y/STATE - 04 ICT NO 09 SAMPLED - 11/02/09			
SAMPLED BY - D.KRAFT			RECEIVED - 11/09/09			
SAMPLE FROM - TESTHOL			TESTED - 11/24/09			
MATERIAL DESC SOIL						
LONGITUDE DEG-MIN-SEC	- S858 - INFORMATION ONLY - 147+00 - 8'LT - 0-4Z - RED - C - 36 24 58.10 C - 94 04 11.50	- 147+00 - 1'RT - 0-3.5Z - RED - - 36 24 58.10	- S860 - INFORMATION ONLY - 147+00 - 29'RT - 0-5 RED - - 36 24 58.00			
1 1/2 IN 3/4 IN 3/8 IN NO. 4 NO. 10 NO. 40	N N 4 - 100 0 - 93 0 - 79 0 - 73	- - - - - - - - - - - - - - - - - - -	- - - - 100 - 95 - 84 - 79 75			
ACHM BINDER (II ACHM SURFACE (II ACHM BINDER (II	- 35 - 20 - A-6(11) - 26.0 N) - 4.5 N) - 2.0 N) - 3.5 N) - 2.5 N) - 2.5 N) - 7.0 -	- 44 - 27 - A-7-6(16) - 31.4 - 5.5W 	- 61 - 42 - A-7-6(31) - 32.8 			

- LOCATIONS MEASURED FROM CENTERLINE OF CONSTRUCTION

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ARKANSAS STATE	HIGHWAY	AND TRANSPORTATI MATERIALS		ENT - LITTLE	ROCK, ARKANSAS	
		ICHAEL BENSON, MA				
**	** SOIL	SURVEY / PAVEMENT	SOUNDING T	EST REPORT *	* * *	
DATE - 12/04/09 SEQUENCE NO 6 JOB NUMBER - 090065 MATERIAL CODE - SSRVPS FEDERAL AID NO TO BE ASSIGNED SPEC. YEAR - 2003 PURPOSE - SOIL SURVEY SAMPLE SUPPLIER ID 1 SPEC. REMARKS - NO SPECIFICATION CHECK COUNTY/STATE - 04 SUPPLIER NAME - STATE DISTRICT NO 09 NAME OF PROJECT - AVOCA - NORTH GARFIELD (S) PROJECT ENGINEER - NOT APPLICABLE						
PIT/QUARRY - ARKAN LOCATION - BENTO SAMPLED BY - D.KRAN SAMPLE FROM - TESTH MATERIAL DESC SO	ON COUNT FT HOLE		VEMENT SOUND	DATE REC DATE TES	IPLED - 11/02/09 EEIVED - 11/09/09 TED - 11/24/09	
LAB NUMBER SAMPLE ID TEST STATUS STATION LOCATION DEPTH IN FEET MAT'L COLOR MAT'L TYPE LATITUDE DEG-MIN- LONGITUDE DEG-MIN- & PASSING 2 1 1/2 3/4 3/8 NO. NO. NO. NO. NO. NO. NO. NO. NO. NO.	- SEC - SEC - IN IN IN IN 4 - 10 - 40 - 80 - 200 -	20093168 S861 INFORMATION ONLY 155+00 7'LT 0-5 RED 36 25 4.40 94 04 5.70 100 97 86	- 2009316 - S862 - INFORMA' - 155+00 - 7'RT - 0-2.5Z - RED - - 36 25	9 - - FION ONLY - - - - - -	S863 INFORMATION ONLY 155+00 41'RT 0-5 RED 36 25 4.20	
AGG BASE CRS CL7	(IN) - - - - - - - - - - - - -	6.0	- 6.0 - - - - -	-		

- LOCATIONS MEASURED FROM CENTERLINE OF CONSTRUCTION

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ARKANSAS STATE	E HIGHWA		NSPORTATI ATERIALS		DEPARTMENT - LI /ISION	TTLE	ROCK, ARKANSAS
	MICHAEL BENSON, MATERIALS ENGINEER						
*	** SOIL	SURVEY /	PAVEMENT	SC	UNDING TEST REPO	DRT *	* * *
DATE - 12					SEQU	ENCE	NO 7
JOB NUMBER - 09					MATE	RIAL	CODE - SSRVPS
FEDERAL AID NO TO					SPEC	. YE	AR - 2003
PURPOSE - SO							ID 1
SPEC. REMARKS - NO		CATION CH	IECK		COUN	TY/S	TATE - 04
SUPPLIER NAME - ST.		NODELL CAR			DIST	RICT	NO 09
NAME OF PROJECT PROJECT ENGINEER			FIELD (S)			
PIT/QUARRY - ARKA		TCAPTE					
LOCATION - BENT		Y			האתנ	C 7M	IPLED - 11/02/09
SAMPLED BY - D.KRA		-					EIVED - 11/02/09
SAMPLE FROM - TEST	HOLE						TED - 11/24/09
MATERIAL DESC SO	IL SURVI	EY - R VA	LUE- PAV	EME			
LAB NUMBER	-	20093171		_	20093172	-	20093173
SAMPLE ID	.	S864			S865		S866
TEST STATUS	31 5.	10 10 10 M					INFORMATION ONLY
STATION		163+00			163+00		171+00
LOCATION	-	R'LT		-	11'RT	-	6'LT
DEPTH IN FEET		0-2.5Z		-	0-5	_	0-4Z
MAT'L COLOR MAT'L TYPE	-	RED		-	RED	-	RED
LATITUDE DEG-MIN-					36 25 10.60		36 25 16.20
LONGITUDE DEG-MIN-	-SEC -	94 03	59.70		94 03 59.60		94 03 52.80
% PASSING 2	IN			-		-	
1 1/2	2 IN			-		-	
	IN			-		-	
254 5	3 IN			174 		_	
	4 -			-	100	_	100
	10 - 40 -			-	88	-	98
	40 - 80 -	79 73		_	75 70	-	94 91
	200 -	69		-	65	-	87
	200						
LIQUID LIMIT	-	36		-	48	-	60
PLASTICITY INDEX AASHTO SOIL	-	22		_	32	_	42
UNIFIED SOIL	-	A-6(11)		-	A-7-6(18)	-	A-7-6(39)
% MOISTURE CONTENT	-	23.1		-	23.6	-	32.8
ACHM SURFACE	(IN) -	9.0W			3.5W	-	5.0
ACHM BINDER	(IN) -	1.5		-		-	1.5
AGG BASE CRS CL7 (IN) - 6.0				-	6.0	-	5.0
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						0.0	

- LOCATIONS MEASURED FROM CENTERLINE OF CONSTRUCTION

ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT - LITTLE ROCK, ARKANSAS MATERIALS DIVISION MICHAEL BENSON, MATERIALS ENGINEER *** SOIL SURVEY / PAVEMENT SOUNDING TEST REPORT *** DATE - 12/04/09 SEQUENCE NO. - 8 - 090065 JOB NUMBER MATERIAL CODE - SSRVPS FEDERAL AID NO. - TO BE ASSIGNED SPEC. YEAR - 2003 PURPOSE - SOIL SURVEY SAMPLE SUPPLIER ID. - 1 SPEC. REMARKS - NO SPECIFICATION CHECK COUNTY/STATE - 04 SUPPLIER NAME - STATE DISTRICT NO. - 09 NAME OF PROJECT - AVOCA - NORTH GARFIELD (S) PROJECT ENGINEER - NOT APPLICABLE PIT/QUARRY - ARKANSAS LOCATION - BENTON COUNTY DATE SAMPLED - 11/02/09 SAMPLED BY DATE RECEIVED - 11/09/09 - D.KRAFT SAMPLE FROM - TESTHOLE DATE TESTED - 11/24/09 MATERIAL DESC. - SOIL SURVEY - R VALUE- PAVEMENT SOUNDINGS - 20093175 - 20093174 LAB NUMBER - 20093176 - S868 SAMPLE ID - S869 - S867 TEST STATUS - INFORMATION ONLY - INFORMATION ONLY - INFORMATION ONLY - 171+00 - 171+00 - 179+00 STATION - 30'LT - 0-3.5Z 6'LT 0-5 RED LOCATION - 16'LT DEPTH IN FEET - 0-5 _ RED – RED MAT'L COLOR MAT'L TYPE -_ LATITUDE DEG-MIN-SEC - 36 25 16.30 - 36 25 16.40 - 36 25 21.50 LONGITUDE DEG-MIN-SEC - 94 03 52.90 94 03 53.00 94 03 45.30 2 % PASSING IN. - $1 \ 1/2 \ IN. -$ -3/4 IN. --3/8 IN. -_ 100 NO. 4 - 100 100 92 NO. 10 - 95 88 -NO. 40 - 89 83 72 NO. 80 - 87 79 66 NO. 200 - 84 74 60 - 23 LIQUID LIMIT - 60 - 47 - 42 PLASTICITY INDEX - 27 7 - A-7-6(37) A-7-6(19) AASHTO SOIL A - 4(2)UNIFIED SOIL -% MOISTURE CONTENT -30.5 18.4 32.8 (IN) -ACHM SURFACE 3.0 -5.25W ACHM BINDER (IN) -2.75 AGG BASE CRS CL7 (IN) -5.0 5.0

