### ARKANSAS DEPARTMENT OF TRANSPORTATION



### SUBSURFACE INVESTIGATION

STATE JOB NO.	061309						
FEDERAL AID PROJEC	CT NO	HSIP-3026(1)					
MITZI PK	WY HWY. 29	00 (SAFETY IMPVTS.) (	SEL. SECS.	) (S)			
STATE HIGHWAY	7	SECTION	8 & 9				
IN	GARL	AND & 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

D.	_	C 4	വ
Р,	•	04	-22

Type	Asphalt Cement %	Mineral Aggregate %
Surface Course	4.9	95.1
Binder Course	4.1	95.9
Base Course	3.8	96.2

### **PG 70-22**

Type	Asphalt Cement %	Mineral Aggregate %
Surface Course	4.8	95.2
Binder Course	4.1	95.9
Base Course	3.8	96.2

### PG 76-22

Type	<b>Asphalt Cement %</b>	Mineral Aggregate %
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

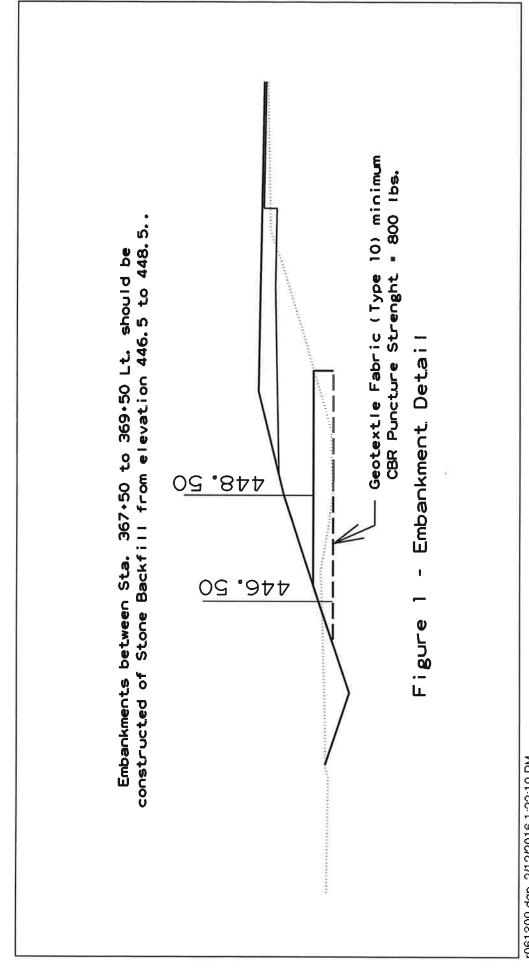
CC:

State Constr. Eng. - Master File Copy

District 6 Engineer

System Information and Research Div.

G. C. File



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### MICHAEL BENSON, MATERIALS ENGINEER

\*\*\* SOIL SURVEY STRENGTH TEST REPORT \*\*\*

DATE - 02/12/2016 SEQUENCE NO. - 1

JOB NUMBER - 061309 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

REMARKS -

AASHTO TESTS : T190

# ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT MATERIALS DIVISION

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

Job No.	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
LATITUDE:		LONGITUDE:		
1. Testing Inform	nation:			
	Preconditioning - Permanent Strain > 5% (Y=Yes	s or N= No)		N
	Testing - Permanent Strain > 5% (Y=Yes or N=N	0)		Ν
	Number of Load Sequences Completed (0-15)			15
2. Specimen Info	ormation:			
•	Specimen Diameter (in):			
	Тор		.5	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
				12.34
	Initial Area, Ao (sq. in):		3	
	Initial Volume, AoLo (cu. in):			99.07
3. Soil Specimer	-			
	Weight of Wet Soil Used (g):			3188.40
4. Soil Properties	s:			
	Optimum Moisture Content (%):			16.3
	Maximum Dry Density (pcf):			109.2
	95% of MDD (pcf):		8	103.7
	In-Situ Moisture Content (%):			N/A
5. Specimen Pro	perties:			
	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 (%):		34	15.6
6. Quick Shear T	est (Y=Yes, N=No, N/A=Not Applicable):			#VALUE!
7. Resilient Mod	ulus. Mr:	6604(S	(c)^-0.32639	(S3)^0.47113
	,	550 ((2	-, 5,5,500	()
8. Comments				
		67.0040		
9. Tested By:	<u>GW</u> Dat	e: January 27, 2016	26	

# ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT MATERIALS DIVISION

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

SSRVPS 424+00

20'LT

Material Code Station No.: Location: MITZI PKWY. - HWY 290 (SAFETY IMPVTS) January 27, 2016 11/25/15 061309 Name of Project: Date Sampled: Date Tested: Job No.

HOT SPRINGS Name: D. DICKERSON Code: 30 Sampled By: County:

20154031 RV864 LATITUDE: Sample ID: Lab No.:

Material Type (1 or 2): 2 0-5 LONGITUDE: Depth:

_		_		_	_	_	_		_		_	_	_			_	_	_	_	_
Resilient Modulus				Ā	bsi	12,185	10,620	9,390	8,109	7,621	9,870	8,665	7,045	6,436	6,256	8,343	5,898	5,123	4,879	4.920
Resilient Strain				ယ်	in/in	0.00015	0.00034	0.00057	0.00087	0.00114	0.00018	0.00041	0.00074	0.00107	0.00137	0.00021	0.00057	0.00097	0.00135	0.00167
Average Recov Def.	LVDT 1	and 2		Havg	ृ⊆	0.00121	0.00276	0.00461	0.00696	0.00917	0.00147	0.00332	0.00597	0.00861	0.01100	0.00170	0.00460	0.00777	0.01083	0.01344
Actual Applied	Contact	Stress		Scontact	psi	0.2	0.2	0.3	0.5	0.7	0.2	0.2	0.2	0.4	9.0	0.2	0.2	0.2	0.4	9.0
Actual Applied	Cyclic	Stress		Scyclic	psi	1.8	3.6	5.4	7.0	8.7	1.8	3.6	5.2	6.9	9.8	1.8	3.4	5.0	9.9	8.2
Actual Applied	Мах.	Axial	Stress	Smax	isd	2.0	3.9	5.7	7.5	9.4	2.0	3.8	5.5	7.3	9.2	2.0	3.6	5.2	7.0	80
Actual Applied	Contact	Load		Pcontact	sql	2.7	2.7	3.7	6.1	8.7	2.8	2.8	2.9	5.4	7.7	2.8	2.9	2.9	4.6	7.1
Actual Applied	Cyclic Load			P <sub>cyclic</sub>	sql	22.6	45.0	66.4	86.8	107.3	22.3	44.2	64.7	85.1	105.7	21.8	41.7	61.2	81.2	101.6
Actual Applied	700	Load		P <sub>max</sub>	lbs	25.3	47.7	70.1	92.9	116.0	25.1	47.0	9.79	90.5	113.4	24.6	44.6	64.1	85.8	108.7
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			ၓၲ	psi	0.9	0.9	0.9	0.9	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

