

ARKANSAS DEPARTMENT OF TRANSPORTATION



**SUBSURFACE INVESTIGATION**

STATE JOB NO. 061309

FEDERAL AID PROJECT NO. HSIP-3026(1)

MITZI PKWY. - HWY. 290 (SAFETY IMPVTS.) (SEL. SECS.) (S)

STATE HIGHWAY 7 SECTION 8 & 9

IN GARLAND & HOT SPRING 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

February 12, 2016

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

**SUBJECT:** Job No. 061309  
Mitzi Pkwy. – Hwy. 290 (Safety Impvts.)(Sel. Secs.) (S)  
Route 7 Sections 8 & 9  
Hot Spring and Garland Counties

Transmitted herewith are the requested Soil Survey, Strength Data, and Resilient Modulus test results for the above referenced job. The project consists of making safety improvements to approximately 3.9 miles of Highway 7. Samples were obtained in the existing travel lanes, shoulders and ditch line. Sample locations were measured from centerline of the existing roadway and should be noted as such on the logs.

Based on laboratory results of samples obtained, the subgrade soils consist primarily of low plasticity clayey sands with varying amounts of gravel and shale fragments. The subgrade soils are expected to provide a stable working platform with conventional processing if the weather is favorable during construction. Rock was encountered at several locations within the project limits. Table 1 below lists the location and depth to rock.

Table 1- Depth to Rock

Station	Location from Centerline	Depth (ft.)
118+00	6' Rt	3.5
304+00	20' Lt	4.0
310+00	24' Rt	4.0
328+00	6' Lt	3.5
344+00	6', 20' Lt	3.5, 4.0
360+00	14', 20' Rt	4.5, 4.0
384+00	6', 14' Lt	4.0, 4.5

Standing water was encountered between stations 367+50 to 369+50, 30' left of centerline. The embankment height is approximately five feet. It is recommended that a geotextile fabric (Type 10) be installed in the footprint of the embankment. Two feet of material meeting the minimum requirements of Stone Backfill should be placed on top of the fabric. The remainder of the embankment may be constructed with locally available unspecified material. This configuration is demonstrated in Figure 1.

Based on currently available cross-sections between stations 285+00 to 286+00 and 311+00 to 316+50 are embankment heights of approximately 27 feet and 22 feet respectively. Rock from the cut slopes within the project limits may be used in embankment construction utilizing a 2:1 slope configuration, if the slopes are plated with dumped rip rap. The remaining embankments may be constructed with locally available material using a 3:1 slope configuration.

The existing cut slopes within the project limits have small trees and vines growing within the existing fractures, however the rock appeared to be competent. The cut slopes may be steepened to a 2:1 configuration at the following locations: 261+00 - 262+88, 264+00 - 269+72,

276+50 - 279+50, 283+00 - 285+00, and 371+50 - 372+50. The remaining cut slopes should be constructed on a 3:1 slope configuration.

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

<b>PG 64-22</b>		
<b>Type</b>	<b>Asphalt Cement %</b>	<b>Mineral Aggregate %</b>
Surface Course	4.9	95.1
Binder Course	4.1	95.9
Base Course	3.8	96.2

<b>PG 70-22</b>		
<b>Type</b>	<b>Asphalt Cement %</b>	<b>Mineral Aggregate %</b>
Surface Course	4.8	95.2
Binder Course	4.1	95.9
Base Course	3.8	96.2

<b>PG 76-22</b>		
<b>Type</b>	<b>Asphalt Cement %</b>	<b>Mineral Aggregate %</b>
Surface Course	4.8	95.2
Binder Course	4.2	95.8
Base Course	3.8	96.2



Michael C. Benson  
Materials Engineer

MCB:pt:bjj  
Attachment

cc: State Constr. Eng. – Master File Copy  
District 6 Engineer  
System Information and Research Div.  
G. C. File

Embankments between Sta. 367+50 to 369+50 Lt. should be constructed of Stone Backfill from elevation 446.5 to 448.5.

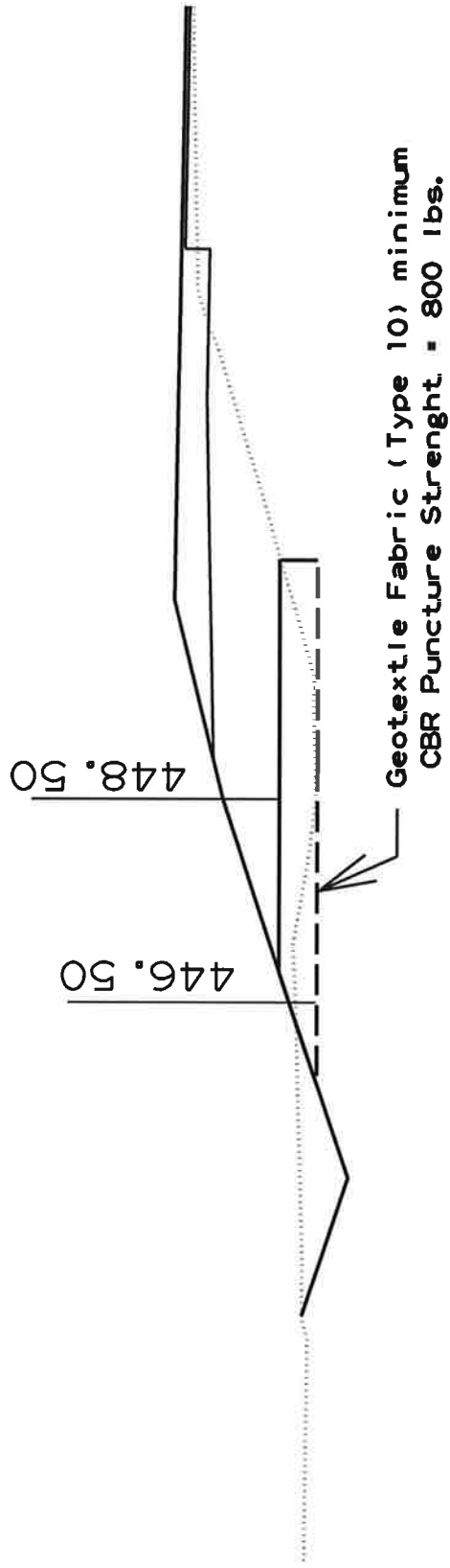


Figure 1 - Embankment Detail

ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT - LITTLE ROCK, ARKANSAS  
MATERIALS DIVISION  
MICHAEL BENSON, MATERIALS ENGINEER  
\*\*\* SOIL SURVEY STRENGTH TEST REPORT \*\*\*

DATE - 02/12/2016  
JOB NUMBER - 061309

SEQUENCE NO. - 1  
MATERIAL CODE - SSRVPS  
SPEC. YEAR - 2014  
SUPPLIER ID. - 1  
COUNTY/STATE - 76  
DISTRICT NO. - XX

JOB NAME - MITZI PKWY.- HWY. 290 (SAFETY IMPVTS.)

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

BEGIN JOB - END JOB 26

RESILIENT MODULUS  
STA.101+00 8394  
STA.368+00 7923  
STA.424+00 4920

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REMARKS -

AASHTO TESTS : T190

**ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT  
MATERIALS DIVISION**

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

<b>Job No.</b>	061309	<b>Material Code</b>	SSRVPS
<b>Date Sampled:</b>	11/25/15	<b>Station No.:</b>	424+00
<b>Date Tested:</b>	January 27, 2016	<b>Location:</b>	20' LT
<b>Name of Project:</b>	MITZI PKWY. - HWY 290 (SAFETY IMPVTS)		
<b>County:</b>	<b>Code:</b> 30	<b>Name:</b>	HOT SPRINGS
<b>Sampled By:</b>	D. DICKERSON	<b>Depth:</b>	0-5
<b>Lab No.:</b>	20154031	<b>AASHTO Class:</b>	A-4 (4)
<b>Sample ID:</b>	RV864	<b>Material Type (1 or 2):</b>	2
<b>LATITUDE:</b>		<b>LONGITUDE:</b>	

**1. Testing Information:**

Preconditioning - Permanent Strain > 5% (Y=Yes or N= No)	N
Testing - Permanent Strain > 5% (Y=Yes or N=No)	N
Number of Load Sequences Completed (0-15)	15

**2. Specimen Information:**

Specimen Diameter (in):	
Top	3.97
Middle	3.96
Bottom	3.96
Average	3.96
Membrane Thickness (in):	0.00
Height of Specimen, Cap and Base (in):	8.03
Height of Cap and Base (in):	0.00
Initial Length, Lo (in):	8.03
Initial Area, Ao (sq. in):	12.34
Initial Volume, AoLo (cu. in):	99.07

**3. Soil Specimen Weight:**

Weight of Wet Soil Used (g):	3188.40
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**4. Soil Properties:**

Optimum Moisture Content (%):	16.3
Maximum Dry Density (pcf):	109.2
95% of MDD (pcf):	103.7
In-Situ Moisture Content (%):	N/A