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

- LOCATIONS MEASURED FROM CENTERLINE OF CONSTRUCTION

ARKANSAS STATE H		DRTATION DEPARTMENT	- LITTLE ROCK, ARKANSAS		
		N, MATERIALS ENGIN			
***	SOIL SURVEY / PAV	EMENT SOUNDING TES	T REPORT ***		
DATE-12/04/09SEQUENCE NO9JOB NUMBER-090065MATERIAL CODE-SSRVPSFEDERAL AID NOTO BE ASSIGNEDSPEC. YEAR-2003PURPOSE-SOIL SURVEY SAMPLESUPPLIER ID1SPEC. REMARKS-NO SPECIFICATION CHECKCOUNTY/STATE-04SUPPLIER NAME-STATEDISTRICT NO09NAME OF PROJECT-AVOCA - NORTH GARFIELD (S)PROJECT ENGINEER-NOT APPLICABLE					
PIT/QUARRY - ARKANSA LOCATION - BENTON SAMPLED BY - D.KRAFT SAMPLE FROM - TESTHOL MATERIAL DESC SOIL	COUNTY .E	- PAVEMENT SOUNDIN	DATE SAMPLED - 11/02/09 DATE RECEIVED - 11/09/09 DATE TESTED - 11/24/09 GS		
LAB NUMBER			- 20093179		
SAMPLE ID TEST STATUS STATION LOCATION DEPTH IN FEET	- S870	- S871	- S872 - S872 DN ONLY - INFORMATION ONLY - 187+00 - 5'LT - 0-5 - RD/BR		
LATITUDE DEG-MIN-SE	C - 36 25 21	- .60 - 36 25	- 21.70 - 36 25 27.40		
LONGITUDE DEG-MIN-SE			45.60 94 03 38.70		
1 1/2 I 3/4 I 3/8 I NO. NO. 1 NO. 1 NO. 4	N N 4 - 100 0 - 76 0 - 51 0 - 43	- - - 100 - 93 - 83 - 79 - 75	- - - - 100 - 96 - 88 - 82 - 66		
LIQUID LIMIT	- ND	- 40	- 26		
PLASTICITY INDEX AASHTO SOIL UNIFIED SOIL	- NP - A-4(0) -	- 24 - A-6(16) -	- 9 - A-4(4)		
% MOISTURE CONTENT	- 7.5	- 31.6	20.2		
ASPH TREAT BASE CRS (I ASPH TREAT BASE CRS (I	2N) - 3.5W 2N) 2N) 2N) 		- 7.0W - 3.0 - 1.0X - 3.0 		

REMARKS - Z=AUGER REFUSAL, W=MULTIPLE LAYERS, X=STRIPPED - LOCATIONS MEASURED FROM CENTERLINE OF CONSTRUCTION -

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ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT - LITTLE ROCK, ARKANSAS MATERIALS DIVISION					
MICHAEL BENSON, MA *** SOIL SURVEY / PAVEMENT					
DATE - 12/04/09 JOB NUMBER - 090065 FEDERAL AID NO TO BE ASSIGNED PURPOSE - SOIL SURVEY SAMPLE SPEC. REMARKS - NO SPECIFICATION CHECK SUPPLIER NAME - STATE NAME OF PROJECT - AVOCA - NORTH GARFIELD (S PROJECT ENGINEER - NOT APPLICABLE PIT/QUARRY - ARKANSAS LOCATION - BENTON COUNTY	DISTRICT NO 09				
SAMPLED BY - D.KRAFT SAMPLE FROM - TESTHOLE	DATE RECEIVED - 11/09/09				
MATERIAL DESC SOIL SURVEY - R VALUE- PAV	DATE TESTED - 11/24/09 TEMENT SOUNDINGS				
SAMPLE ID-S873TEST STATUS-INFORMATION ONLY					
NO. 10 - 88 NO. 40 - 76 NO. 80 - 71 NO. 200 - 66	- 95 - 90 - 88 - 79 - 83 - 75 - 78 - 71				
LIQUID LIMIT - 37 PLASTICITY INDEX - 23 AASHTO SOIL - A-6(12) UNIFIED SOIL -	- 37 - 33 - 20 - 19 - A-6(14) - A-6(11)				
% MOISTURE CONTENT - 21.7 ACHM SURFACE (IN) - 2.5 ACHM BINDER (IN) -	26.8 20.2 5.0W 2.5 3.5 5.0 				

- LOCATIONS MEASURED FROM CENTERLINE OF CONSTRUCTION

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ARKANSAS STATE	HIGHWA		TATION		- LITTLE	ROCK, ARKANSAS	
	1	MICHAEL BENSON			EER		
* *	* SOIL	SURVEY / PAVE	MENT SC	UNDING TEST	r report *	* *	
DATE - 12/04/09 JOB NUMBER - 090065 FEDERAL AID NO TO BE ASSIGNED PURPOSE - SOIL SURVEY SAMPLE SPEC. REMARKS - NO SPECIFICATION CHECK SUPPLIER NAME - STATE NAME OF PROJECT - AVOCA - NORTH GARFIELD (S) PROJECT ENGINEER - NOT APPLICABLE					SEQUENCE NO 11 MATERIAL CODE - SSRVPS SPEC. YEAR - 2003 SUPPLIER ID 1 COUNTY/STATE - 04 DISTRICT NO 09		
PIT/QUARRY- ARKANSASLOCATION- BENTON COUNTYDATE SAMPLED - 11/02/SAMPLED BY- D.KRAFTDATE RECEIVED - 11/09/SAMPLE FROM- TESTHOLEDATE TESTED - 11/24/MATERIAL DESC SOIL SURVEY- R VALUE- PAVEMENT SOUNDINGS						EIVED - 11/09/09	
LAB NUMBER SAMPLE ID TEST STATUS STATION LOCATION DEPTH IN FEET MAT'L COLOR MAT'L TYPE		20093183 S876 INFORMATION C 195+00 16'LT 0-5 RD/BR	- - - - - - - - -	20093184 S877 INFORMATIC 195+00 40'LT 0-5 RD/BR		20093185 S878 INFORMATION ONLY 203+00 8'LT 0-5 RD/BR	
LATITUDE DEG-MIN- LONGITUDE DEG-MIN-					33.70 - 32.50	36 25 39.50 94 03 25.90	
<pre>% PASSING 2 1 1/2 3/4 3/8 NO. NO. NO.</pre>	IN IN IN IN 4 - 10 - 40 - 80 -	100 87 77		100 96 91 85 79		100 94 83 77 72	
LIQUID LIMIT	-	31	-	30		24	
PLASTICITY INDEX AASHTO SOIL UNIFIED SOIL	-	17 A-6(9)	-	14 A-6(9)	-	7 A-4(11)	
% MOISTURE CONTENT		21.8		19.3		19.2	
ACHM SURFACE AGG BASE CRS CL7	(IN) - (IN) - - - - - - - - - - - - - -	4.5W 5.0				8.5W 5.0	