GW	n; 30;
TESTED BY	REVIEWED BY

January 27, 2016

DATE DATE

### ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT MATERIALS DIVISION

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

Job No.

061309

**Material Code SSRVPS** 

Date Sampled:

11/25/15

**Station No.:** 424+00

Date Tested:

Location: 20' LT

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

January 27, 2016

County:

Code: 30

Name: HOT SPRINGS

Sampled By:

D. DICKERSON

Depth: 0-5

Lab No.:

AASHTO Class: A-4 (4)

Sample ID:

20154031

**RV864** 

Material Type (1 or 2): 2

LATITUDE:

LONGITUDE:

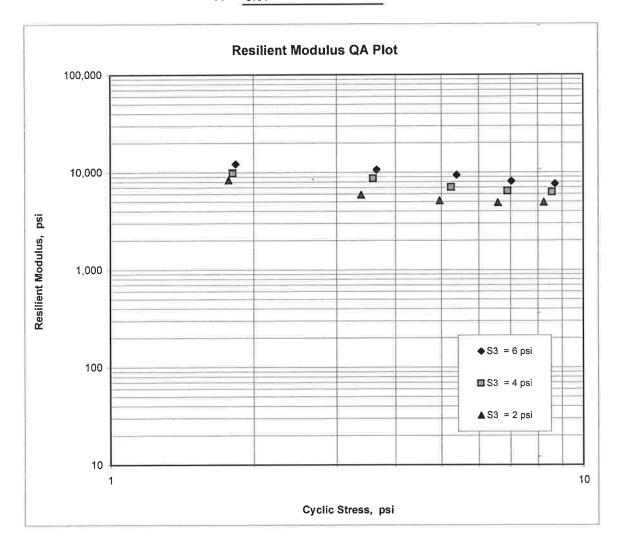
$$M_R = K1 (S_C)^{K2} (S_3)^{K5}$$

K1 = 6,604

K2 = -0.32639

K5 = 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

Job No. Date Sampled: Date Tested: Name of Project:	061309 11/25/15 January 27, 2016 MITZI PKWY HWY 290 (SAFETY IMPVTS)	Material Code Station No.: Location:	SSRVPS 368+00 20' LT	
County: Sampled By: Lab No.: Sample ID: LATITUDE:	Code: 30 Name: HOT SPRINGS D. DICKERSON 20154030 RV863	Depth: AASHTO Class: Material Type (1 or 2): LONGITUDE:		0-5 A-4 (1) 2
1. Testing Inform				
	Preconditioning - Permanent Strain > 5% (Y=Yes Testing - Permanent Strain > 5% (Y=Yes or N=No Number of Load Sequences Completed (0-15)			N N 15
2. Specimen Info	rmation:			
	Specimen Diameter (in):  Top  Middle			3.97 3.97
	Bottom Average		š	3.97 3.97
	Membrane Thickness (in): Height of Specimen, Cap and Base (in): Height of Cap and Base (in):			0.00 8.02 0.00
	Initial Length, Lo (in): Initial Area, Ao (sq. in): Initial Volume, AoLo (cu. in):			8.02 12.38 99.28
3. Soil Specimen	Weight: Weight of Wet Soil Used (g):			3105.40
4. Soil Properties	<b>s:</b>			
·	Optimum Moisture Content (%): Maximum Dry Density (pcf): 95% of MDD (pcf): In-Situ Moisture Content (%):			15.4 110.2 104.7 N/A
5. Specimen Pro	perties:		7.	
	Wet Weight (g): Compaction Moisture content (%): Compaction Wet Density (pcf): Compaction Dry Density (pcf): Moisture Content After Mr Test (%):			3105.40 15.1 119.19 103.55 15.2
6. Quick Shear To	est (Y=Yes, N=No, N/A=Not Applicable):			#VALUE!
7. Resilient Modu	ulus, Mr:	12184(S	c)^-0.26457	7(S3)^0.29159
8. Comments				
9. Tested By:	<u>GW</u> Date	e: January 27, 2016		

# ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT MATERIALS DIVISION

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

Material Code Station No.: Location: MITZI PKWY. - HWY 290 (SAFETY IMPVTS) January 27, 2016 11/25/15 061309 Name of Project: Date Sampled: Date Tested: Job No.

HOT SPRINGS Name: D. DICKERSON Code: 30 Sampled By: Lab No.: County:

20154030 RV863 Sample ID: LATITUDE:

9-0

Depth:

SSRVPS 368+00

20'LT

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

LONGITUDE:

	Chamber Confining	Nominal Maximum	Actual Applied	Actual Applied	Actual Applied	Actual Applied	Actual Applied	Actual Applied	Average Recov Def.	Resilient Strain	Resilient Modulus
PARAMETER	Pressure	Axial	Max. Axial	Cyclic Load	Contact	Мах.	Cyclic	Contact	LVDT 1		
		Stress	Load		Pood	Axial	Stress	Stress	and 2		
						Stress					
DESIGNATION	လိ	Scyclic	P <sub>max</sub>	P <sub>cyclic</sub>	Pcontact	Smax	Scyclic	Scontact	H <sub>avg</sub>	3	M
TIND	psi	psi	sql	sql	sql	psi	psi	psi	<sub>:-</sub> ⊑	in/in	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	0.9	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
Sednence 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	9.0	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	9.0	0.00805	0.00100	8,394

DATE	DATE
TESTED BY	REVIEWED BY

January 27, 2016

### ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT MATERIALS DIVISION

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

**Depth:** 0-5

Lab No .:

20154030

AASHTO Class: A-4 (1)

Sample ID:

RV863

Material Type (1 or 2): 2

LONGITUDE:

LATITUDE:

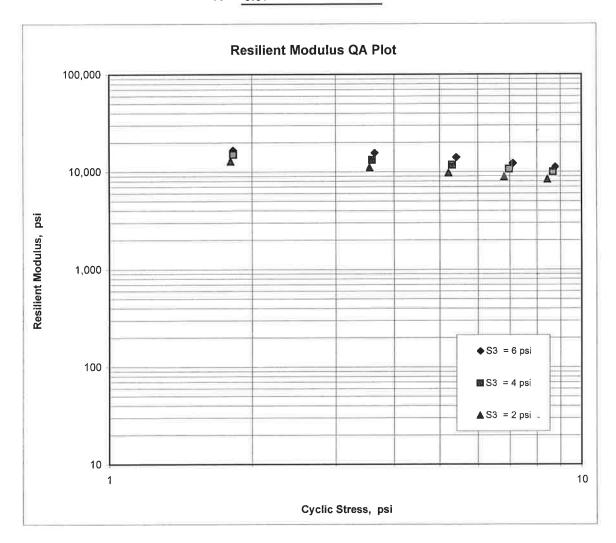
$$M_R = K1 (S_C)^{K2} (S_3)^{K5}$$

K1 = 12,184

K2 = -0.26457

K5 = 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

Job No.	061309	Material Code	SSRVPS
Date Sampled:	11/25/15	Station No.:	101+00
Date Tested:	January 26, 2016	Location:	22'RT '
Name of Project:	MITZI PKWY HWY.290 (SAFETY IMPVTS)		
County:	Code: 30 Name: HOT SPRINGS		
Sampled By:	D. DICKERSON	Depth:	0-5
Lab No.:	20154029	<b>AASHTO Class:</b>	A-4 (0)
Sample ID:	RV862	Material Type (1 or 2):	2
LATITUDE:		LONGITUDE:	
1. Testing Inform	nation:	<u></u>	
	Preconditioning - Permanent Strain > 5% (Y=Ye	s or N= No)	N
	Testing - Permanent Strain > 5% (Y=Yes or N=N	lo)	N
	Number of Load Sequences Completed (0-15)		15
2. Specimen Info	ormation:		
	Specimen Diameter (in):		
	Тор		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 (iii):		0.00
			8.02
	Initial Length, Lo (in):		
	Initial Area, Ao (sq. in):		12.32
	Initial Volume, AoLo (cu. in):		98.78
3. Soil Specimen			
	Weight of Wet Soil Used (g):		3279.30
4. Soil Properties	<b>5</b> :		
	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 Pro	nerties:		
o. openinen i lo	Wet Weight (g):		3279.30
	Compaction Moisture content (%):		13.2
	Compaction Wet Density (pcf):		126.50
	, ,		111.75
	Compaction Dry Density (pcf):  Moisture Content After Mr Test (%):		111.75
	Wordstard Content Attention 1001 (70).		12.0
6. Quick Shear T	est (Y=Yes, N=No, N/A=Not Applicable):		#VALUE!
7. Resilient Modu	ulus, Mr:	12618(S	c)^-0.31902(S3)^0.30432
8. Comments			
9. Tested By:	<u>GW</u> Dat	e: January 26, 2016	
		As a second seco	

# ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT MATERIALS DIVISION

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

Material Code MITZI PKWY. - HWY.290 (SAFETY IMPVTS) January 26, 2016 11/25/15 061309 Name of Project: Date Sampled: Date Tested: Job No.

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

D. DICKERSON 20154029 RV862 Sampled By: LATITUDE: Sample ID: Lab No.:

101+00 22'RT Station No.: Location:

SSRVPS

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

0-5

Depth:

LONGITUDE:

	Chamber	Nominal	Actual	Actual	Actual	Actual	Actual	Actual	Average	Resilient	Resilient
PARAMETER	Pressure	Maximum Axial	Applied Max. Axial	Appiled Cyclic Load	Applied	Аррпед Мах.	Applied Cyclic	Applied Contact	Recov Der. LVDT 1	Strain	Modulus
		Stress	Load		Load	Axial	Stress	Stress	and 2		
						Stress					
DESIGNATION	လိ	Sayolic	P <sub>max</sub>	Peyelic	Pcontact	S <sub>max</sub>	Seyelic	Scontact	Havg	چ	Mr
UNIT	psi	psi	lbs	lbs	sql	psi	psi	psi	ui	in/in	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	0.9	4.0	47.5	44.6	2.8	3.9	3.6	0.2	0.00193	0.00024	15,095
Sequence 3	0.9	0.9	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	0.9	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	0.9	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	9.0	0.00739	0.00092	9,399
Sequence 11	1.2.0	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	0.9	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	9.0	0.00852	0.00106	7,923

January 26, 2016	1
DATE	DATE
GW	
TESTED BY	REVIEWED BY

### ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT-MATERIALS DIVISION

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

Job No.

061309

Material Code SSRVPS

**Date Sampled:** 

11/25/15

**Station No.:** 101+00

Date Tested:

January 26, 2016

Location: 22'RT

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

January 20, 2010

\_\_\_\_\_

County:

Code: 30

Name: HOT SPRINGS

Sampled By:

D. DICKERSON

Depth: 0-5

Lab No.:

20154029

AASHTO Class: A-4 (0)

Sample ID:

RV862

Material Type (1 or 2): 2

LATITUDE:

LONGITUDE:

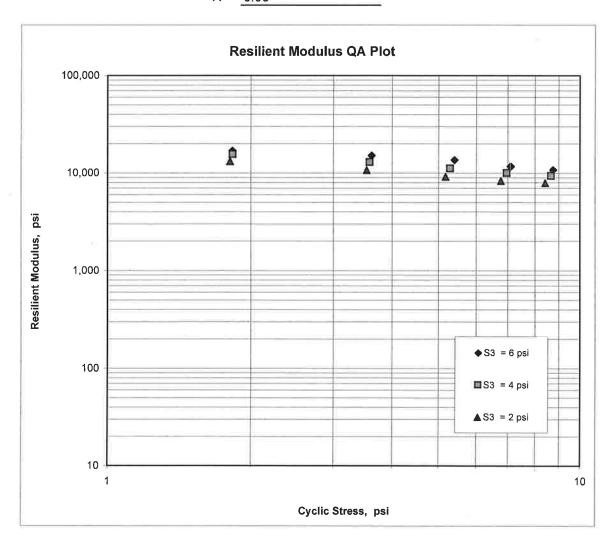
$$M_R = K1 (S_C)^{K2} (S_3)^{K5}$$

K1 = 12,618

K2 = -0.31902

K5 = 0.30432

 $R^2 = 0.98$ 



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

Materials Division

COUNTY NO. 76 DATE TESTED 12/16/2015

Michael Benson, Materials Engineer

COON	HINO.	70	DATE LESTE	3D 14	2/ 10/	2015									
STA.#	LOC. I	DEPTH	COLOR	#4	#10	#40 E	#80	#200 E S	L.L.	P.I.	SO	IL CLASS	<i>LAB</i> #:	%MOISTU	RE
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)	\$804	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	ŀ	A-4(6)	S816	19.8	
281+00	14' RT	0-5	RD/BR	94	84	73	69	63	30	11		A-6(5)	\$817	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	

STA.#	LOC. I	DEPTH	COLOR	#4	#10	#40	#80	#200 E S	L.L.	P.I.	SOIL CLASS	<i>LAB</i> #:	%MOISTURE
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	80	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' L <b>T</b>	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)	\$835	16.7
344+00	06' LT	0-3.5	BROWN	95	84	66	59	51	23	80	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

STA.#	LOC.	DEPTH	COLOR	#4	#10	#40	#80	#200	L.L.	P.I.	SOIL CLASS	<i>LAB</i> #:	%MOISTURE
384+00	06' LT	0-4Z	BROWN	96	92	88	86	72 T	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

DATE TESTED

Arkansas State Highway Transporation Department

Materials Division

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

COUNTY NO. 76

061309

JOB:

12/16/2015

Michael Benson, Materials Engineer

PAVEMENT SOUNDINGS AGG. BASE CRS. CL7 AGG.BASE CRS CL-7 AGG. BASE CRS. CL7 4.0 ACHMBC ACHIMBC ACHMBC ACHIMBC ACHIMBC ACHMBC ACHIMBC ACHIMBC ACHIMBC ACHMBC ACHIMBC ACHMBC ACHMBC ACHIMBC ACHIMBC ACHIMBC ACHIMBC 1.5X 2.0 2.0 5. 1.5 ACHIMSC **ACHIMSC** ACHIMSC ACHMSC **ACHMSC** ACHIMSC ACHIMSC ACHIMSC 10.5WX 8.0WX 10.0W 10.5W 8.5W 7.0W 4.5W 7.5W 8.0W 7.5 20' RT 06' RT 14' RT 15' RT 22' RT 22' LT 15' RT 06' RT 20' RT 06' LT 14' LT 06' RT 06' LT 15' LT 22' RT R 20' LT STA.# LOC. 90 101+00 109+00 248+00 101+00 101+00 109+00 109+00 248+00 256+00 265+00 118+00 118+00 248+00 256+00 256+00 265+00 118+00

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

comments:

Thursday, January 28, 2016

Page 2 of 4

																																				Thursday, January 28, 2016
AGG. BASE CRS. CL7	7.0	AGG. BASE CRS. CL7	AGG BASE CBS CL7	10.000	AGG. BASE CRS. CL7	0:1 0:1	AGG. BASE CRS. CL/ 9.0	AGG. BASE CRS. CL7	ı	AGG. BASE CRS. CL7	7.0	AGG. BASE CRS. CL7	7.0	AGG. BASE CRS. CL7	Į.	AGG. BASE CRS. CL7	8.0	AGG. BASE CRS. CL7	8.0	AGG BASE CRS CL 7	ľ	AGG BASE CRS CL 7	0.9	AGG BASE CRS CL 7	8.0	AGG BASE CRS CL 7	5.5	AGG BASE CRS CL 7	ĺ	AGG BASE CRS CL 7	6.0	AGG BASE CRS CL-7	6.0	AGG BASE CRS CL-7	6.0	AUGER REFUSAL
CHWSC ACHWBC	1	ACHMBC	L.S		ACHIMBC	Capal	ACTIMIBO	ACHMBC	1	ACHMBC	2.5	ACHIMBC	1	ACHMBC	ı	ACHIMBC	7.5	ACHIMBC	1	ACHMBC	1	ACHMBC	ť	ACHMBC	1.5	ACHIMBC	Ĭ.	ACHMBC	ī	ACHMBC	1.5	ACHIMBC	1.5	ACHMBC	Ĭ.	W=MULTIPLE LAYERS, X=STRIPPED, Z=AUGER REFUSAL
ACHMSC	5.0W	ACHIMSC	O'CHIMO'C		ACHIMSC	COMPLO	4.0W	ACHIMSC	ı	ACHMSC	7.5W	ACHMSC	4.0W	ACHIMSC	ı	ACHIMSC	8.5W	ACHIMSC	4.5W	ACHIMSC	ı	ACHMSC	4.5W	ACHMSC	8.5W	ACHMSC	4.0W	ACHIMSC	ı	ACHMSC	7.5WX	ACHMSC	8.0W	ACHIMSC	5.5W	MULTIPLE LAY
14' RT		06' LT	T 1,00	70	06' RT	14' DT	<u>4</u>	20' RT		06' LT		14' LT		20' LT		06' RT		14' RT		20' RT		14' LT		17 ,90		14' LT		20' LT		06' LT		06' RT		14' RT		1
265+00		272+00	272+00	212100	281+00	001	701+00	281+00		288+00		288+00		288+00		296+00		296+00		296+00		304+00		304+00		328+00		328+00		328+00		336+00		336+00		comments:

PAVEMENT SOUNDINGS

STA.# LOC.

LOCATIONS MEASURED FROM C.L. OF EXISTING RDWY.