**5. Specimen Properties:**

Wet Weight (g):	3188.40
Compaction Moisture content (%):	16.0
Compaction Wet Density (pcf):	122.63
Compaction Dry Density (pcf):	105.72
Moisture Content After Mr Test (%):	15.6

**6. Quick Shear Test (Y=Yes, N=No, N/A=Not Applicable):** #VALUE!

**7. Resilient Modulus, Mr:**  $6604(S_c)^{-0.32639}(S_3)^{0.47113}$

**8. Comments** \_\_\_\_\_

**9. Tested By:** GW **Date:** January 27, 2016

**ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT  
MATERIALS DIVISION**

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

**Job No.** 061309      **Material Code** SSRVPS  
**Date Sampled:** 11/25/15      **Station No.:** 424+00  
**Date Tested:** January 27, 2016      **Location:** 20' LT  
**Name of Project:** MITZI PKWY. - HWY 290 (SAFETY IMPVTS)  
**County:** Code: 30      **Name:** HOT SPRINGS  
**Sampled By:** D. DICKERSON      **Depth:** 0-5  
**Lab No.:** 20154031      **AASHTO Class:** A-4 (4)  
**Sample ID:** RV864      **Material Type (1 or 2):** 2  
**LATTITUDE:** **LONGITUDE:**

PARAMETER	Chamber Confining Pressure	Nominal Maximum Axial Stress	Actual Applied Max. Axial Load	Actual Applied Cyclic Load	Actual Applied Contact Load	Actual Applied Max. Axial Stress	Actual Applied Cyclic Stress	Actual Applied Contact Stress	Average Recov Def. LVDT 1 and 2	Resilient Strain	Resilient Modulus
DESIGNATION	S <sub>3</sub>	S <sub>cyclic</sub>	P <sub>max</sub>	P <sub>cyclic</sub>	P <sub>contact</sub>	S <sub>max</sub>	S <sub>cyclic</sub>	S <sub>contact</sub>	H <sub>avg</sub>	ε <sub>r</sub>	M <sub>r</sub>
UNIT	psi	psi	lbs	lbs	lbs	psi	psi	psi	in	in/in	psi
Sequence 1	6.0	2.0	25.3	22.6	2.7	2.0	1.8	0.2	0.00121	0.00015	12,185
Sequence 2	6.0	4.0	47.7	45.0	2.7	3.9	3.6	0.2	0.00276	0.00034	10,620
Sequence 3	6.0	6.0	70.1	66.4	3.7	5.7	5.4	0.3	0.00461	0.00057	9,390
Sequence 4	6.0	8.0	92.9	86.8	6.1	7.5	7.0	0.5	0.00696	0.00087	8,109
Sequence 5	6.0	10.0	116.0	107.3	8.7	9.4	8.7	0.7	0.00917	0.00114	7,621
Sequence 6	4.0	2.0	25.1	22.3	2.8	2.0	1.8	0.2	0.00147	0.00018	9,870
Sequence 7	4.0	4.0	47.0	44.2	2.8	3.8	3.6	0.2	0.00332	0.00041	8,665
Sequence 8	4.0	6.0	67.6	64.7	2.9	5.5	5.2	0.2	0.00597	0.00074	7,045
Sequence 9	4.0	8.0	90.5	85.1	5.4	7.3	6.9	0.4	0.00861	0.00107	6,436
Sequence 10	4.0	10.0	113.4	105.7	7.7	9.2	8.6	0.6	0.01100	0.00137	6,256
Sequence 11	2.0	2.0	24.6	21.8	2.8	2.0	1.8	0.2	0.00170	0.00021	8,343
Sequence 12	2.0	4.0	44.6	41.7	2.9	3.6	3.4	0.2	0.00460	0.00057	5,898
Sequence 13	2.0	6.0	64.1	61.2	2.9	5.2	5.0	0.2	0.00777	0.00097	5,123
Sequence 14	2.0	8.0	85.8	81.2	4.6	7.0	6.6	0.4	0.01083	0.00135	4,879
Sequence 15	2.0	10.0	108.7	101.6	7.1	8.8	8.2	0.6	0.01344	0.00167	4,920

TESTED BY \_\_\_\_\_ DATE January 27, 2016  
 REVIEWED BY \_\_\_\_\_ DATE \_\_\_\_\_

**ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT  
MATERIALS DIVISION**

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

<b>Job No.</b>	061309	<b>Material Code</b>	SSRVPS
<b>Date Sampled:</b>	11/25/15	<b>Station No.:</b>	424+00
<b>Date Tested:</b>	January 27, 2016	<b>Location:</b>	20' LT
<b>Name of Project:</b>	MITZI PKWY. - HWY 290 (SAFETY IMPVTS)		
<b>County:</b>	<b>Code:</b> 30	<b>Name:</b>	HOT SPRINGS
<b>Sampled By:</b>	D. DICKERSON		<b>Depth:</b> 0-5
<b>Lab No.:</b>	20154031	<b>AASHTO Class:</b>	A-4 (4)
<b>Sample ID:</b>	RV864	<b>Material Type (1 or 2):</b>	2
<b>LATITUDE:</b>		<b>LONGITUDE:</b>	

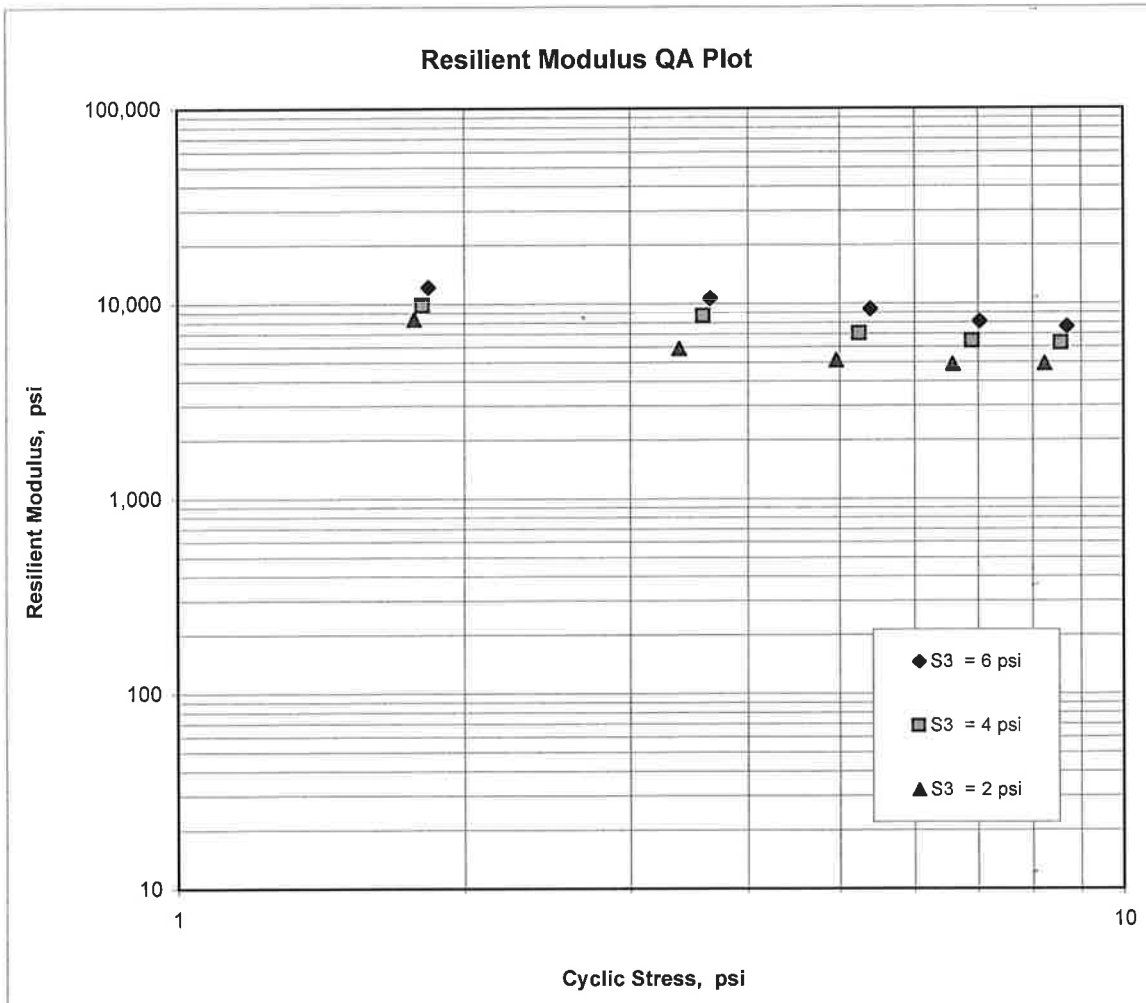
$$M_R = K_1 (S_C)^{K_2} (S_3)^{K_5}$$

$$K_1 = 6,604$$

$$K_2 = -0.32639$$

$$K_5 = 0.47113$$

$$R^2 = 0.97$$





**ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT  
MATERIALS DIVISION**

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

<b>Job No.</b>	061309	<b>Material Code</b>	SSRVPS	
<b>Date Sampled:</b>	11/25/15	<b>Station No.:</b>	368+00	
<b>Date Tested:</b>	January 27, 2016	<b>Location:</b>	20' LT	
<b>Name of Project:</b>	MITZI PKWY. - HWY 290 (SAFETY IMPVTS)			
<b>County:</b>	<b>Code:</b> 30	<b>Name:</b>	HOT SPRINGS	
<b>Sampled By:</b>	D. DICKERSON		<b>Depth:</b>	0-5
<b>Lab No.:</b>	20154030	<b>AASHTO Class:</b>	A-4 (1)	
<b>Sample ID:</b>	RV863	<b>Material Type (1 or 2):</b>	2	
<b>LATITUDE:</b>		<b>LONGITUDE:</b>		