- LOCATIONS MEASURED FROM CENTERLINE OF CONSTRUCTION

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ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT - LITTLE ROCK, ARKANSAS MATERIALS DIVISION									
MATERIALS DIVISION MICHAEL BENSON, MATERIALS ENGINEER *** SOIL SURVEY / PAVEMENT SOUNDING TEST REPORT ***									
		SURVEY /	PAVEMENT S	5001	NDING TEST				1.0
DATE - 12/04/09 JOB NUMBER - 090065 FEDERAL AID NO TO BE ASSIGNED PURPOSE - SOIL SURVEY SAMPLE						SEQUENCE NO 12 MATERIAL CODE - SSRVPS SPEC. YEAR - 2003 SUPPLIER ID 1			
SPEC. REMARKS - NO SPECIFICATION CHECKCOUNTY/STATE - 04SUPPLIER NAME - STATEDISTRICT NO 09NAME OF PROJECT - AVOCA - NORTH GARFIELD (S)DISTRICT NO 09PROJECT ENGINEER - NOT APPLICABLEDISTRICT NO 09									
PIT/QUARRY- ARKANSASLOCATION- BENTON COUNTYDATE SAMPLEDSAMPLED BY- D.KRAFTDATE RECEIVEDSAMPLE FROM- TESTHOLEDATE TESTEDMATERIAL DESC SOIL SURVEY- R VALUE- PAVEMENT SOUNDINGS						11/09/09			
LAB NUMBER	-	20093186		- 2	20093187		-	2009318	8
SAMPLE ID TEST STATUS	-		ION ONLY		5880 INFORMATIO	N ONLY		S881 INFORMA	TION ONLY
STATION LOCATION		203+00			203+00 15'LT			210+00 11'LT	
DEPTH IN FEET		21'LT 0-3.5Z		-)-3.5Z		-	0-3Z	
MAT'L COLOR MAT'L TYPE	-	RD/BR	-	_ R -	RED		1 1	RED	
LATITUDE DEG-MIN LONGITUDE DEG-MIN					36 25 3 94 03 2	39.80 26.10	-	36 2 94 0	5 44.20 3 18.00
% PASSING 2			÷	-			-		
and the second	2 IN 4 IN		-	-			-		
	3 IN		÷	-			-		
	4 -		-	-	100		_	100	
NO.	10 - 40 -	92 81	÷	-	99 81			96 86	
NO.			-	-	78		_	81	
	200 -				75			75	
LIQUID LIMIT	-	28	-	<u></u>	55		-	33	
PLASTICITY INDEX	-	12	-	.	39			18	
AASHTO SOIL UNIFIED SOIL	-	A-6(6)	-	-	A-7-6(28)		-	A-6(11)
% MOISTURE CONTENT		18.9	-	-	30.1		-	20.5	
ACHM SURFACE	(IN) -	3.OW	-	-			-	5.75W	
ACHM BINDER	(IN) -		-	<u></u>	<u></u>		<u>.</u>	2.0	
AGG BASE CRS CL7	(IN) -	6.0	-	-			_	6.0	
	-		-	<u>-</u> 22			-		
	_		-	-			-		
	-		-	-			_		

- LOCATIONS MEASURED FROM CENTERLINE OF CONSTRUCTION

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ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT - LITTLE ROCK, ARKANSAS MATERIALS DIVISION						
MICHAEL BENSON, MATERIALS ENGINEER						
*** SOIL SURVEY / PAVEMENT SOUNDING TEST REPORT ***DATE- 12/04/09SEQUENCE NO 1JOB NUMBER- 090065MATERIAL CODE - SFEDERAL AID NOTO BE ASSIGNEDSPEC. YEAR - 2PURPOSE- SOIL SURVEY SAMPLESUPPLIER ID 1SPEC. REMARKS- NO SPECIFICATION CHECKCOUNTY/STATE - 0SUPPLIER NAME- STATEDISTRICT NO 0NAME OF PROJECT- AVOCA - NORTH GARFIELD (S)PROJECT ENGINEER - NOT APPLICABLE						
PIT/QUARRY - ARKANS LOCATION - BENTON SAMPLED BY - D.KRAFT SAMPLE FROM - TESTHO MATERIAL DESC SOIL	COUNTY LE	R VALUE- PAVI	ement soundin	DATE REC DATE TES	PLED - 11/02/09 EIVED - 11/09/09 TED - 11/24/09	
MAT'L TYPE	- S882 - INFO - 210+ - 23'L - 0-4Z - RED	RMATION ONLY 00 T	- S883 - INFORMATIO - 210+00 - 48'LT - 0-4Z - RED	- 	S884 INFORMATION ONLY 219+00 11'RT 0-3.5Z RED	
l 1/2 1 3/4 1 3/8 1 NO. NO. 1 NO. 4	SC - 94 SN. - SN. - SN. - 4 - 0 - 90 -			44.50 - 18.00 - - - - - - - - - - - - -		
ACHM SURFACE () ACHM BINDER ()			- 47 - 30 - A-7-6(24 - 26.8)	34 18 A-6(11) 20.5 5.0 3.0 5.0	
	-))==	1. 		

REMARKS - Z=AUGER REFUSAL, W=MULTIPLE LAYERS, X=STRIPPED - LOCATIONS MEASURED FROM CENTERLINE OF CONSTRUCTION -

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ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT - LITTLE ROCK, ARKANSAS MATERIALS DIVISION			
MICHAEL BENSON, MA *** SOIL SURVEY / PAVEMENT			
DATE - 12/04/09 JOB NUMBER - 090065 FEDERAL AID NO TO BE ASSIGNED PURPOSE - SOIL SURVEY SAMPLE SPEC. REMARKS - NO SPECIFICATION CHECK SUPPLIER NAME - STATE NAME OF PROJECT - AVOCA - NORTH GARFIELD (S) PROJECT ENGINEER - NOT APPLICABLE	DISTRICT NO 09		
PIT/QUARRY - ARKANSAS LOCATION - BENTON COUNTY SAMPLED BY - D.KRAFT SAMPLE FROM - TESTHOLE MATERIAL DESC SOIL SURVEY - R VALUE- PAVE	DATE SAMPLED - 11/02/09 DATE RECEIVED - 11/09/09 DATE TESTED - 11/24/09 EMENT SOUNDINGS		
TEST STATUS - INFORMATION ONLY STATION - 219+00 LOCATION - 50'RT DEPTH IN FEET - 0-4Z MAT'L COLOR - RED MAT'L TYPE - LATITUDE DEG-MIN-SEC - 36 25 46.60 LONGITUDE DEG-MIN-SEC - 94 03 8.60 % PASSING 2 IN 1 1/2 IN 3/4 IN 3/8 IN NO. 4 - 100 NO. 10 - 94 NO. 40 - 85 NO. 80 - 82	- S886 - S887 - INFORMATION ONLY - INFORMATION ONLY 227+00 - 227+00 - 7'LT - 15'LT 0-5 - 0-5 RED - RED - RED - 36 25 50.00 - 36 25 50.00 94 02 59.70 94 02 59.80 - 100 - 100 - 96 - 89 - 93 - 74 - 82 - 68		
NO. 200 - 78 LIQUID LIMIT - 41 PLASTICITY INDEX - 24 AASHTO SOIL - A-7-6(18) UNIFIED SOIL - % MOISTURE CONTENT - 23.9 ACHM SURFACE (IN) CHIP SEAL (IN) ACHM BINDER (IN) AGG BASE CRS CL7 (IN) 	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$		