Page 3 of 4

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

comments:

AGG BASE CRS CL-7		AGG. BASE CRS. CL-7 6.0	AGG. BASE CRS. CL-7	AGG. BASE CRS. CL-7 <b>6.0</b>	AGG. BASE CRS. CL-7 7.0	AGG. BASE CRS. CL-7	AGG. BASE CRS. CL-7	6.0	AGG. BASE CRS. CL-7	Ŧ.	AGG. BASE CRS. CL-7	0.7	AGG. BASE CRS. CL-7 8.0	AGG. BASE CRS. CL-7		AGG. BASE CRS. CL-7 6.0	AGG. BASE CRS. CL-7 6.0	AGG. BASE CRS. CL-7 5.0	AGG. BASE CRS. CL-7	6.0	AGG. BASE CRS. CL-7	1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	6.0	AGG.BASE CRS CL-7	ř.	AGG.BASE CRS CL-7 6.0
ACHIMBC	1	ACHMBC	ACHMBC	ACHMBC 1.75	ACHMBC	ACHMBC	ACHMBC	2.0	ACHMBC	1	ACHMBC	<u>c:</u>	ACHMBC	ACHMBC	1	ACHMBC 1.75	ACHMBC	ACHMBC 1.5X	ACHMBC	Ê	ACHMBC	Cawan	2.25	ACHMBC	12	ACHMBC 1.5
ACHMSC	ı	ACHMSC 5.0W	ACHIMSC	ACHIMSC 7.5W	ACHMSC 6.0W	ACHMSC	ACHMSC	8.0W	ACHMSC	1	ACHMSC 8 FW	0.00	ACHIMSC 7.5W	ACHMSC	ı	ACHMSC 8.5W	ACHMSC 4.0W	ACHMSC 8.0WX	ACHIMSC	3.25W	ACHMSC	COMITON	9.0W	ACHMSC	10	ACHMSC 8.25W
20' RT		14' LT	20' LT	06' LT	14' RT	20' RT	06' RT		20' LT		06' LT		14' LT	20' RT		06' RT	14' RT	06' LT	14' LT		20' LT	F .90	3	20' LT		06' LT
336+00		344+00	344+00	344+00	360+00	360+00	360+00		368+00		368+00		368+00	376+00		376+00	376+00	384+00	384+00		384+00	00.00	285	392+00		408+00

PAVEMENT SOUNDINGS

STA.# LOC.

Page 4 of 4

416+00 14'LT	14' LT	8.5W ACHIMSC 4.25W	1.5 ACHIMBC	6.0 AGG.BASE CRS CL-7 8.0
424+00 20'LT	20' LT	ACHMSC	AGG.BASE CRS CL-7	7.00.075 CF-7
424+00 06'LT 424+00 14'LT	06' LT 14' LT	ACHMSC 9.0W ACHMSC 4.75W	ACHMBC 2.5 AGG.BASE CRS CL-7 6.0	AGG.BASE CRS CL-7

PAVEMENT SOUNDINGS

STA.# LOC.

### MICHAEL BENSON, MATERIALS ENGINEER

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

SPEC. REMARKS - NO S SUPPLIER NAME - COUN NAME OF PROJECT - MI PROJECT ENGINEER - NO PIT/QUARRY - ARKANS LOCATION - MULTIN SAMPLED BY - D.DICK SAMPLE FROM - TEST I	809 BE ASSIGNED SPECIFICATION SPECIFICATION STIES STZI PKWY H OT APPLICABLE SAS PLE COUNTIES ERSON HOLE	CHECK WY. 290 (SAF			SPEC. YESUPPLIER COUNTY/S' DISTRICT  DATE SAM DATE REC DATE TES	CODE - SSRVPS AR - 2014 ID 1 TATE - 76
MATERIAL DESC SOI	L SURVEY - F	( VALUE- PAVE	7 IVI E	MI POONDING	<b>ವ</b> ಧ	8
LAB NUMBER	- 20153	964		20153965		20153966
SAMPLE ID	- S796			S797		S798
TEST STATUS	- INFOR					INFORMATION ONLY
STATION	- 101+0	0	-	101+00	-	101+00
LOCATION	- 06' R	T	-	15' RT	_	22' RT
DEPTH IN FEET	- 0-5			0 - 5	======================================	0-5
MAT'L COLOR	- BROWN		72	BROWN	-	BROWN
MAT'L TYPE	-				-	15 50 50
LATITUDE DEG-MIN-S		16 52.40	-		52.40 =	34 16 52.50
LONGITUDE DEG-MIN-S	SEC - 93	09 40.20		93 09	40.20	93 09 40.10
% PASSING 2	IN		_		2	
	IN		-		=	
	IN		~	100		100
-	IN 100		-	99	=	99
NO.	4 - 99		_	97	_	95
NO.	10 - 98		_	94	=	90
NO.	40 - 97		_	91	-	84
NO.	80 - 87		_	79	=	78
NO.	200 - 57			54		61
TOUTD I THIT	- ND		_	20	-	26
LIQUID LIMIT PLASTICITY INDEX	- ND		_	05	-	11
AASHTO SOIL	- A-4	(0)	-	A-4(0)	-	A-6(4)
UNIFIED SOIL	-	(0)	-	, ,	-	
% MOISTURE CONTENT	_ 13	3.3	-	15.1	-	11.1
				E EM		
ACHMSC	(IN) - 8.		_	7.5W		
ACHMBC	(IN) - 2 <sub>*</sub>		_			
AGG. BASE CRS. CL7	(IN) - 7.	0	_	8.0		
	<u>:</u> _0		-			-
	#2 		-			-
	=2		-		•	-
	#\ 20		_			_
	360		_			-