**1. Testing Information:**

Preconditioning - Permanent Strain > 5% (Y=Yes or N= No)	N
Testing - Permanent Strain > 5% (Y=Yes or N=No)	N
Number of Load Sequences Completed (0-15)	15

**2. Specimen Information:**

Specimen Diameter (in):	
Top	3.97
Middle	3.97
Bottom	3.97
Average	3.97
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):	12.38
Initial Volume, AoLo (cu. in):	99.28

**3. Soil Specimen Weight:**

Weight of Wet Soil Used (g):	3105.40
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**4. Soil Properties:**

Optimum Moisture Content (%):	15.4
Maximum Dry Density (pcf):	110.2
95% of MDD (pcf):	104.7
In-Situ Moisture Content (%):	N/A

**5. Specimen Properties:**

Wet Weight (g):	3105.40
Compaction Moisture content (%):	15.1
Compaction Wet Density (pcf):	119.19
Compaction Dry Density (pcf):	103.55
Moisture Content After Mr Test (%):	15.2

**6. Quick Shear Test (Y=Yes, N=No, N/A=Not Applicable):** #VALUE!

**7. Resilient Modulus, Mr:** 12184(Sc)<sup>-0.26457</sup>(S3)<sup>0.29159</sup>

**8. Comments**

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**9. Tested By:** GW **Date:** January 27, 2016

**ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT  
MATERIALS DIVISION**

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

**Job No.** 061309      **Material Code** SSRVPS  
**Date Sampled:** 11/25/15      **Station No.:** 368+00  
**Date Tested:** January 27, 2016      **Location:** 20' LT

**Name of Project:** MITZI PKWY. - HWY 290 (SAFETY IMPVTS)

**County:** Code: 30      **Name:** HOT SPRINGS

**Sampled By:** D. DICKERSON  
**Lab No.:** 20154030  
**Sample ID:** RV863

**Depth:** 0-5  
**AAASHTO Class:** A-4 (1)  
**Material Type (1 or 2):** 2  
**LONGITUDE:**

PARAMETER	Chamber Confining Pressure	Nominal Maximum Axial Stress	Actual Applied Max. Axial Load	Actual Applied Cyclic Load	Actual Applied Contact Load	Actual Applied Max. Axial Stress	Actual Applied Cyclic Stress	Actual Applied Contact Stress	Average Recov Def. LVDT 1 and 2	Resilient Strain	Resilient Modulus
	S <sub>3</sub> psi	S <sub>cyclic</sub> psi	P <sub>max</sub> lbs	P <sub>cyclic</sub> lbs	P <sub>contact</sub> lbs	S <sub>max</sub> psi	S <sub>cyclic</sub> psi	S <sub>contact</sub> psi	H <sub>avg</sub> in	ε <sub>r</sub> in/in	M <sub>r</sub> psi
Sequence 1	6.0	2.0	25.3	22.6	2.7	2.0	1.8	0.2	0.00088	0.00011	16,619
Sequence 2	6.0	4.0	47.9	45.1	2.8	3.9	3.6	0.2	0.00187	0.00023	15,651
Sequence 3	6.0	6.0	70.8	67.1	3.8	5.7	5.4	0.3	0.00309	0.00038	14,075
Sequence 4	6.0	8.0	94.3	87.9	6.4	7.6	7.1	0.5	0.00467	0.00058	12,188
Sequence 5	6.0	10.0	117.3	108.5	8.8	9.5	8.8	0.7	0.00626	0.00078	11,224
Sequence 6	4.0	2.0	25.4	22.6	2.8	2.1	1.8	0.2	0.00098	0.00012	14,990
Sequence 7	4.0	4.0	47.4	44.5	2.9	3.8	3.6	0.2	0.00219	0.00027	13,200
Sequence 8	4.0	6.0	68.7	65.8	2.9	5.6	5.3	0.2	0.00363	0.00045	11,746
Sequence 9	4.0	8.0	91.8	86.4	5.4	7.4	7.0	0.4	0.00527	0.00066	10,634
Sequence 10	4.0	10.0	115.3	107.3	8.0	9.3	8.7	0.6	0.00698	0.00087	9,965
Sequence 11	2.0	2.0	25.1	22.3	2.8	2.0	1.8	0.2	0.00113	0.00014	12,809
Sequence 12	2.0	4.0	46.8	44.0	2.8	3.8	3.6	0.2	0.00257	0.00032	11,076
Sequence 13	2.0	6.0	67.5	64.5	2.9	5.4	5.2	0.2	0.00429	0.00053	9,750
Sequence 14	2.0	8.0	88.9	84.3	4.6	7.2	6.8	0.4	0.00615	0.00077	8,871
Sequence 15	2.0	10.0	111.4	104.3	7.1	9.0	8.4	0.6	0.00805	0.00100	8,394

TESTED BY \_\_\_\_\_  
 REVIEWED BY \_\_\_\_\_

GW \_\_\_\_\_  
 DATE \_\_\_\_\_

DATE January 27, 2016  
 DATE \_\_\_\_\_

**ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT  
MATERIALS DIVISION**

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

<b>Job No.</b>	061309	<b>Material Code</b>	SSRVPS
<b>Date Sampled:</b>	11/25/15	<b>Station No.:</b>	368+00
<b>Date Tested:</b>	January 27, 2016	<b>Location:</b>	20' LT
<b>Name of Project:</b>	MITZI PKWY. - HWY 290 (SAFETY IMPVTS)		
<b>County:</b>	<b>Code:</b> 30	<b>Name:</b>	HOT SPRINGS
<b>Sampled By:</b>	D. DICKERSON	<b>Depth:</b>	0-5
<b>Lab No.:</b>	20154030	<b>AASHTO Class:</b>	A-4 (1)
<b>Sample ID:</b>	RV863	<b>Material Type (1 or 2):</b>	2
<b>LATITUDE:</b>		<b>LONGITUDE:</b>	