- LOCATIONS MEASURED FROM CENTERLINE OF CONSTRUCTION

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ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT - LITTLE ROCK, ARKANSAS MATERIALS DIVISION MICHAEL BENSON, MATERIALS ENGINEER *** SOIL SURVEY / PAVEMENT SOUNDING TEST REPORT *** DATE - 12/04/09 SEQUENCE NO. - 15 JOB NUMBER - 090065 MATERIAL CODE - SSRVPS FEDERAL AID NO.- TO BE ASSIGNED SPEC. YEAR - 2003 PURPOSE - SOIL SURVEY SAMPLE SUPPLIER ID. - 1 SPEC. REMARKS - NO SPECIFICATION CHECK COUNTY/STATE - 04 SUPPLIER NAME - STATE DISTRICT NO. - 09 NAME OF PROJECT - AVOCA - NORTH GARFIELD (S) PROJECT ENGINEER - NOT APPLICABLE PIT/QUARRY - ARKANSAS - BENTON COUNTY LOCATION DATE SAMPLED - 11/02/09 SAMPLED BY - D.KRAFT DATE RECEIVED - 11/09/09 SAMPLE FROM - TESTHOLE DATE TESTED - 11/24/09 MATERIAL DESC. - SOIL SURVEY - R VALUE- PAVEMENT SOUNDINGS - 20093195 - 20093196 - S888 _ S889 LAB NUMBER - 20093197 - S889 SAMPLE ID - S890 - S888 TEST STATUS - INFORMATION ONLY - INFORMATION ONLY - INFORMATION ONLY - 227+00 - 235+00 - 235+00 STATION - 15'RT - 5'RT LOCATION - 27'LT _____0-5 ______RED _____0-3.5Z DEPTH IN FEET - 0-5 _ RED - RED MAT'L COLOR MAT'L TYPE LATITUDE DEG-MIN-SEC - 36 25 50.00 - 36 25 52.60 - 36 25 52.40 LONGITUDE DEG-MIN-SEC - 94 02 59.80 94 02 50.60 94 02 50.60 % PASSING 2 IN. -1 1/2 IN. --3/4 IN. --3/8 IN. --100 NO. 4 - 100 100 93 NO. 10 - 93 88 NO. 40 - 80 80 77 - 73 73 NO. 80 -75 NO. 200 - 71 63 67 LIQUID LIMIT - 68 - 28 - 23 PLASTICITY INDEX - 50 6 13 -AASHTO SOIL -A-7-6(35) A-6(5) A-4(2) UNIFIED SOIL -% MOISTURE CONTENT -16.7 18.7 27.4 ACHM SURFACE (IN) --12.25W -7.5W --3.0 -AGG BASE CRS CL7 (IN) -5.0 -

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

- LOCATIONS MEASURED FROM CENTERLINE OF CONSTRUCTION

ARKANSAS STATE	HIGHWAY AN	D TRANSPORTATI MATERIALS		NT - LITTLE	ROCK, ARKANSAS
		AEL BENSON, MA	TERIALS ENG		
		VEY / PAVEMENT	SOUNDING TH		
DATE - 12/ JOB NUMBER - 090 FEDERAL AID NO TO PURPOSE - SOJ SPEC. REMARKS - NO SUPPLIER NAME - STA NAME OF PROJECT - A PROJECT ENGINEER - N	DOG5 BE ASSIGNE L SURVEY S. SPECIFICAT TE AVOCA - NOR	AMPLE ION CHECK IH GARFIELD (S)	MATERIAL SPEC. YE SUPPLIER COUNTY/S	NO 16 CODE - SSRVPS AR - 2003 ID 1 TATE - 04 NO 09
PIT/QUARRY - ARKAN LOCATION - BENTO SAMPLED BY - D.KRAN SAMPLE FROM - TESTH MATERIAL DESC SO	ON COUNTY FT IOLE	- R VALUE- PAV	TEMENT SOUND	DATE REC DATE TES	IPLED - 11/02/09 EIVED - 11/09/09 TED - 11/24/09
LAB NUMBER					20002200
SAMPLE ID TEST STATUS STATION LOCATION DEPTH IN FEET MAT'L COLOR MAT'L TYPE	- S8: - INI - 235 - 50 - 0-5 - REI -	ORMATION ONLY +00 RT	- S892 - INFORMAT - 243+00 - 7'LT - 0-3.5Z - RD/BR	- ION ONLY - - -	20093200 S893 INFORMATION ONLY 243+00 16'LT 0-3.5Z RD/BR
LATITUDE DEG-MIN- LONGITUDE DEG-MIN-					36 25 57.20 94 02 42.10
% PASSING 2 1 1/2 3/4 3/8 NO. NO. NO. NO.	IN IN IN 4 - 10 10 - 9 40 - 8 80 - 8	0	- - - - - - - - - - - - - - - - - - -	-	100 89 80 76 71
LIQUID LIMIT PLASTICITY INDEX AASHTO SOIL UNIFIED SOIL % MOISTURE CONTENT	-		- 33 - 17 - A-6(11) - 21.4	-	27 12 A-6(6) 23.2
ACHM SURFACE CHIP SEAL ACHM BINDER ASPH TREAT BASE CRS AGG BASE CRS CL7	(IN)		- 11.0W - 1.0 - 2.0 - 5.0	-	7.0W 6.0X 4.0

- LOCATIONS MEASURED FROM CENTERLINE OF CONSTRUCTION

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ARKANSAS STATE HIGHWAY AND TRANSPORTATI MATERIALS 1	
MICHAEL BENSON, MA	
*** SOIL SURVEY / PAVEMENT	SOUNDING TEST REPORT ***
DATE - 12/04/09 JOB NUMBER - 090065 FEDERAL AID NO TO BE ASSIGNED PURPOSE - SOIL SURVEY SAMPLE SPEC. REMARKS - NO SPECIFICATION CHECK SUPPLIER NAME - STATE NAME OF PROJECT - AVOCA - NORTH GARFIELD (S) PROJECT ENGINEER - NOT APPLICABLE PIT/QUARRY - ARKANSAS LOCATION - BENTON COUNTY SAMPLED BY - D.KRAFT	DATE SAMPLED - 11/02/09 DATE RECEIVED - 11/09/09
SAMPLE FROM - TESTHOLE	DATE TESTED - 11/24/09
MATERIAL DESC SOIL SURVEY - R VALUE- PAVI	EMENT SOUNDINGS
SAMPLE ID - S894 TEST STATUS - INFORMATION ONLY	
LIQUID LIMIT - 31 PLASTICITY INDEX - 12 AASHTO SOIL - A-6(8) UNIFIED SOIL - % MOISTURE CONTENT - 24.8 ACHM SURFACE (IN) ACHM BINDER (IN) CHIP SEAL (IN) ACHM BINDER (IN)	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$

- LOCATIONS MEASURED FROM CENTERLINE OF CONSTRUCTION

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ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT - LITTLE ROCK, ARKANSAS MATERIALS DIVISION MICHAEL BENSON, MATERIALS ENGINEER *** SOIL SURVEY / PAVEMENT SOUNDING TEST REPORT *** - 12/04/09 DATE SEQUENCE NO. - 18 - 090065 JOB NUMBER MATERIAL CODE - SSRVPS FEDERAL AID NO.- TO BE ASSIGNED SPEC. YEAR - 2003 PURPOSE - SOIL SURVEY SAMPLE SUPPLIER ID. - 1 SPEC. REMARKS - NO SPECIFICATION CHECK COUNTY/STATE - 04 SUPPLIER NAME - STATE DISTRICT NO. - 09 NAME OF PROJECT - AVOCA - NORTH GARFIELD (S) PROJECT ENGINEER - NOT APPLICABLE PIT/QUARRY - ARKANSAS LOCATION - BENTON COUNTY DATE SAMPLED - 11/02/09 SAMPLED BY DATE RECEIVED - 11/09/09 - D.KRAFT SAMPLE FROM - TESTHOLE DATE TESTED - 11/24/09 MATERIAL DESC. - SOIL SURVEY - R VALUE- PAVEMENT SOUNDINGS - 20093204 - 20093205 - S897 - S898 LAB NUMBER - 20093206 SAMPLE ID - S898 - S899 - S897 TEST STATUS - INFORMATION ONLY - INFORMATION ONLY - INFORMATION ONLY - 259+00 - 259+00 STATION - 251+00 - 6'LT - 0-3.8Z - 16'LT - 0-5 _ RED - 50'RT LOCATION - 0-5 DEPTH IN FEET _ _ _ _ ... - RD/BR MAT'L COLOR MAT'L TYPE _ -LATITUDE DEG-MIN-SEC - 36 26 1.30 - 36 26 6.70 - 36 26 6.80 LONGITUDE DEG-MIN-SEC - 94 02 34.50 94 02 27.30 94 02 27.30 % PASSING 2 IN. -1 1/2 IN. -3/4 IN. -3/8 IN. -_ 100 NO. 4 - 100 100 NO. 10 - 93 87 92 NO. 40 - 86 74 76 - 68 NO. 80 - 83 70 NO. 200 - 78 61 64 - 31 LIOUID LIMIT - 34 - 28 PLASTICITY INDEX - 18 AASHTO SOIL - A-6(12) - 13 14 - A-6(5) A-6(6) UNIFIED SOIL -% MOISTURE CONTENT -21.9 19.3 22.1 ACHM SURFACE (IN) -10.5W -_ 9.0W -ACHM BINDER (IN) -2.0 AGG BASE CRS CL7 (IN) -5.0 3.0