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

### MICHAEL BENSON, MATERIALS ENGINEER

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

		,						
DATE - 01/1	3/16					SEQUENCE		
JOB NUMBER - 0613	09					MATERIAL	CODE - SSRVPS	3
FEDERAL AID NO TO B	E ASSIG	NED				SPEC. YE	AR - 2014	
PURPOSE - SOIL	SURVEY	SAMPLE				SUPPLIER	ID 1	
SPEC. REMARKS - NO S	PECIFIC	CATION CHE	CK			COUNTY/S	TATE - 76	
SUPPLIER NAME - COUN						DISTRICT	NO XX	
NAME OF PROJECT - MI	TZI PKV	YY HWY.	290 (SAF	ET	Y IMPVTS.)			
PROJECT ENGINEER - NC							72	
PIT/QUARRY - ARKANS								
LOCATION - MULTIF		ITIES				DATE SAN	IPLED - 11/25,	/12
SAMPLED BY - D.DICKE						DATE REC	EIVED - 12/01,	/15
SAMPLE FROM - TEST H						DATE TES	TED - 12/16,	/15
MATERIAL DESC SOII		y - r vai	LUE- PAV	EME	NT SOUNDIN	GS		
	_ DOICE							
LAB NUMBER	-	20153967			20153968		20153969	
SAMPLE ID	-	S799			5800		S801	~~~~
TEST STATUS	-	INFORMATI	ON ONLY				INFORMATION	ONLY
STATION	-	109+00			109+00	_	109+00	
LOCATION	-	06' LT			15' LT	_	22' LT	
DEPTH IN FEET	-	0-5		-	0 - 5	2	0-5	
MAT'L COLOR	_	BROWN		4	BROWN	-	BROWN	
MAT'L TYPE	-					-		
LATITUDE DEG-MIN-S	SEC -	34 16	58.10	:=		58.00	34 16 58.	
LONGITUDE DEG-MIN-S	SEC -	93 09	46.60		93 09	46.70	93 09 46.	80
% PASSING 2	IN			_		_		
% PASSING 2 1 1/2				12		_		
•				-		-	100	
•	IN	100		165	100	-	99	
	IN	99		12	98	-	98	
NO.				-	93	-	92	
NO. NO.	10 - 40 -	98 95		-	84	_	83	
				77	77	_	70	
NO.	80 -	88		=	63	_	50	
NO. 2	200 -	75			03			
LIQUID LIMIT	-	29		_	34	236	18	
PLASTICITY INDEX	-	1.3		-	19		04	
AASHTO SOIL	-	A-6(8)		-	A-6(9)		A-4(0)	
UNIFIED SOIL	-			-				
% MOISTURE CONTENT	=	13.8		-	10.7		15.3	
	/ TNT\ _	8.5W		4	7.5	,		
ACHMSC	(IN) -				7.5	,		
ACHMBC	(IN) -	1.5		-	7.0			
AGG. BASE CRS. CL7	(IN)	6.0		-	7.0	5	¥8	
	<b>(3)</b>			-		3	€0	
	<b>4</b> 8			-		3	53 C	
	***			-			<b>5</b> 	
	100 B			1				
				-			•/	
	-			-				

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

AASHTO TESTS : T24 T88 T89 T90 T265

-

### MICHAEL BENSON, MATERIALS ENGINEER

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

DATE - 01/ JOB NUMBER - 061 FEDERAL AID NO TO PURPOSE - SOI SPEC. REMARKS - NO SUPPLIER NAME - COU NAME OF PROJECT - M PROJECT ENGINEER - N PIT/QUARRY - ARKAN LOCATION - MULTI SAMPLED BY - D.DICK SAMPLE FROM - TEST MATERIAL DESC SOI	309 BE ASSI L SURVE SPECIFI NTIES ITZI PK OT APPL ISAS PLE COU KERSON HOLE	Y SAMPLE CATION CHECK WY HWY. 290 (SAI ICABLE NTIES		SEQUENCE NO 3  MATERIAL CODE - SSRVPS  SPEC. YEAR - 2014  SUPPLIER ID 1  COUNTY/STATE - 76  DISTRICT NO XX   DATE SAMPLED - 11/25/15  DATE RECEIVED - 12/01/15  DATE TESTED - 12/16/15  GS
LAB NUMBER  SAMPLE ID  TEST STATUS  STATION  LOCATION  DEPTH IN FEET  MAT'L COLOR  MAT'L TYPE  LATITUDE DEG-MIN-  LONGITUDE DEG-MIN-		118+00 06' RT 0-3.5 BR/GR	- 118+00 - 15' RT - 0-5 - BROWN	- S804 ON ONLY - INFORMATION ONLY - 118+00 - 22' RT - 0-5 - BROWN - 34 17 6.90
% PASSING 2 1 1/2 3/4 3/8 NO. NO. NO.	IN IN IN IN IN IN	100 97 93 93 79 59	- - 100 - 99 - 93 - 86 - 79 - 69 50	- - - 100 - 91 - 85 - 78 - 69 49
LIQUID LIMIT PLASTICITY INDEX AASHTO SOIL UNIFIED SOIL % MOISTURE CONTENT	- - - -	ND NP A-4(0)	- 18 - 03 - A-4(0) - 16.7	- ND - NP - A-4(0) - 17.2
ACHMSC ACHMBC AGG. BASE CRS. CL7	(IN) - (IN) - (IN) - - - - - -	10.5WX 2.0 4.0	- 10.0W  - 4.0	- 0.00

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

### MICHAEL BENSON, MATERIALS ENGINEER

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

DATE - 01/1  JOB NUMBER - 0613  FEDERAL AID NO TO F  PURPOSE - SOII  SPEC. REMARKS - NO S  SUPPLIER NAME - COUN  NAME OF PROJECT - MI  PROJECT ENGINEER - NO  PIT/QUARRY - ARKANS	MATERIAL SPEC. YE SUPPLIED COUNTY/S						
LOCATION - MULTIPLE COUNTIES  SAMPLED BY - D.DICKERSON  SAMPLE FROM - TEST HOLE  DATE SAMPLED - 11/25/1 DATE RECEIVED - 12/01/1 DATE TESTED - 12/16/1							
MATERIAL DESC SOI	L SURVE	Y - R VALUE- PAV	EME	NT SOUNDING	GS		
LAB NUMBER	23	20153973	-	20153974	19	20153975	
SAMPLE ID	_	\$805	; <del>=</del> ;	S806	,	S807	
TEST STATUS	=	INFORMATION ONLY	170	INFORMATIO	ON ONLY	- INFORMATION ONLY	
STATION	:+-:	248+00	-	248+00		248+00	
LOCATION	(22)	06' RT		14' RT		20' RT	
DEPTH IN FEET	1	0-5	)=/ }=;	0-5		0-5	
MAT'L COLOR MAT'L TYPE	-	BROWN	_	BROWN		BROWN	
LATITUDE DEG-MIN-S	SEC -	34 23 1.40	-	34 23	1.30	34 23 1.30	
LONGITUDE DEG-MIN-S	SEC -	93 07 56.30			56.20	93 07 56.20	
% PASSING 2	IN		-				
	IN		-				
· ·	IN.	100	$\hat{x}_{i} = \hat{x}_{i}$	100	,	100	
·		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	920	26	-	26	1	- ND	
PLASTICITY INDEX		11	-	10	1	NP	
AASHTO SOIL	-	A-2-6(0)	1000	A-2-4(0)		A-1-B(0)	
UNIFIED SOIL	: 5		107				
% MOISTURE CONTENT	) <del>=</del> :	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		조 역 공유의 요	
	- 122 - 122		-			¥	
	-		-			<b></b>	
			57			<del>.</del>	
			=			<u>.</u> 2	
	: <del>-</del>		-			5	