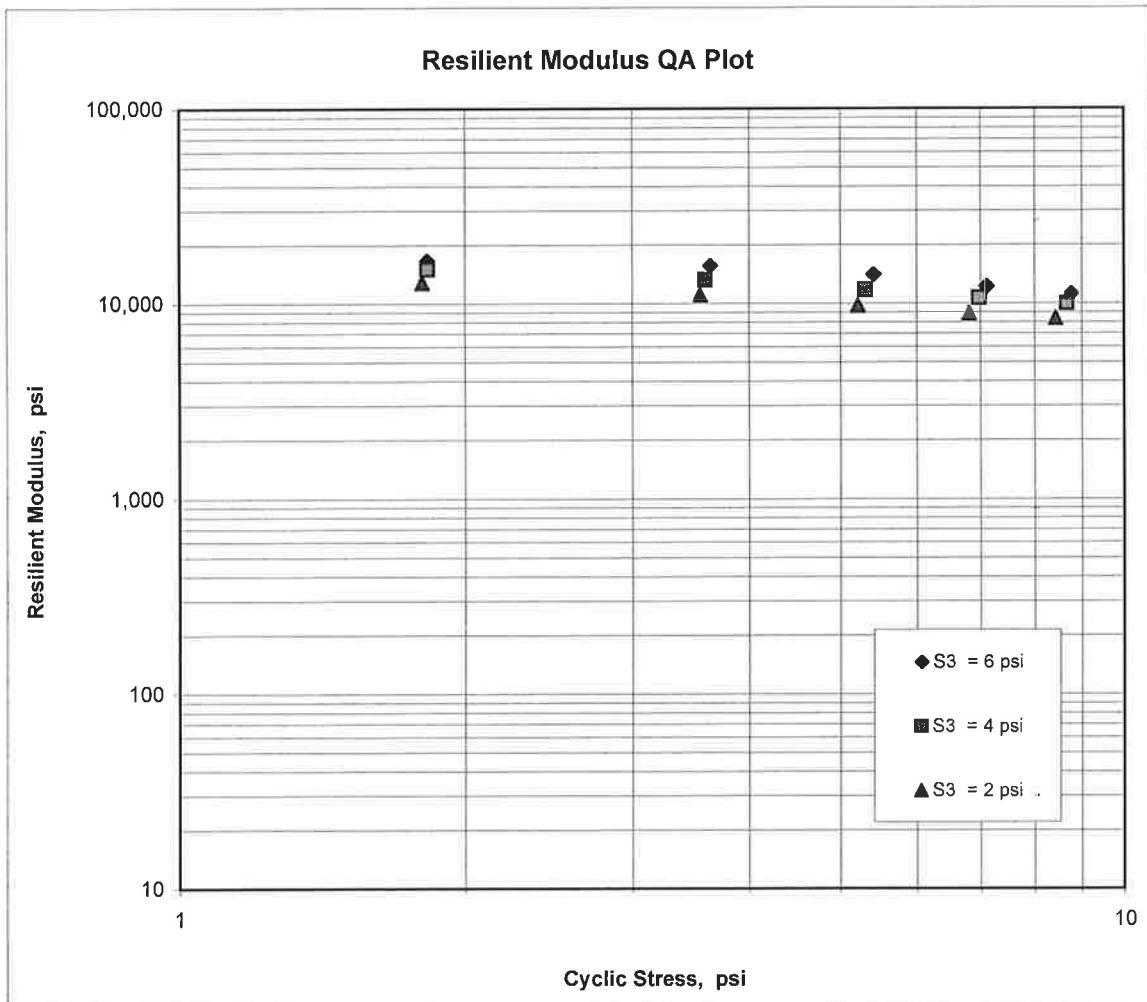
$$M_R = K_1 (S_c)^{K_2} (S_3)^{K_5}$$

$$K_1 = 12,184$$

$$K_2 = -0.26457$$

$$K_5 = 0.29159$$

$$R^2 = 0.97$$



**ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT  
MATERIALS DIVISION**

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

<b>Job No.</b>	061309	<b>Material Code</b>	SSRVPS
<b>Date Sampled:</b>	11/25/15	<b>Station No.:</b>	101+00
<b>Date Tested:</b>	January 26, 2016	<b>Location:</b>	22'RT'
<b>Name of Project:</b>	MITZI PKWY. - HWY.290 (SAFETY IMPVTS)		
<b>County:</b>	<b>Code:</b> 30	<b>Name:</b>	HOT SPRINGS
<b>Sampled By:</b>	D. DICKERSON	<b>Depth:</b>	0-5
<b>Lab No.:</b>	20154029	<b>AASHTO Class:</b>	A-4 (0)
<b>Sample ID:</b>	RV862	<b>Material Type (1 or 2):</b>	2
<b>LATITUDE:</b>		<b>LONGITUDE:</b>	

**1. Testing Information:**

Preconditioning - Permanent Strain > 5% (Y=Yes or N= No)	N
Testing - Permanent Strain > 5% (Y=Yes or N=No)	N
Number of Load Sequences Completed (0-15)	15

**2. Specimen Information:**

Specimen Diameter (in):	
Top	3.94
Middle	3.99
Bottom	3.95
Average	3.96
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):	12.32
Initial Volume, AoLo (cu. in):	98.78

**3. Soil Specimen Weight:**

Weight of Wet Soil Used (g):	3279.30
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**4. Soil Properties:**

Optimum Moisture Content (%):	13.3
Maximum Dry Density (pcf):	115.5
95% of MDD (pcf):	109.7
In-Situ Moisture Content (%):	N/A

**5. Specimen Properties:**

Wet Weight (g):	3279.30
Compaction Moisture content (%):	13.2
Compaction Wet Density (pcf):	126.50
Compaction Dry Density (pcf):	111.75
Moisture Content After Mr Test (%):	12.9

**6. Quick Shear Test (Y=Yes, N=No, N/A=Not Applicable):** #VALUE!

**7. Resilient Modulus, Mr:** 12618(Sc)<sup>-0.31902</sup>(S3)<sup>0.30432</sup>

**8. Comments**

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**9. Tested By:** GW **Date:** January 26, 2016

**ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT  
MATERIALS DIVISION**

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

**Job No.** 061309      **Material Code** SSRVPS  
**Date Sampled:** 11/25/15      **Station No.:** 101+00  
**Date Tested:** January 26, 2016      **Location:** 22RT

**Name of Project:** MITZI PKWY. - HWY.290 (SAFETY IMPVTS)

**County:** Code: 30      **Name:** HOT SPRINGS

**Sampled By:** D. DICKERSON

**Lab No.:** 20154029

**Sample ID:** RV862

**LATTITUDE:**

**Depth:** 0-5

**AASHTO Class:** A-4 (0)

**Material Type (1 or 2):** 2  
**LONGITUDE:**

PARAMETER	Chamber Confining Pressure	Nominal Maximum Axial Stress	Actual Applied Max. Axial Load	Actual Applied Cyclic Load	Actual Applied Contact Load	Actual Applied Max. Axial Stress	Actual Applied Cyclic Stress	Actual Applied Contact Stress	Average Recov Def. LVDT 1 and 2	Resilient Strain	Resilient Modulus
	S <sub>3</sub> psi	S <sub>cyclic</sub> psi	P <sub>max</sub> lbs	P <sub>cyclic</sub> lbs	P <sub>contact</sub> lbs	S <sub>max</sub> psi	S <sub>cyclic</sub> psi	S <sub>contact</sub> psi	H <sub>avg</sub> in	ε <sub>r</sub> in/in	M <sub>r</sub> psi
Sequence 1	6.0	2.0	25.4	22.6	2.8	2.1	1.8	0.2	0.00087	0.00011	16,919
Sequence 2	6.0	4.0	47.5	44.6	2.8	3.9	3.6	0.2	0.00193	0.00024	15,095
Sequence 3	6.0	6.0	70.3	66.5	3.7	5.7	5.4	0.3	0.00319	0.00040	13,584
Sequence 4	6.0	8.0	93.6	87.4	6.2	7.6	7.1	0.5	0.00485	0.00061	11,725
Sequence 5	6.0	10.0	116.4	107.6	8.8	9.4	8.7	0.7	0.00649	0.00081	10,799
Sequence 6	4.0	2.0	25.4	22.6	2.8	2.1	1.8	0.2	0.00094	0.00012	15,593
Sequence 7	4.0	4.0	47.1	44.2	2.9	3.8	3.6	0.2	0.00223	0.00028	12,931
Sequence 8	4.0	6.0	67.9	65.1	2.9	5.5	5.3	0.2	0.00380	0.00047	11,160
Sequence 9	4.0	8.0	91.2	85.8	5.4	7.4	7.0	0.4	0.00556	0.00069	10,039
Sequence 10	4.0	10.0	114.6	106.7	7.9	9.3	8.7	0.6	0.00739	0.00092	9,399
Sequence 11	2.0	2.0	25.0	22.3	2.7	2.0	1.8	0.2	0.00110	0.00014	13,151
Sequence 12	2.0	4.0	46.4	43.6	2.8	3.8	3.5	0.2	0.00265	0.00033	10,722
Sequence 13	2.0	6.0	66.5	63.7	2.8	5.4	5.2	0.2	0.00452	0.00056	9,167
Sequence 14	2.0	8.0	87.8	83.3	4.5	7.1	6.8	0.4	0.00652	0.00081	8,322
Sequence 15	2.0	10.0	110.6	103.6	7.0	9.0	8.4	0.6	0.00852	0.00106	7,923