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

- LOCATIONS MEASURED FROM CENTERLINE OF CONSTRUCTION

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ARKANSAS STATE H	IGHWAY		ORTATIO		r - LITTLE	ROCK, ARKANSAS
		IICHAEL BENS	ON, MATI	ERIALS ENGIN		
		SURVEY / PAV	VEMENT S	SOUNDING TES	T REPORT *	**
DATE - 12/0 JOB NUMBER - 0900 FEDERAL AID NO TO B PURPOSE - SOIL SPEC. REMARKS - NO S	65 E ASSI SURVE	Y SAMPLE	7		MATERIAL SPEC. YEA SUPPLIER	NO 20 CODE - SSRVPS AR - 2003 ID 1
SUPPLIER NAME - STAT NAME OF PROJECT - AV PROJECT ENGINEER - NO PIT/QUARRY - ARKANS	E OCA - T APPL AS	NORTH GARFII ICABLE				IATE - 04 NO 09
LOCATION - BENTON SAMPLED BY - D.KRAFT SAMPLE FROM - TESTHO MATERIAL DESC SOIL	LE		e- Paven	MENT SOUNDIN	DATE REC DATE TES	PLED - 11/02/09 EIVED - 11/09/09 TED - 11/24/09
LAB NUMBER		20093210				20093212
SAMPLE ID		S903		_ S904		S905
TEST STATUS STATION LOCATION	-	267+00 50'RT		- 275+00 - 6'RT	-	INFORMATION ONLY 275+00 15'RT
DEPTH IN FEET MAT'L COLOR MAT'L TYPE	-	0-1.5Z RD/BR		0-5 RED -	-	0-2.5Z RED
LATITUDE DEG-MIN-SI LONGITUDE DEG-MIN-SI	EC – EC –	36 26 1. 94 02 1.	1.00 · 9.10			36 26 16.00 94 02 11.50
<pre>% PASSING 2 1 1/2 1 3/4 3 3/8 1 NO. NO. NO. NO. NO. NO. NO. NO. NO. 20</pre>	IN IN IN IN 4 - 10 - 40 - 30 -	100 79 69 66 64	-	100 87 69 63 57		100 84 68 63 58
LIQUID LIMIT PLASTICITY INDEX AASHTO SOIL UNIFIED SOIL		31 7 A-4(3)	-	- 27 - 11 - A-6(3) - 24.1		26 8 A-4(2)
% MOISTURE CONTENT	-	26.0				19.8
CHIP SEAL (ACHM SURFACE (CHIP SEAL (IN) - IN) - IN) - IN) - IN) - IN) -		-	- 8.0W - 1.25 - 1.0 5 - 1.0		9.0W
	IN) _ - - -		-	3.0		3.0

- LOCATIONS MEASURED FROM CENTERLINE OF CONSTRUCTION

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ARKANSAS STATE H		MATERIALS D	IVISION		DCK, ARKANSAS
***			ERIALS ENGINE		
*** SOIL SURVEY / PAVEMENT SOUNDING TEST REPORT ***DATE- 12/04/09SEQUENCE NO 21JOB NUMBER- 090065MATERIAL CODE - SSRVPSFEDERAL AID NOTO BE ASSIGNEDSPEC. YEAR - 2003PURPOSE- SOIL SURVEY SAMPLESUPPLIER ID 1SPEC. REMARKS- NO SPECIFICATION CHECKCOUNTY/STATE - 04SUPPLIER NAME- STATEDISTRICT NO 09NAME OF PROJECT- AVOCA - NORTH GARFIELD (S)PROJECT ENGINEER- NOT APPLICABLE					
PIT/QUARRY - ARKANSA LOCATION - BENTON SAMPLED BY - D.KRAFT SAMPLE FROM - TESTHON MATERIAL DESC SOIL	COUNTY	VALUE- PAVE	MENT SOUNDING	DATE RECEI DATE TESTE	ED - 11/02/09 VED - 11/09/09 D - 11/24/09
SAMPLE ID TEST STATUS STATION LOCATION DEPTH IN FEET MAT'L COLOR MAT'L TYPE LATITUDE DEG-MIN-SE LONGITUDE DEG-MIN-SE % PASSING 2 I 1 1/2 I 3/4 I 3/8 I NO. NO. 1 NO. 1 NO. 4 NO. 20	- S906 - INFORM - 275+00 - 58'RT - 0-2.52 - RED - - - - - - - - - - - - - - - - - - -	MATION ONLY 26 15.70 02 11.30	- 283+00 - CL - 0-5 - RD/BR - 36 26 2 94 02 	- S N ONLY - II - 2 - C - 0 - R 20.40 - 2.40 - 	9908 NFORMATION ONLY 91+00 L -5 D/BR 36 26 23.10 94 01 54.20
LIQUID LIMIT PLASTICITY INDEX AASHTO SOIL UNIFIED SOIL % MOISTURE CONTENT	- 26 - 7 - A-4(3 - 16. - - - - - - - - - - - - - - - - - - -		- 35 - 18 - A-6(9) - 24.5 	-	31 13 A-6(9) 22.7

- LOCATIONS MEASURED FROM CENTERLINE OF CONSTRUCTION

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ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT - LITTLE ROCK, ARKANSAS MATERIALS DIVISION				
	MICHAEL BENSON, MA			
*** S	OIL SURVEY / PAVEMENT	SOUNDING TEST REPO	RT ***	
DATE-12/07/09SEQUENCE NO22JOB NUMBER-090065MATERIAL CODE-SSRVPSFEDERAL AID NOTO BE ASSIGNEDSPEC. YEAR-2003PURPOSE-SOIL SURVEY SAMPLESUPPLIER ID1SPEC. REMARKS-NO SPECIFICATION CHECKCOUNTY/STATE-04SUPPLIER NAME-AVOCA - NORTH GARFIELD (S)-09PROJECT ENGINEER-NOT APPLICABLE				
PIT/QUARRY - ARKANSAS LOCATION - BENTON C SAMPLED BY - D.KRAFT SAMPLE FROM - TESTHOLE	COUNTY	DATE DATE	SAMPLED - 11/02/09 RECEIVED - 11/09/09 TESTED - 11/24/09	
MATERIAL DESC SOIL S	SURVEY - R VALUE- PAVI	EMENT SOUNDINGS		
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 3/4 IN 3/8 IN. NO. 4 NO. 10	- INFORMATION ONLY - 296+00 - CL - 0-5 - RED - - 36 26 24.90 - 94 01 47.50 	- S910 - INFORMATION ONL - 307+00 - CL - 0-4Z - RED -	- 318+50 - CL - 0-5 - RED - 36 26 31.10	
NO. 80		- 69	- 78	
NO. 200 LIQUID LIMIT PLASTICITY INDEX AASHTO SOIL UNIFIED SOIL % MOISTURE CONTENT	- 77 - 29 - 12 - A-6(7) - 22.4 	64 - 29 - 11 - A-6(5) - 27.2 	73 - 29 - 12 - A-6(7) - 20.1	