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

### MICHAEL BENSON, MATERIALS ENGINEER

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

DATE - 01/3  JOB NUMBER - 0613  FEDERAL AID NO TO 1  PURPOSE - SOID  SPEC. REMARKS - NO 3  SUPPLIER NAME - COUN  NAME OF PROJECT - M  PROJECT ENGINEER - NO  PIT/QUARRY - ARKAN  LOCATION - MULTI  SAMPLED BY - D.DICK  SAMPLE FROM - TEST 3  MATERIAL DESC SOID	NO 5 CODE - SSRVPS AR - 2014 ID 1 PATE - 76 NO XX PLED - 11/25/15 EIVED - 12/01/15 TED - 12/16/15				
LAB NUMBER  SAMPLE ID  TEST STATUS  STATION  LOCATION  DEPTH IN FEET  MAT'L COLOR  MAT'L TYPE  LATITUDE DEG-MIN-LONGITUDE DEG-MIN-			256+00 20' LT 0-5 BR/GR	ION ONLY	20153978 S810 INFORMATION ONLY 265+00 06' RT 0-5 BROWN 34 23 6.10 93 07 36.80
% PASSING 2 1 1/2 3/4	IN IN IN IN 4 - 10 - 40 - 80 -	100 94 75 59 47 43 38	100 - 98 - 92 - 79 - 59 - 49 42	7.00	100 90 78 64 46 40 36
LIQUID LIMIT PLASTICITY INDEX AASHTO SOIL UNIFIED SOIL % MOISTURE CONTENT ACHMSC ACHMBC AGG. BASE CRS. CL7	(IN) - (IN) - (IN) -	33 13 A-6(1) 13.1 8.0WX 1.5X 7.0	- 26 - 09 - A-4(1) - 13.9	- - - - -	30 11 -A-6(0) 18.3 10.5W
	- - -			- -	

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

### MICHAEL BENSON, MATERIALS ENGINEER

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

DATE - 01/13/16 SEQUENCE NO 6 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.DICKE						CEIVED - 12/01/15 STED - 12/16/15	
SAMPLE FROM - TEST H MATERIAL DESC SOII		EY - R VALUE- PAV	EME	ENT SOUNDING		STED - 12/16/15	
LAB NUMBER	_	20153979	_	20153980	-	20153981	
SAMPLE ID	_	S811	_	S812	-	S813	
TEST STATUS	=	INFORMATION ONLY	-	INFORMATIO	ON ONLY -	INFORMATION ONLY	
STATION	_	265+00	-	265+00	-	272+00	
LOCATION	-	14' RT	-	20' RT	-	06' LT	
DEPTH IN FEET	-	0-5	_	0 - 5	-	0-5	
MAT'L COLOR	-	BROWN	_	BROWN	-	BROWN	
MAT'L TYPE	-		-		22		
LATITUDE DEG-MIN-S		34 23 6.00	-	34 23		34 23 9.10	
LONGITUDE DEG-MIN-S	SEC -	93 07 36.80		93 07	36.80	93 07 29.20	
% PASSING 2	IN		-		97		
1 1/2	IN		77.0		-		
3/4	IN	100	_	100	-	100	
'	IN	99	-	72	-	96	
NO.	4 -	86	=	40	-	88	
NO.	10 -	65	-	26		73	
NO.	40 -	45	-	19	5 <del>-</del>	57 52	
NO.	- 08	39	-	17 15	i=	46	
NO. 2	200 -	34		15		40	
LIQUID LIMIT	-	27	-		84	30	
PLASTICITY INDEX	_	09	-		100	12	
AASHTO SOIL	_	A-2-4(0)	-	A-1-A(0)	53 <b>-</b>	A-6(2)	
UNIFIED SOIL	-		-		127 174		
% MOISTURE CONTENT	-	11.3		9.6		14.5	
ACHMSC	(IN) -	5.0W	-			8.0WX	
ACHMBC	(IN) -		-	· 17/7/07		<sup>-</sup> 1.5	
AGG. BASE CRS. CL7	(IN) -	7.0	-			7.0	
	-		-			%) <b>≟</b> 5	
	-		/			-	
	3-3		: <del>-</del>			<del>-</del>	
	( <del>#</del> 1		-			<del></del>	
			955 022				
	-		_				