TESTED BY \_\_\_\_\_  
 REVIEWED BY \_\_\_\_\_

GW \_\_\_\_\_  
 DATE \_\_\_\_\_

DATE January 26, 2016  
 DATE \_\_\_\_\_

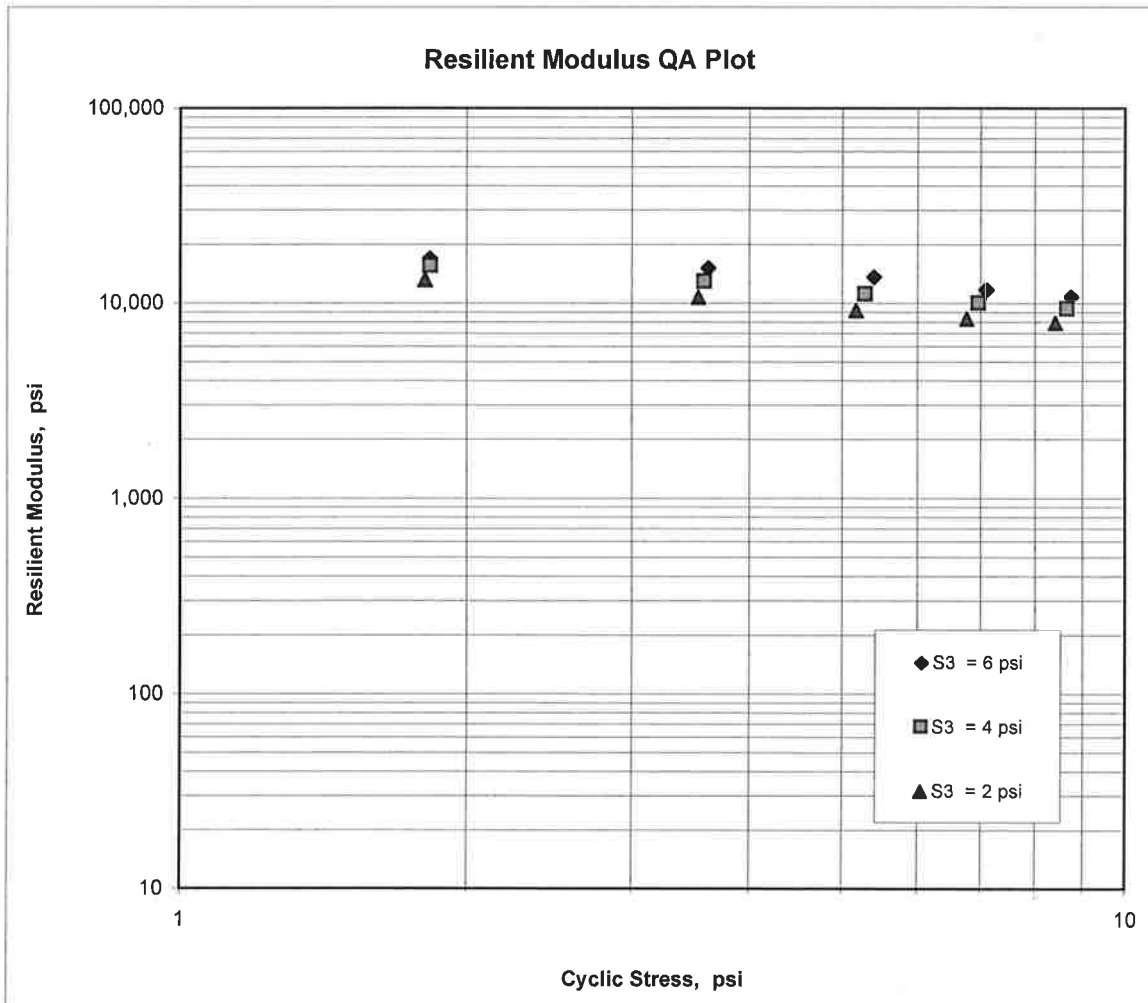
**ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT  
MATERIALS DIVISION**

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

<b>Job No.</b>	061309	<b>Material Code</b>	SSRVPS
<b>Date Sampled:</b>	11/25/15	<b>Station No.:</b>	101+00
<b>Date Tested:</b>	January 26, 2016	<b>Location:</b>	22'RT
<b>Name of Project:</b>	MITZI PKWY. - HWY.290 (SAFETY IMPVTS)		
<b>County:</b>	<b>Code:</b> 30	<b>Name:</b>	HOT SPRINGS
<b>Sampled By:</b>	D. DICKERSON		<b>Depth:</b> 0-5
<b>Lab No.:</b>	20154029	<b>AASHTO Class:</b>	A-4 (0)
<b>Sample ID:</b>	RV862	<b>Material Type (1 or 2):</b>	2
<b>LATITUDE:</b>		<b>LONGITUDE:</b>	

$$M_R = K_1 (S_C)^{K_2} (S_3)^{K_5}$$

K1 =	12,618
K2 =	-0.31902
K5 =	0.30432
R <sup>2</sup> =	0.98



JOB: 061309

Arkansas State Highway Transportation Department

JOB NAME: MITZI PKWY.- HWY. 290 (SAFETY IMPVTS.)

Materials Division

Michael Benson, Materials Engineer

COUNTY NO. 76 DATE TESTED 12/16/2015

STA.#	LOC.	DEPTH	COLOR	#4	#10	#40	#80	#200	L.L.	P.I.	SOIL CLASS	LAB #:	%MOISTURE
				S	I	E	V	E					
101+00	22' RT	0-5	BROWN	83	75	66	58	39	22	03	A-4(0)	RV862	
368+00	20' LT	0-5	BROWN	65	59	49	45	41	29	09	A-4(1)	RV863	
424+00	20' LT	0-5	BROWN	90	86	82	79	74	26	08	A-4(4)	RV864	
101+00	06' RT	0-5	BROWN	99	98	97	87	57	ND	NP	A-4(0)	S796	13.3
101+00	15' RT	0-5	BROWN	97	94	91	79	54	20	05	A-4(0)	S797	15.1
101+00	22' RT	0-5	BROWN	95	90	84	78	61	26	11	A-6(4)	S798	11.1
109+00	06' LT	0-5	BROWN	99	98	95	88	75	29	13	A-6(8)	S799	13.8
109+00	15' LT	0-5	BROWN	98	93	84	77	63	34	19	A-6(9)	S800	10.7
109+00	22' LT	0-5	BROWN	98	92	83	70	50	18	04	A-4(0)	S801	15.3
118+00	06' RT	0-3.5	BR/GR	97	93	93	79	59	ND	NP	A-4(0)	S802	12.2
118+00	15' RT	0-5	BROWN	93	86	79	69	50	18	03	A-4(0)	S803	16.7
118+00	22' RT	0-5	BROWN	91	85	78	69	49	ND	NP	A-4(0)	S804	17.2
248+00	06' RT	0-5	BROWN	65	44	32	28	24	26	11	A-2-6(0)	S805	10.3
248+00	14' RT	0-5	BROWN	67	48	35	30	27	26	10	A-2-4(0)	S806	15.1
248+00	20' RT	0-5	BROWN	52	39	30	25	21	ND	NP	A-1-B(0)	S807	16.4
256+00	06' LT	0-5	BROWN	75	59	47	43	38	33	13	A-6(1)	S808	13.1
256+00	20' LT	0-5	BR/GR	92	79	59	49	42	26	09	A-4(1)	S809	13.9
265+00	06' RT	0-5	BROWN	78	64	46	40	36	30	11	A-6(0)	S810	18.3
265+00	14' RT	0-5	BROWN	86	65	45	39	34	27	09	A-2-4(0)	S811	11.3
265+00	20' RT	0-5	BROWN	40	26	19	17	15			A-1-A(0)	S812	9.6
272+00	06' LT	0-5	BROWN	88	73	57	52	46	30	12	A-6(2)	S813	14.5
272+00	20' LT	0-5	BROWN	93	84	71	66	61	37	14	A-6(7)	S815	16.9
281+00	06' RT	0-5	RD/BR	97	90	80	76	71	32	10	A-4(6)	S816	19.8
281+00	14' RT	0-5	RD/BR	94	84	73	69	63	30	11	A-6(5)	S817	10.1
281+00	20' RT	0-5	BROWN	75	67	57	52	47	26	08	A-4(1)	S818	17.2
288+00	06' LT	0-5	BROWN	92	88	79	74	68	39	17	A-6(10)	S819	15.3

comments: W=MULTIPLE LAYERS, X=STRIPPED, Z=AUGER REFUSAL  
LOCATIONS MEASURED FROM C.L. OF EXISTING RDWY.

Thursday, January 28, 2016

STA.#	LOC.	DEPTH	COLOR	#4	#10	#40	#80	#200	L.L.	P.I.	SOIL CLASS	LAB #:	%MOISTURE
				S	I	E	V	E					
288+00	14' LT	0-5	BROWN	99	93	79	71	64	37	15	A-6(8)	S820	11
288+00	20' LT	0-5	GRAY	99	98	93	90	80	31	13	A-6(9)	S821	10.8
296+00	06' RT	0-5	BROWN	96	83	63	55	49	31	10	A-4(2)	S822	8.5
296+00	14' RT	0-5	BROWN	89	73	51	44	39	29	09	A-4(0)	S823	9.4
296+00	20' RT	0-5	BROWN	77	54	35	29	25	28	08	A-2-4 (0)	S824	7.1
304+00	06' LT	0-5	BROWN	94	78	53	45	39	27	08	A-4 (0)	S825	6
304+00	14' LT	0-5	BROWN	47	29	19	16	14	30	10	A-2-4 (0)	S826	10.9
304+00	20' LT	0-4	BROWN	71	48	29	23	19	24	07	A-2-4 (0)	S827	7
310+00	24' RT	0-4	GRAY	48	31	21	18	16	35	12	A-2-6 (0)	S828	11
320+00	20' RT	0-5	BROWN	48	32	21	17	13	23	05	A-2-A(0)	S829	14.5
328+00	06' LT	0-3.5	BROWN	94	79	59	52	48	32	12	A-6 (3)	S830	15.2
328+00	14' LT	0-5	BROWN	67	51	40	36	31	32	13	A-2-6 (0)	S831	10.8
328+00	20' LT	0-5	BROWN	30	19	14	12	10	28	09	A-2-4 (0)	S832	8.2
336+00	06' RT	0-5	BROWN	99	97	91	88	82	33	14	A-6 (10)	S833	12.6
336+00	14' RT	0-5	BROWN	99	98	97	94	83	23	07	A-4 (3)	S834	12.5
336+00	20' RT	0-5	BROWN	91	86	82	78	75	28	10	A-4 (6)	S835	16.7
344+00	06' LT	0-3.5	BROWN	95	84	66	59	51	23	08	A-4 (1)	S836	8.4
344+00	14' LT	0-5	BROWN	89	76	65	61	53	28	12	A-6 (3)	S837	18.7
344+00	20' LT	0-4	BROWN	88	76	65	61	59	36	17	A-6 (7)	S838	9.9
360+00	06' RT	0-5	BROWN	87	72	60	56	51	29	11	A-6 (3)	S839	19.8
360+00	14' RT	0-4.5Z	BROWN	89	76	61	56	51	33	12	A-6 (3)	S840	17.2
360+00	20' RT	0-4Z	BROWN	59	47	39	35	29	27	07	A-2-4 (0)	S841	19.3
368+00	06' LT	0-5	BROWN	98	91	79	75	70	32	11	A-6 (6)	S842	23.2
368+00	14' LT	0-5	RD/BR	96	86	71	67	62	32	11	A-6 (5)	S843	23.5
368+00	20' LT	0-5	RD/BR	94	85	73	68	62	29	10	A-4 (4)	S844	21.5
376+00	06' RT	0-5	BROWN	96	90	81	75	69	40	15	A-6 (10)	S845	18.2
376+00	14' RT	0-5	BROWN	99	96	88	83	78	45	19	A-7-6(15)	S846	17.3
376+00	20' RT	0-5	BROWN	93	85	75	68	59	36	14	A-6 (6)	S847	16.3