- LOCATIONS MEASURED FROM CENTERLINE OF CONSTRUCTION

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ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT - LITTLE ROCK, ARKANSAS MATERIALS DIVISION				
	ATERIALS ENGINEER T SOUNDING TEST REPORT ***			
*** SOIL SURVEY / PAVEMENT SOUNDING TEST REPORT ***DATE- 12/04/09SEQUENCE NO 23JOB NUMBER- 090065MATERIAL CODE - SSRVPSFEDERAL AID NOTO BE ASSIGNEDSPEC. YEAR - 2003PURPOSE- SOIL SURVEY SAMPLESUPPLIER ID 1SPEC. REMARKS- NO SPECIFICATION CHECKCOUNTY/STATE - 04SUPPLIER NAME- STATEDISTRICT NO 09NAME OF PROJECT- AVOCA - NORTH GARFIELD (S)PROJECT ENGINEER- NOT APPLICABLE				
PIT/QUARRY - ARKANSAS LOCATION - BENTON COUNTY SAMPLED BY - D.KRAFT SAMPLE FROM - TESTHOLE MATERIAL DESC SOIL SURVEY - R VALUE- PA	DATE SAMPLED - 11/02/09 DATE RECEIVED - 11/09/09 DATE TESTED - 11/24/09 AVEMENT SOUNDINGS			
SAMPLE ID-S912TEST STATUS-INFORMATION ONLYSTATION-323+00LOCATION-CLDEPTH IN FEET-0-5MAT'L COLOR-REDMAT'L TYPE-	- 20093220 - 20093221 - S913 - S914 Y - INFORMATION ONLY - INFORMATION ONLY - 331+00 - 339+50 - CL - 100'LT - 0-5 - 0-5 - BR/RD - BR/RD			
LATITUDE DEG-MIN-SEC - 36 26 34.00 LONGITUDE DEG-MIN-SEC - 94 01 17.20	- 36 26 36.40 - 36 26 39.90 94 01 7.80 94 00 58.40			
<pre>% PASSING 2 IN</pre>	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$			
LIQUID LIMIT - 31 PLASTICITY INDEX - 14 AASHTO SOIL - A-6(8) UNIFIED SOIL -	$\begin{array}{cccccccccccccccccccccccccccccccccccc$			
<pre>% MOISTURE CONTENT - 20.7</pre>				

- LOCATIONS MEASURED FROM CENTERLINE OF CONSTRUCTION

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ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT - LITTLE ROCK, ARKANSAS MATERIALS DIVISION				
	ENSON, MATER PAVEMENT SO			* *
*** SOIL SURVEY / PAVEMENT SOUNDING TEST REPORT ***DATE- 12/04/09SEQUENCE NO 24JOB NUMBER- 090065MATERIAL CODE - SSRVPSFEDERAL AID NOTO BE ASSIGNEDSPEC. YEAR - 2003PURPOSE- SOIL SURVEY SAMPLESUPPLIER ID 1SPEC. REMARKS- NO SPECIFICATION CHECKCOUNTY/STATE - 04SUPPLIER NAME- STATEDISTRICT NO 09NAME OF PROJECT- AVOCA - NORTH GARFIELD (S)PROJECT ENGINEER- NOT APPLICABLE				
PIT/QUARRY - ARKANSAS LOCATION - BENTON COUNTY SAMPLED BY - D.KRAFT SAMPLE FROM - TESTHOLE MATERIAL DESC SOIL SURVEY - R VA	ALUE- PAVEME		DATE RECE DATE TEST	PLED - 11/02/09 SIVED - 11/09/09 FED - 11/24/09
SAMPLE ID - S915	ION ONLY - -	S916	- 1 ONLY -	20093224 S917 INFORMATION ONLY 363+00 CL 0-5 RED
LATITUDE DEG-MIN-SEC - 36 26 LONGITUDE DEG-MIN-SEC - 94 00		1912 M. 1910 March 2013	4.70 - 9.80	36 26 47.10 94 00 31.00
<pre>% PASSING 2 IN 1 1/2 IN 3/4 IN 3/8 IN NO. 4 - 100 NO. 10 - 90 NO. 40 - 78 NO. 80 - 75 NO. 200 - 69</pre>		100 92 76 70 62		100 97 89 83 77
LIQUID LIMIT - 27 PLASTICITY INDEX - 10 AASHTO SOIL - A-4(5) UNIFIED SOIL -	-	25 7 A-4(2)	-	32 13 A-6(9)
<pre>% MOISTURE CONTENT - 23.8</pre>		28.8		18.4

- LOCATIONS MEASURED FROM CENTERLINE OF CONSTRUCTION

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ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT - LITTLE ROCK, ARKANSAS MATERIALS DIVISION				
MICHAEL BENSON, MA *** SOIL SURVEY / PAVEMENT	FERIALS ENGINEER			
DATE - 12/04/09 SEQUENCE NO 25 JOB NUMBER - 090065 MATERIAL CODE - SSRVPS FEDERAL AID NO TO BE ASSIGNED SPEC. YEAR - 2003 PURPOSE - SOIL SURVEY SAMPLE SUPPLIER ID 1 SPEC. REMARKS - NO SPECIFICATION CHECK COUNTY/STATE - 04 SUPPLIER NAME - STATE DISTRICT NO 09 NAME OF PROJECT - AVOCA - NORTH GARFIELD (S) PROJECT ENGINEER - NOT APPLICABLE				
PIT/QUARRY - ARKANSAS LOCATION - BENTON COUNTY SAMPLED BY - D.KRAFT SAMPLE FROM - TESTHOLE MATERIAL DESC SOIL SURVEY - R VALUE- PAVE	DATE SAMPLED - 11/02/09 DATE RECEIVED - 11/09/09 DATE TESTED - 11/24/09 EMENT SOUNDINGS			
LAB NUMBER - 20093225 SAMPLE ID - S918	- 20093226 - 20093227 - S919 - S920 - INFORMATION ONLY - INFORMATION ONLY - 371+00 - 379+50 - 23'LT - 11'RT - 0-5 - 0-5 - RED - 0-5 - RED - RED - 36 26 49.10 - 36 26 49.10			
NO. 200 - 62 LIQUID LIMIT - 44 PLASTICITY INDEX - 26 AASHTO SOIL - A-7-6(13) UNIFIED SOIL - % MOISTURE CONTENT - 29.4 ACHM SURF (IN) ASPH TREAT BASE CRS (IN) 	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$			

- LOCATIONS MEASURED FROM CENTERLINE OF CONSTRUCTION

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ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT - LITTLE ROCK, ARKANSAS MATERIALS DIVISION			
MATERIALS DIVISION MICHAEL BENSON, MATERIALS ENGINEER			
	EY / PAVEMENT SOUNDING TEST		
DATE-12/07/09SEQUENCE NO26JOB NUMBER-090065MATERIAL CODE -SSRVPSFEDERAL AID NOTO BE ASSIGNEDSPEC. YEAR-2003PURPOSE-SOIL SURVEY SAMPLESUPPLIER ID1SPEC. REMARKS-NO SPECIFICATION CHECKCOUNTY/STATE-04SUPPLIER NAME-STATEDISTRICT NO09NAME OF PROJECT-AVOCA -NORTH GARFIELD (S)FROJECT ENGINEER-NOT APPLICABLE			
PIT/QUARRY - ARKANSAS LOCATION - BENTON COUNTY SAMPLED BY - D.KRAFT SAMPLE FROM - TESTHOLE		DATE SAMPLED - 11/02/09 DATE RECEIVED - 11/09/09 DATE TESTED - 11/24/09	
MATERIAL DESC SOIL SURVEY -	R VALUE- PAVEMENT SOUNDING		
LAB NUMBER- 2009SAMPLE ID- S921TEST STATUS- INFOSTATION- 379+LOCATION- 50'R	RMATION ONLY - INFORMATIO 50 ⁻ 387+00	- S923 N ONLY - INFORMATION ONLY - 387+00 - 29'LT	
DEPTH IN FEET - 0-5 MAT'L COLOR - RED MAT'L TYPE -	- 0-3.1Z _ RED	_ 0-5 _ RD/BR	
LATITUDE DEG-MIN-SEC - 36 LONGITUDE DEG-MIN-SEC - 94			
<pre>% PASSING 2 IN 1 1/2 IN 3/4 IN 3/8 IN NO. 4 - 100</pre>		- - - 100	
NO. 10 - 95 NO. 40 - 89	_ 92 _ 85	_ 92 _ 81	
NO. 80 - 84 NO. 200 - 77	- 82	- 76 70	
LIQUID LIMIT - 28 PLASTICITY INDEX - 10 AASHTO SOIL - A-4	- 48 - 31 (6) - A-7-6(23)	- 38 - 22 ⁻ A-6(13)	
UNIFIED SOIL - % MOISTURE CONTENT - 2	9.5 - 34.9	- - 31.0	
ACHM SURF (IN) -	- 6.5W	-	
ASPH TREAT BASE CRS (IN) AGG BASE CRS CL7 (IN)	- 2.5 - 4.0		
-	-	-	
		- -	