comments: W=MULTIPLE LAYERS, X=STRIPPED, Z=AUGER REFUSAL  
LOCATIONS MEASURED FROM C.L. OF EXISTING RDWY.

Thursday, January 28, 2016



STA.#	LOC.	DEPTH	COLOR	#4	#10	#40	#80	#200	L.L.	P.I.	SOIL CLASS	LAB #:	%MOISTURE
				S	I	E	V	E					
384+00	06' LT	0-4Z	BROWN	96	92	88	86	72	22	05	A-4 (1)	S848	21.1
384+00	14' LT	0-4.5Z	BROWN	85	79	72	68	62	29	08	A-4 (3)	S849	11.9
384+00	20' LT	0-5	BROWN	96	93	90	88	78	22	05	A-4 (2)	S850	14.1
392+00	06' LT	0-5	BROWN	87	76	65	60	55	27	08	A-4(2)	S851	18.2
392+00	20' LT	0-5	BROWN	46	37	26	18	12	ND	NP	A-1-A(0)	S852	11
256+00	14' LT	0-5	BROWN	80	70	54	48	43	32	11	A-6(2)	S853	14.3
408+00	06' LT	0-5	BROWN	87	73	58	54	50	29	11	A-6(3)	S854	10.3
408+00	14' LT	0-5	BROWN	92	85	71	63	57	31	12	A-6(4)	S855	6.3
416+00	06' LT	0-5	BROWN	90	80	69	65	61	32	11	A-6(5)	S856	21.7
416+00	14' LT	0-5	BROWN	91	82	73	70	65	27	09	A-4(4)	S857	24.3
416+00	20' LT	0-5	BROWN	87	77	67	62	56	29	09	A-4(3)	S858	24.5
424+00	06' LT	0-5	BROWN	98	92	87	83	76	20	03	A-4(0)	S859	21.6
424+00	14' LT	0-5	BROWN	90	84	79	74	67	22	05	A-4(1)	S860	20.4
424+00	20' LT	0-5	BROWN	91	84	78	74	66	22	05	A-4(1)	S861	20.7

**Michael Benson, Materials Engineer**

**COUNTY NO. 76**

**STA.# LOC. PAVEMENT SOUNDINGS**

101+00	15' RT	ACHMSC	ACHMBC	AGG. BASE CRS. CL7	8.0
		7.5W	---		
101+00	22' RT	ACHMSC	ACHMBC	AGG. BASE CRS. CL7	
		---	---		
101+00	06' RT	ACHMSC	ACHMBC	AGG. BASE CRS. CL7	7.0
		8.0W	2.0		
109+00	06' LT	ACHMSC	ACHMBC	AGG. BASE CRS. CL7	6.0
		8.5W	1.5		
109+00	15' LT	ACHMSC	ACHMBC	AGG. BASE CRS. CL7	7.0
		7.5	---		
109+00	22' LT	ACHMSC	ACHMBC	AGG. BASE CRS. CL7	
		---	---		
118+00	15' RT	ACHMSC	ACHMBC	AGG. BASE CRS. CL7	4.0
		10.0W	---		
118+00	22' RT	ACHMSC	ACHMBC	AGG. BASE CRS. CL7	
		---	---		
118+00	06' RT	ACHMSC	ACHMBC	AGG. BASE CRS. CL7	4.0
		10.5WX	2.0		
248+00	06' RT	ACHMSC	ACHMBC	AGG. BASE CRS. CL7	3.5
		7.0W	1.5		
248+00	14' RT	ACHMSC	ACHMBC	AGG. BASE CRS. CL7	7.0
		4.5W	---		
248+00	20' RT	ACHMSC	ACHMBC	AGG. BASE CRS. CL7	
		---	---		
256+00	20' LT	ACHMSC	ACHMBC	AGG. BASE CRS. CL7	
		---	---		
256+00	06' LT	ACHMSC	ACHMBC	AGG. BASE CRS. CL7	7.0
		8.0WX	1.5X		
256+00	14' LT	ACHMSC	ACHMBC	AGG. BASE CRS. CL7	
		---	---		
265+00	20' RT	ACHMSC	ACHMBC	AGG. BASE CRS. CL7	
		---	---		
265+00	06' RT	ACHMSC	ACHMBC	AGG. BASE CRS. CL7	7.0
		10.5W	---		

**comments:** W=MULTIPLE LAYERS, X=STRIPPED, Z=AUGER REFUSAL  
 LOCATIONS MEASURED FROM C.L. OF EXISTING RDWY.

**PAVEMENT SOUNDINGS**

**STA.# LOC.**

265+00	14' RT	ACHMSC 5.0W	ACHIMBC ---	ACHIMBC ---	AGG. BASE CRS. CL7 7.0
272+00	06' LT	ACHMSC 8.0WX	ACHIMBC 1.5	ACHIMBC ---	AGG. BASE CRS. CL7 7.0
272+00	20' LT	ACHMSC ---	ACHIMBC ---	ACHIMBC ---	AGG. BASE CRS. CL7 ---
281+00	06' RT	ACHMSC 8.5W	ACHIMBC 2.0	ACHIMBC ---	AGG. BASE CRS. CL7 7.0
281+00	14' RT	ACHMSC 4.0W	ACHIMBC ---	ACHIMBC ---	AGG. BASE CRS. CL7 9.0
281+00	20' RT	ACHMSC ---	ACHIMBC ---	ACHIMBC ---	AGG. BASE CRS. CL7 ---
288+00	06' LT	ACHMSC 7.5W	ACHIMBC 2.5	ACHIMBC ---	AGG. BASE CRS. CL7 7.0
288+00	14' LT	ACHMSC 4.0W	ACHIMBC ---	ACHIMBC ---	AGG. BASE CRS. CL7 7.0
288+00	20' LT	ACHMSC ---	ACHIMBC ---	ACHIMBC ---	AGG. BASE CRS. CL7 ---
296+00	06' RT	ACHMSC 8.5W	ACHIMBC 1.5	ACHIMBC ---	AGG. BASE CRS. CL7 8.0
296+00	14' RT	ACHMSC 4.5W	ACHIMBC ---	ACHIMBC ---	AGG. BASE CRS. CL7 8.0
296+00	20' RT	ACHMSC ---	ACHIMBC ---	ACHIMBC ---	AGG. BASE CRS. CL7 ---
304+00	14' LT	ACHMSC 4.5W	ACHIMBC ---	ACHIMBC ---	AGG. BASE CRS. CL7 6.0
304+00	06' LT	ACHMSC 8.5W	ACHIMBC 1.5	ACHIMBC ---	AGG. BASE CRS. CL7 8.0
328+00	14' LT	ACHMSC 4.0W	ACHIMBC ---	ACHIMBC ---	AGG. BASE CRS. CL7 5.5
328+00	20' LT	ACHMSC ---	ACHIMBC ---	ACHIMBC ---	AGG. BASE CRS. CL7 ---
328+00	06' LT	ACHMSC 7.5WX	ACHIMBC 1.5	ACHIMBC ---	AGG. BASE CRS. CL7 6.0
336+00	06' RT	ACHMSC 8.0W	ACHIMBC 1.5	ACHIMBC ---	AGG. BASE CRS. CL7 6.0
336+00	14' RT	ACHMSC 5.5W	ACHIMBC ---	ACHIMBC ---	AGG. BASE CRS. CL7 6.0