- LOCATIONS MEASURED FROM CENTERLINE OF CONSTRUCTION

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ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT - LITTLE ROCK, ARKANSAS MATERIALS DIVISION				
*** 5	MICHAEL BENSON, MAT SOIL SURVEY / PAVEMENT			
*** SOIL SURVEY / PAVEMENT SOUNDING TEST REPORT ***DATE- 12/07/09SEQUENCE NO 27JOB NUMBER- 090065MATERIAL CODE - SSRVPSFEDERAL AID NOTO BE ASSIGNEDSPEC. YEAR - 2003PURPOSE- SOIL SURVEY SAMPLESUPPLIER ID 1SPEC. REMARKS- NO SPECIFICATION CHECKCOUNTY/STATE - 04SUPPLIER NAME- STATEDISTRICT NO 09NAME OF PROJECT- AVOCA - NORTH GARFIELD (S)PROJECT ENGINEER - NOT APPLICABLEPIT/QUARRYPIT/QUARRY- ARKANSAS				
LOCATION - BENTON C SAMPLED BY - D.KRAFT SAMPLE FROM - TESTHOLE MATERIAL DESC SOIL S	OUNTY	DATE SAMPLED - 11/02/09 DATE RECEIVED - 11/09/09 DATE TESTED - 11/24/09		
	SURVEY - R VALUE- PAVE	MENT SOUNDINGS		
LAB NUMBER SAMPLE ID TEST STATUS	- S924	- 20093232 - 20093233 - S925 - S926 - INFORMATION ONLY - INFORMATION ONLY		
STATION LOCATION DEPTH IN FEET	- 395+40 - 12'RT - 0-5	- 395+40 - 403+00 - 42'RT - 11'LT - 0-5 - 0-5		
MAT'L COLOR MAT'L TYPE	- RED	RED RED		
LATITUDE DEG-MIN-SEC LONGITUDE DEG-MIN-SEC		- 36 26 48.80 - 36 26 48.10 93 59 51.40 93 59 42.40		
1 1/2 IN 3/4 IN 3/8 IN NO. 4 NO. 10	 . 100 - 95 - 85 - 81			
LIQUID LIMIT PLASTICITY INDEX AASHTO SOIL	- 22 - 8 - A-4(3)	- 29 - 22 - 11 - 7 - A-6(7) - A-4(2)		
UNIFIED SOIL % MOISTURE CONTENT	- 22.1	 - 29.9 - 17.5		
ACHM SURF (IN ASPH TREAT BASE CRS (IN	24-52 VEV-52 VEV	8.0W 2.0		
	-			
	-			
REMARKS - Z=AUGER REFU	SAL, W=MULTIPLE LAYERS	, X=STRIPPED		

UGER REFUSAL, W=MULTIPLE LAYERS, X=STRIPPED

- LOCATIONS MEASURED FROM CENTERLINE OF CONSTRUCTION -

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ARKANSAS STATE HI	GHWAY AND TRANSPORTATI MATERIALS		LITTLE ROCK, ARKANSAS
MICHAEL BENSON, MATERIALS ENGINEER			
*** S	SOIL SURVEY / PAVEMENT	SOUNDING TEST R	EPORT ***
DATE - 12/07/ JOB NUMBER - 090065 FEDERAL AID NO TO BE PURPOSE - SOIL S SPEC. REMARKS - NO SPE SUPPLIER NAME - STATE NAME OF PROJECT - AVOC PROJECT ENGINEER - NOT PIT/QUARRY - ARKANSAS	5 ASSIGNED SURVEY SAMPLE ECIFICATION CHECK CA - NORTH GARFIELD (S APPLICABLE	MÆ SE SU CO DI	QUENCE NO 28 TERIAL CODE - SSRVPS PEC. YEAR - 2003 UPPLIER ID 1 OUNTY/STATE - 04 SSTRICT NO 09
LOCATION - BENTON C		D2	ATE SAMPLED - 11/02/09
SAMPLED BY - D.KRAFT		DZ	ATE RECEIVED - 11/09/09
SAMPLE FROM - TESTHOLE MATERIAL DESC SOIL S			ATE TESTED - 11/24/09
LAB NUMBER			
SAMPLE ID	- 20093234 - S927		- 20093236 - S929
TEST STATUS	- INFORMATION ONLY	- INFORMATION C	ONLY - INFORMATION ONLY
STATION	- 403+00	- 411+00	- 411+00
LOCATION DEPTH IN FEET	- 45'LT - 0-5	- 10'RT - 0-5	- 50'RT - 0-5
	- RED -	_ RED	_ RED
	- 36 26 48.40		
	93 59 42.20	93 59 34.	00 93 59 34.20
% PASSING 2 IN l 1/2 IN	I	-	_
1 1/2 IN 3/4 IN		-	-
3/8 IN		-	-
	- 100	_ 100	100
	- 90 - 73	_ 86 _ 74	_ 96
NO. 80		- 74 - 66	_ 85 - 79
NO. 200		55	72
LIQUID LIMIT	- 29	- 23	- 27
PLASTICITY INDEX	- 13	- 7	- 8
AASHTO SOIL UNIFIED SOIL	- A-6(5)	- A-4(1) -	- A-4 (4)
% MOISTURE CONTENT	- 17.2	- 16.8	- 17.5
ACHM SURF (IN	4) -	- 8.0W	-
ACHM BINDER (IN	1)	- 3.0	
	-	-	-
	10 10		_
	-	-	-
		-	-
	-) -	-
		-	-

- LOCATIONS MEASURED FROM CENTERLINE OF CONSTRUCTION

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ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT - LITTLE ROCK, ARKANSAS MATERIALS DIVISION				
*** SC	MICHAEL BENSON, MA DIL SURVEY / PAVEMENT		RT ***	
DATE - 12/07/09 SEQUENCE NO 29 JOB NUMBER - 090065 MATERIAL CODE - SSRVPS FEDERAL AID NO TO BE ASSIGNED SPEC. YEAR - 2003 PURPOSE - SOIL SURVEY SAMPLE SUPPLIER ID 1 SPEC. REMARKS - NO SPECIFICATION CHECK COUNTY/STATE - 04 SUPPLIER NAME - STATE DISTRICT NO 09 NAME OF PROJECT - AVOCA - NORTH GARFIELD (S) PROJECT ENGINEER - NOT APPLICABLE PIT/QUARRY - ARKANSAS				
LOCATION - BENTON COUNTY			SAMPLED - 11/02/09	
SAMPLED BY - D. KRAFT			RECEIVED - 11/09/09	
SAMPLE FROM - TESTHOLE DATE TESTED - 11/24/09 MATERIAL DESC SOIL SURVEY - R VALUE- PAVEMENT SOUNDINGS				
LAB NUMBER	- 20093237		- 20093239	
SAMPLE ID	- 5930	- S931	- S932	
TEST STATUS	INFORMATION ONLY419+00	- INFORMATION ONLY	Y - INFORMATION ONLY	
	- 419+00 - 10'LT	- 419+00 - 44'LT	- 427+00 - 12'LT	
	- 0-5	- 0-2.0Z	0-22	
MAT'L COLOR MAT'L TYPE	- RED -	BROWN	_ BROWN	
LATITUDE DEG-MIN-SEC LONGITUDE DEG-MIN-SEC	- 36 26 39.90 - 93 59 25.50	- 36 26 40.10 93 59 25.30	- 36 26 37.80 93 59 16.50	
% PASSING 2 IN.		-	-	
1 1/2 IN.		-		
3/4 IN.		-	-	
3/8 IN. NO. 4		- 100	- 100	
		- 93	- 82	
NO. 10 NO. 40	- 95	90	_ 74	
NO. 80	- 93	- 88	- 71	
NO. 200	- 80	77	56	
LIQUID LIMIT		- 50	- 24	
	- 31	- 32	- 7	
AASHTO SOIL UNIFIED SOIL	- A-7-6(24)	- A-7-6(24) -	- A-4(1) -	
% MOISTURE CONTENT	- 23.6	- 26.9	- 13.6	
ACHM SURF (IN)	- 8.0W	-	- 7.OW	
ASPH TREAT BASE CRS (IN)	- 2.5		- 3.5	
ACHM SURF (IN)	- 2.5	-	-	
	-	-	-	
	-	3 0	-	
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- LOCATIONS MEASURED FROM CENTERLINE OF CONSTRUCTION