**comments:** W=MULTIPLE LAYERS, X=STRIPPED, Z=AUGER REFUSAL  
LOCATIONS MEASURED FROM C.L. OF EXISTING RDWY.

**PAVEMENT SOUNDINGS**

**STA.# LOC.**

336+00	20' RT	ACHMSC	ACHMBC	AGG BASE CRS CL-7
		--	--	--
344+00	14' LT	ACHMSC	ACHMBC	AGG. BASE CRS. CL-7
		5.0W	--	6.0
344+00	20' LT	ACHMSC	ACHMBC	AGG. BASE CRS. CL-7
		--	--	--
344+00	06' LT	ACHMSC	ACHMBC	AGG. BASE CRS. CL-7
		7.5W	1.75	6.0
360+00	14' RT	ACHMSC	ACHMBC	AGG. BASE CRS. CL-7
		6.0W	--	7.0
360+00	20' RT	ACHMSC	ACHMBC	AGG. BASE CRS. CL-7
		--	--	--
360+00	06' RT	ACHMSC	ACHMBC	AGG. BASE CRS. CL-7
		8.0W	2.0	6.0
368+00	20' LT	ACHMSC	ACHMBC	AGG. BASE CRS. CL-7
		--	--	--
368+00	06' LT	ACHMSC	ACHMBC	AGG. BASE CRS. CL-7
		8.5W	1.5	7.0
368+00	14' LT	ACHMSC	ACHMBC	AGG. BASE CRS. CL-7
		7.5W	--	8.0
376+00	20' RT	ACHMSC	ACHMBC	AGG. BASE CRS. CL-7
		--	--	--
376+00	06' RT	ACHMSC	ACHMBC	AGG. BASE CRS. CL-7
		8.5W	1.75	6.0
376+00	14' RT	ACHMSC	ACHMBC	AGG. BASE CRS. CL-7
		4.0W	--	6.0
384+00	06' LT	ACHMSC	ACHMBC	AGG. BASE CRS. CL-7
		8.0WX	1.5X	5.0
384+00	14' LT	ACHMSC	ACHMBC	AGG. BASE CRS. CL-7
		3.25W	--	6.0
384+00	20' LT	ACHMSC	ACHMBC	AGG. BASE CRS. CL-7
		--	--	--
392+00	06' LT	ACHMSC	ACHMBC	AGG. BASE CRS CL-7
		9.0W	2.25	6.0
392+00	20' LT	ACHMSC	ACHMBC	AGG. BASE CRS CL-7
		--	--	--
408+00	06' LT	ACHMSC	ACHMBC	AGG. BASE CRS CL-7
		8.25W	1.5	6.0

**comments:** W=MULTIPLE LAYERS, X=STRIPPED, Z=AUGER REFUSAL  
LOCATIONS MEASURED FROM C.L. OF EXISTING RDWY.

STA.# LOC.

PAVEMENT SOUNDINGS

408+00	14' LT	ACHMSC	ACHMBC	AGG.BASE CRS CL-7
		3.25	--	5.0
416+00	06' LT	ACHMSC	ACHMBC	AGG.BASE CRS CL-7
		8.5W	1.5	6.0
416+00	14' LT	ACHMSC	ACHMBC	AGG.BASE CRS CL-7
		4.25W	--	8.0
416+00	20' LT	ACHMSC	ACHMBC	AGG.BASE CRS CL-7
		--	--	--
424+00	20' LT	ACHMSC	AGG.BASE CRS CL-7	
		--	--	
424+00	06' LT	ACHMSC	ACHMBC	AGG.BASE CRS CL-7
		9.0W	2.5	4.0
424+00	14' LT	ACHMSC	AGG.BASE CRS CL-7	
		4.75W	6.0	

comments: W=MULTIPLE LAYERS, X=STRIPPED, Z=AUGER REFUSAL  
LOCATIONS MEASURED FROM C.L. OF EXISTING RDWY.



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

MICHAEL BENSON, MATERIALS ENGINEER

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

DATE - 01/13/16 SEQUENCE NO. - 2  
JOB NUMBER - 061309 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 - 76  
SUPPLIER NAME - COUNTIES DISTRICT NO. - XX  
NAME OF PROJECT - MITZI PKWY.- HWY. 290 (SAFETY IMPVTS.)  
PROJECT ENGINEER - NOT APPLICABLE  
PIT/QUARRY - ARKANSAS  
LOCATION - MULTIPLE COUNTIES DATE SAMPLED - 11/25/12  
SAMPLED BY - D.DICKERSON DATE RECEIVED - 12/01/15  
SAMPLE FROM - TEST HOLE DATE TESTED - 12/16/15  
MATERIAL DESC. - SOIL SURVEY - R VALUE- PAVEMENT SOUNDINGS

LAB NUMBER	20153967	20153968	20153969
SAMPLE ID	S799	S800	S801
TEST STATUS	INFORMATION ONLY	INFORMATION ONLY	INFORMATION ONLY
STATION	109+00	109+00	109+00
LOCATION	06' LT	15' LT	22' LT
DEPTH IN FEET	0-5	0-5	0-5
MAT'L COLOR	BROWN	BROWN	BROWN
MAT'L TYPE			
LATITUDE DEG-MIN-SEC	34 16 58.10	34 16 58.00	34 16 58.00
LONGITUDE DEG-MIN-SEC	93 09 46.60	93 09 46.70	93 09 46.80
% PASSING			
2 IN.	-	-	-
1 1/2 IN.	-	-	-
3/4 IN.	-	-	100
3/8 IN.	100	100	99
NO. 4	99	98	98
NO. 10	98	93	92
NO. 40	95	84	83
NO. 80	88	77	70
NO. 200	75	63	50
LIQUID LIMIT	29	34	18
PLASTICITY INDEX	13	19	04
AASHTO SOIL	A-6(8)	A-6(9)	A-4(0)
UNIFIED SOIL			
% MOISTURE CONTENT	13.8	10.7	15.3
ACHMSC (IN)	8.5W	7.5	---
ACHMBC (IN)	1.5	---	---
AGG. BASE CRS. CL7 (IN)	6.0	7.0	---

REMARKS - W=MULTIPLE LAYERS, X=STRIPPED, Z=AUGER REFUSAL  
- LOCATIONS MEASURED FROM C.L. OF EXISTING RDWY.





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

MICHAEL BENSON, MATERIALS ENGINEER

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

DATE - 01/13/16 SEQUENCE NO. - 4  
JOB NUMBER - 061309 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 - 76  
SUPPLIER NAME - COUNTIES DISTRICT NO. - XX  
NAME OF PROJECT - MITZI PKWY.- HWY. 290 (SAFETY IMPVTS.)  
PROJECT ENGINEER - NOT APPLICABLE  
PIT/QUARRY - ARKANSAS  
LOCATION - MULTIPLE COUNTIES DATE SAMPLED - 11/25/15  
SAMPLED BY - D.DICKERSON DATE RECEIVED - 12/01/15  
SAMPLE FROM - TEST HOLE DATE TESTED - 12/16/15  
MATERIAL DESC. - SOIL SURVEY - R VALUE- PAVEMENT SOUNDINGS

LAB NUMBER	20153973	20153974	20153975
SAMPLE ID	S805	S806	S807
TEST STATUS	INFORMATION ONLY	INFORMATION ONLY	INFORMATION ONLY
STATION	248+00	248+00	248+00
LOCATION	06' RT	14' RT	20' RT
DEPTH IN FEET	0-5	0-5	0-5
MAT'L COLOR	BROWN	BROWN	BROWN
MAT'L TYPE			
LATITUDE DEG-MIN-SEC	34 23 1.40	34 23 1.30	34 23 1.30
LONGITUDE DEG-MIN-SEC	93 07 56.30	93 07 56.20	93 07 56.20
% PASSING			
2 IN.			
1 1/2 IN.			
3/4 IN.	100	100	100
3/8 IN.	90	88	75
NO. 4	65	67	52
NO. 10	44	48	39
NO. 40	32	35	30
NO. 80	28	30	25
NO. 200	24	27	21
LIQUID LIMIT	26	26	ND
PLASTICITY INDEX	11	10	NP
AASHTO SOIL	A-2-6(0)	A-2-4(0)	A-1-B(0)
UNIFIED SOIL			
% MOISTURE CONTENT	10.3	15.1	16.4
ACHMSC (IN)	7.0W	4.5W	---
ACHMBC (IN)	1.5	---	---
AGG. BASE CRS. CL7 (IN)	3.5	7.0	---

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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	- 01/13/16	SEQUENCE NO.	- 5
JOB NUMBER	- 061309	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	- 76
SUPPLIER NAME	- COUNTIES	DISTRICT NO.	- XX
NAME OF PROJECT	- MITZI PKWY.- HWY. 290 (SAFETY IMPVTS.)		
PROJECT ENGINEER	- NOT APPLICABLE		
PIT/QUARRY	- ARKANSAS	DATE SAMPLED	- 11/25/15
LOCATION	- MULTIPLE COUNTIES	DATE RECEIVED	- 12/01/15
SAMPLED BY	- D.DICKERSON	DATE TESTED	- 12/16/15
SAMPLE FROM	- TEST HOLE		
MATERIAL DESC.	- SOIL SURVEY - R VALUE- PAVEMENT SOUNDINGS		