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ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT - LITTLE ROCK, ARKANSAS MATERIALS DIVISION			
MICHAEL BENSON, MATERIALS ENGINEER			
*** SOIL SURVEY / PAVEMENT SOUNDING TEST REPORT ***			
DATE-12/21/09SEQUENCE NO30JOB NUMBER-090065MATERIAL CODE-SSRVPSFEDERAL AID NOTO BE ASSIGNEDSPEC. YEAR-2003PURPOSE-SOIL SURVEY SAMPLESUPPLIER ID1SPEC. REMARKS-NO SPECIFICATION CHECKCOUNTY/STATE-04SUPPLIER NAME-STATEDISTRICT NO09NAME OF PROJECT-AVOCA - NORTH GARFIELD (S)PROJECT ENGINEER-NOT APPLICABLE11/02/09PIT/QUARRY-ARKANSAS-DATE SAMPLED-11/02/09SAMPLED BY-D.KRAFTDATE RECEIVED-11/09/09			
SAMPLE FROM - TESTHOLE DATE TESTED - 11/24/09 MATERIAL DESC SOIL SURVEY - R VALUE- PAVEMENT SOUNDINGS			
	- S934 - S935 - INFORMATION ONLY - INFORMATION ONLY - 435+00 - 443+00 - 11'RT - 10'LT - 0-5 - 0-1.5Z - BROWN - RED - 36 26 39.60 - 36 26 44.20		
LIQUID LIMIT - 35 PLASTICITY INDEX - 17 AASHTO SOIL - A-6(6) UNIFIED SOIL - % MOISTURE CONTENT - 14.8 ACHM SURF (IN) CHIP SEAL (IN) ACHM BINDER (IN) CHIP SEAL (IN) CHIP SEAL (IN) ASPH TREAT BASE CRS (IN) 	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$		

- LOCATIONS MEASURED FROM CENTERLINE OF CONSTRUCTION

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ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT - LITTLE ROCK, ARKANSAS MATERIALS DIVISION MICHAEL BENSON, MATERIALS ENGINEER *** SOIL SURVEY / PAVEMENT SOUNDING TEST REPORT *** DATE - 12/21/09 SEQUENCE NO. - 31 JOB NUMBER - 090065 MATERIAL CODE - SSRVPS FEDERAL AID NO. - TO BE ASSIGNED SPEC. YEAR - 2003 PURPOSE - SOIL SURVEY SAMPLE SUPPLIER ID. - 1 SPEC. REMARKS - NO SPECIFICATION CHECK COUNTY/STATE - 04 SUPPLIER NAME - STATE DISTRICT NO. - 09 NAME OF PROJECT - AVOCA - NORTH GARFIELD (S) PROJECT ENGINEER - NOT APPLICABLE PIT/QUARRY - ARKANSAS LOCATION - BENTON COUNTY DATE SAMPLED - 11/02/09 SAMPLED BY - D.KRAFT DATE RECEIVED - 11/09/09 SAMPLE FROM - TESTHOLE DATE TESTED - 11/24/09 MATERIAL DESC. - SOIL SURVEY - R VALUE- PAVEMENT SOUNDINGS LAB NUMBER - 20093244 - 20093243 SAMPLE ID - S936 - S937 TEST STATUS - INFORMATION ONLY - INFORMATION ONLY -- 443+00 - 443+00 STATION - 32'LT LOCATION - 20'LT - 0-5 - 0-5 - RED -DEPTH IN FEET _ RED MAT'L COLOR MAT'L TYPE -LATITUDE DEG-MIN-SEC - 36 26 44.20 - 36 26 44.30 LONGITUDE DEG-MIN-SEC - 93 58 59.00 93 58 59.00 % PASSING 2 IN. - $1 \ 1/2 \ IN. -$ 3/4 IN. -82 -3/8 IN. -_ 100 NO. 4 - 100 NO. 10 - 97 91 NO. 40 - 87 77 -- 71 NO. 80 - 82 NO. 200 - 75 65 - 28 LIQUID LIMIT - 29 PLASTICITY INDEX - 10 10 - A-4(4) AASHTO SOIL - A-4(6) UNIFIED SOIL % MOISTURE CONTENT - 21.7 -22.3 ACHM SURF (IN) - 6.25W ---_____ AGG BASE CRS CL7 (IN) -5.0 REMARKS - Z=AUGER REFUSAL, W=MULTIPLE LAYERS, X=STRIPPED - LOCATIONS MEASURED FROM CENTERLINE OF CONSTRUCTION

ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT - LITTLE ROCK, ARKANSAS MATERIALS DIVISION MICHAEL BENSON, MATERIALS ENGINEER *** SOIL SURVEY / PAVEMENT SOUNDING TEST REPORT *** DATE - 11/30/09 SEQUENCE NO. - 1 - 090065 JOB NUMBER MATERIAL CODE - RV FEDERAL AID NO.- TO BE ASSIGNED SPEC. YEAR - 2003 PURPOSE - SOIL SURVEY SAMPLE SUPPLIER ID. - 1 SPEC. REMARKS - NO SPECIFICATION CHECK COUNTY/STATE - 04 SUPPLIER NAME - STATE DISTRICT NO. - 09 NAME OF PROJECT - AVOCA - NORTH GARFIELD (S) PROJECT ENGINEER - NOT APPLICABLE PIT/QUARRY - ARKANSAS LOCATION - BENTON COUNTY DATE SAMPLED - 11/02/09 SAMPLED BY - D.KRAFT DATE RECEIVED - 11/09/09 SAMPLE FROM - TESTHOLE DATE TESTED - 11/24/09 MATERIAL DESC. - SOIL SURVEY - RESISTANCE R-VALUE ACTUAL RESULTS - 20093245 - 20093246 - RV938 _ RV939 LAB NUMBER - 20093247 _ RV939 SAMPLE ID - RV938 - RV940 TEST STATUS - INFORMATION ONLY - INFORMATION ONLY - INFORMATION ONLY - 155+00 - 235+00 - 56'RT - 50'RT - 395+40 STATION - 42'RT LOCATION DEPTH IN FEET --____RED -RED - RED MAT'L COLOR MAT'L TYPE -LATITUDE DEG-MIN-SEC --LONGITUDE DEG-MIN-SEC -% PASSING 2 IN. -- $1 \ 1/2 \ IN. -$ -3/4 IN. -3/8 IN. -_ 100 NO. 4 - 100 100 NO. 10 - 99 95 95 NO. 40 - 97 89 89 - 82 NO. 80 -93 83 -NO. 200 - 78 78 78 LIQUID LIMIT - 27 - 33 - 35 PLASTICITY INDEX - 8 16 20 _ - A-4(5) AASHTO SOIL A-6(13) A-6(11) UNIFIED SOIL % MOISTURE CONTENT -_ REMARKS - Z=AUGER REFUSAL, W=MULTIPLE LAYERS, X=STRIPPED

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