LAB NUMBER	- 20153976	- 20153977	- 20153978
SAMPLE ID	- S808	- S809	- S810
TEST STATUS	- INFORMATION ONLY	- INFORMATION ONLY	- INFORMATION ONLY
STATION	- 256+00	- 256+00	- 265+00
LOCATION	- 06' LT	- 20' LT	- 06' RT
DEPTH IN FEET	- 0-5	- 0-5	- 0-5
MAT'L COLOR	- BROWN	- BR/GR	- BROWN
MAT'L TYPE	-	-	-
LATITUDE DEG-MIN-SEC	- 34 23 5.20	- 34 23 5.30	- 34 23 6.10
LONGITUDE DEG-MIN-SEC	- 93 07 47.60	- 93 07 47.60	- 93 07 36.80
% PASSING			
2 IN.	-	-	-
1 1/2 IN.	-	-	-
3/4 IN.	- 100	- 100	- 100
3/8 IN.	- 94	- 98	- 90
NO. 4	- 75	- 92	- 78
NO. 10	- 59	- 79	- 64
NO. 40	- 47	- 59	- 46
NO. 80	- 43	- 49	- 40
NO. 200	- 38	- 42	- 36
LIQUID LIMIT	- 33	- 26	- 30
PLASTICITY INDEX	- 13	- 09	- 11
AASHTO SOIL	- A-6(1)	- A-4(1)	- A-6(0)
UNIFIED SOIL	-	-	-
% MOISTURE CONTENT	- 13.1	- 13.9	- 18.3
ACHMSC (IN)	- 8.0WX	- ---	- 10.5W
ACHMBC (IN)	- 1.5X	- ---	- ---
AGG. BASE CRS. CL7 (IN)	- 7.0	- ---	- 7.0
	-	-	-
	-	-	-
	-	-	-
	-	-	-
	-	-	-
	-	-	-
	-	-	-
	-	-	-

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MATERIALS DIVISION

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

DATE	- 01/13/16	SEQUENCE NO.	- 7
JOB NUMBER	- 061309	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	- 76
SUPPLIER NAME	- COUNTIES	DISTRICT NO.	- XX
NAME OF PROJECT	- MITZI PKWY.- HWY. 290 (SAFETY IMPVTS.)		
PROJECT ENGINEER	- NOT APPLICABLE		
PIT/QUARRY	- ARKANSAS		
LOCATION	- MULTIPLE COUNTIES	DATE SAMPLED	- 11/25/15
SAMPLED BY	- D.DICKERSON	DATE RECEIVED	- 12/01/15
SAMPLE FROM	- TEST HOLE	DATE TESTED	- 12/16/15
MATERIAL DESC.	- SOIL SURVEY - R VALUE- PAVEMENT SOUNDINGS		

LAB NUMBER	- 20153982	- 20153983	- 20153984
SAMPLE ID	- S815	- S816	- S817
TEST STATUS	- INFORMATION ONLY	- INFORMATION ONLY	- INFORMATION ONLY
STATION	- 272+00	- 281+00	- 281+00
LOCATION	- 20' LT	- 06' RT	- 14' RT
DEPTH IN FEET	- 0-5	- 0-5	- 0-5
MAT'L COLOR	- BROWN	- RD/BR	- RD/BR
MAT'L TYPE	-	-	-
LATITUDE DEG-MIN-SEC	- 34 23 9.20	- 34 23 13.70	- 34 23 13.60
LONGITUDE DEG-MIN-SEC	- 93 07 29.40	- 93 07 19.80	- 93 07 19.80
% PASSING			
2 IN.	-	-	-
1 1/2 IN.	-	-	-
3/4 IN.	- 100	-	- 100
3/8 IN.	- 97	- 100	- 99
NO. 4	- 93	- 97	- 94
NO. 10	- 84	- 90	- 84
NO. 40	- 71	- 80	- 73
NO. 80	- 66	- 76	- 69
NO. 200	- 61	- 71	- 63
LIQUID LIMIT	- 37	- 32	- 30
PLASTICITY INDEX	- 14	- 10	- 11
AASHTO SOIL	- A-6(7)	- A-4(6)	- A-6(5)
UNIFIED SOIL	-	-	-
% MOISTURE CONTENT	- 16.9	- 19.8	- 10.1
ACHMSC (IN)	- ---	- 8.5W	- 4.0W
ACHMBC (IN)	- ---	- 2.0	- ---
AGG. BASE CRS. CL7 (IN)	- ---	- 7.0	- 9.0
	-	-	-
	-	-	-
	-	-	-
	-	-	-
	-	-	-
	-	-	-
	-	-	-
	-	-	-
	-	-	-

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

DATE - 01/13/16 SEQUENCE NO. - 8  
JOB NUMBER - 061309 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 - 76  
SUPPLIER NAME - COUNTIES DISTRICT NO. - XX  
NAME OF PROJECT - MITZI PKWY.- HWY. 290 (SAFETY IMPVTS.)  
PROJECT ENGINEER - NOT APPLICABLE  
PIT/QUARRY - ARKANSAS  
LOCATION - MULTIPLE COUNTIES DATE SAMPLED - 11/25/15  
SAMPLED BY - D.DICKERSON DATE RECEIVED - 12/01/15  
SAMPLE FROM - TEST HOLE DATE TESTED - 12/16/15  
MATERIAL DESC. - SOIL SURVEY - R VALUE- PAVEMENT SOUNDINGS

LAB NUMBER	20153985	20153986	20153987
SAMPLE ID	S818	S819	S820
TEST STATUS	INFORMATION ONLY	INFORMATION ONLY	INFORMATION ONLY
STATION	281+00	288+00	288+00
LOCATION	20' RT	06' LT	14' LT
DEPTH IN FEET	0-5	0-5	0-5
MAT'L COLOR	BROWN	BROWN	BROWN
MAT'L TYPE			
LATITUDE DEG-MIN-SEC	34 23 13.60	34 23 19.00	34 23 19.10
LONGITUDE DEG-MIN-SEC	93 07 19.80	93 07 15.20	93 07 15.30
% PASSING			
2 IN.			
1 1/2 IN.			
3/4 IN.	100	100	
3/8 IN.	83	95	100
NO. 4	75	92	99
NO. 10	67	88	93
NO. 40	57	79	79
NO. 80	52	74	71
NO. 200	47	68	64
LIQUID LIMIT	26	39	37
PLASTICITY INDEX	08	17	15
AASHTO SOIL	A-4 (1)	A-6 (10)	A-6 (8)
UNIFIED SOIL			
% MOISTURE CONTENT	17.2	15.3	11.0
ACHMSC (IN)	---	7.5W	4.0W
ACHMBC (IN)	---	2.5	---
AGG. BASE CRS. CL7 (IN)	---	7.0	7.0

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

DATE - 01/13/16 SEQUENCE NO. - 14  
JOB NUMBER - 061309 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 - 76  
SUPPLIER NAME - COUNTIES DISTRICT NO. - XX  
NAME OF PROJECT - MITZI PKWY.- HWY. 290 (SAFETY IMPVTS.)  
PROJECT ENGINEER - NOT APPLICABLE  
PIT/QUARRY - ARKANSAS  
LOCATION - MULTIPLE COUNTIES DATE SAMPLED - 11/25/15  
SAMPLED BY - D.DICKERSON DATE RECEIVED - 12/01/15  
SAMPLE FROM - TEST HOLE DATE TESTED - 12/16/15  
MATERIAL DESC. - SOIL SURVEY - R VALUE- PAVEMENT SOUNDINGS

LAB NUMBER	20154003	20154004	20154005
SAMPLE ID	S836	S837	S838
TEST STATUS	INFORMATION ONLY	INFORMATION ONLY	INFORMATION ONLY
STATION	344+00	344+00	344+00
LOCATION	06' LT	14' LT	20' LT
DEPTH IN FEET	0-3.5	0-5	0-4
MAT'L COLOR	BROWN	BROWN	BROWN
MAT'L TYPE			
LATITUDE DEG-MIN-SEC	34 23 45.60	34 23 45.70	34 23 45.70
LONGITUDE DEG-MIN-SEC	93 06 20.20	93 06 20.20	93 06 20.30
% PASSING			
2 IN.			
1 1/2 IN.			
3/4 IN.	100	100	100
3/8 IN.	99	99	99
NO. 4	95	89	88
NO. 10	84	76	76
NO. 40	66	65	65
NO. 80	59	61	61
NO. 200	51	53	59
LIQUID LIMIT	23	28	36
PLASTICITY INDEX	08	12	17
AASHTO SOIL	A-4 (1)	A-6 (3)	A-6 (7)
UNIFIED SOIL			
% MOISTURE CONTENT	8.4	18.7	9.9
ACHMSC (IN)	7.5W	5.0W	---
ACHMBC (IN)	1.75	---	---
AGG. BASE CRS. CL-7 (IN)	6.0	6.0	---

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