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

### MICHAEL BENSON, MATERIALS ENGINEER

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

	DOID :	JORVET / I		-			:*	
DATE - 01/13 JOB NUMBER - 06130 FEDERAL AID NO TO BE PURPOSE - SOIL SPEC. REMARKS - NO SE SUPPLIER NAME - COUNT NAME OF PROJECT - MIT PROJECT ENGINEER - NOT PIT/QUARRY - ARKANSA LOCATION - MULTIPE SAMPLED BY - D.DICKER SAMPLE FROM - TEST HO MATERIAL DESC SOIL LAB NUMBER SAMPLE ID	E ASSIC SURVEY PECIFIC FIES FZI PKI F APPL AS LE COUR RSON DLE SURVE	Y SAMPLE CATION CHE WY HWY. ICABLE NTIES Y - R VA 20153982 S815	ECK 290 (SAF LUE- PAVI	EME	NT SOUNDIN 20153983 S816	=	CODE - AR - 2 ID IATE - NO IATE - TED - TED - 2015398 S817	SSRVPS 2014 1 76 XX 11/25/15 12/01/15 12/16/15
TEST STATUS			ION ONLY	#	INFORMATIO	ON ONLY	INFORMA	TION ONLY
STATION		272+00		77 22	281+00		281+00	
LOCATION		20' LT		_	06' RT 0-5	-	14' RT 0-5	
DEPTH IN FEET	-	0-5 BROWN		**	RD/BR		RD/BR	
MAT'L COLOR MAT'L TYPE	_	DROWN		77 22	112, 211	-	,	
LATITUDE DEG-MIN-SI	EC -	34 23	9.20	*	34 23			3 13.60
LONGITUDE DEG-MIN-SI	EC -	93 07	29.40		93 07	19.80	93 0	7 19.80
1 1/2 3 3/4 3 3/8 3 NO. NO.	IN IN 4 - 10 - 40 -				100 97 90 80 76 71	- - - - - -	-100 99 94 84 73 69	
	00						30	
LIQUID LIMIT PLASTICITY INDEX	_	37 14		•	32 10	· ·	11	
AASHTO SOIL	_	A-6(7)		-		=	A-6(5)	
UNIFIED SOIL	_	, ,		***		: = : : : : : : : : : : : : : : : : : :		
% MOISTURE CONTENT	_	16.9		-	19.8		10.1	L
ACHMSC (	(IN) -				8.5W	-	4.0W	
	(IN) -			-	2.0	-		
AGG. BASE CRS. CL7	(IN) -	35.55		-	7.0	2	9.0	
	=			_				
	-			-		8	2 2	
	=			-		±		
				72		5	÷5	
	-					9=	•}	

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

AASHTO TESTS : T24 T88 T89 T90 T265

JIIIO 11010

### MICHAEL BENSON, MATERIALS ENGINEER

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

DATE - 01/1 JOB NUMBER - 0613 FEDERAL AID NO TO B PURPOSE - SOIL SPEC. REMARKS - NO S SUPPLIER NAME - COUN NAME OF PROJECT - MI PROJECT ENGINEER - NO PIT/QUARRY - ARKANS LOCATION - MULTIE SAMPLED BY - D.DICKE SAMPLE FROM - TEST B MATERIAL DESC SOI	BE ASSIC SURVE BECIFIC STIES TZI PK OT APPL SAS PLE COU ERSON	Y SAMPLE CATION CHECK WY HWY. 290 (SA ICABLE NTIES			SPEC. YEAR SUPPLIER COUNTY/ST DISTRICT  DATE SAM DATE REC DATE TES	CODE - SSRVPS AR - 2014 ID 1 FATE - 76 NO XX  PLED - 11/25/15 EIVED - 12/01/15
LAB NUMBER SAMPLE ID	-	20153985 S818	_	20153986 S819	J≱ I H	20153987 S820
TEST STATUS			-		N ONLY -	
STATION	-	281+00	_	288+00	= =	288+00
LOCATION		20' RT	_	06' LT	_	14' LT 0-5
DEPTH IN FEET		0-5 BROWN	-	0-5 BROWN	-	BROWN
MAT'L COLOR MAT'L TYPE	-	BROWN	-	BROWN		DICOMIN
LATITUDE DEG-MIN-S	EC =	34 23 13.60	_	34 23	19.00 -	34 23 19.10
LONGITUDE DEG-MIN-S					15.20	93 07 15.30
% PASSING 2 1 1/2	IN.		-		5	
	IN	100	-	100	₩ ₩	
•	IN.	83	1	95	+	100
NO.		75	-	92	=	99
NO.	10 -	67	-	88	Ħ	93
NO.		57	_	79	_	79
NO.	80 -	52	-	74	=	71
NO. 2	200	47		68		64
LIQUID LIMIT	12	26	-	39	<u>≅</u> :	37
PLASTICITY INDEX	70 <del>2</del> 0	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) -	100 MB	#	7.5W	7. <u>**</u>	4.0W
ACHMBC	(IN) -	*** *** / · · · · · · · · · · · · · · ·	=	2.5	-	
AGG. BASE CRS. CL7	(IN) -		-	7.0	-	7.0
	-		=		2	
	12		-		-	
	-		-			
	3=		=		5秦 620	
	15 12		Ω 2		-	

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

### MICHAEL BENSON, MATERIALS ENGINEER

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

SPEC. REMARKS - NO SP SUPPLIER NAME - COUNT NAME OF PROJECT - MIT PROJECT ENGINEER - NOT PIT/QUARRY - ARKANSA LOCATION - MULTIPL SAMPLED BY - D.DICKER SAMPLE FROM - TEST HO	PS ASSIGNED C ASSIGNED SURVEY SAMPLE PECIFICATION CHECK TIES TZI PKWY HWY. 290 (SAF) T APPLICABLE AS LE COUNTIES RSON			E - SSRVPS - 2014 - 1 - 76 - XX
LAB NUMBER  SAMPLE ID  TEST STATUS  STATION  LOCATION  DEPTH IN FEET  MAT'L COLOR  MAT'L TYPE  LATITUDE DEG-MIN-SE  LONGITUDE DEG-MIN-SE		- 296+00 - 06' RT - 0-5 - BROWN	- 296 - 14' - 0-5 - BRO - 23.90 - 3	CORMATION ONLY S+00 RT
% PASSING 2 I 1 1/2 I 3/4 I 3/8 I NO. NO. 1	IN IN IN IN IN 100 4 - 99 10 - 98 40 - 93 30 - 90	- - - 100 - 96 - 83 - 63 - 55 49	5 5 6 6 7	99 39 73 51 44 39
LIQUID LIMIT PLASTICITY INDEX AASHTO SOIL UNIFIED SOIL % MOISTURE CONTENT	- 31 - 13 - A-6(9) - 10.8	31 - 10 - A-4(2) - 8.5	- 2: - 0: - *A	
ACHMBC (	IN)  IN)	- 8.5W - 1.5 - 8.0 	-2	4.5W  8.0

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

### MICHAEL BENSON, MATERIALS ENGINEER

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

DATE - 01/13  JOB NUMBER - 06130  FEDERAL AID NO TO BE PURPOSE - SOIL  SPEC. REMARKS - NO SE SUPPLIER NAME - COUNT  NAME OF PROJECT - MIT  PROJECT ENGINEER - NO PIT/QUARRY - ARKANSA LOCATION - MULTIPE  SAMPLED BY - D.DICKET  SAMPLE FROM - TEST HO MATERIAL DESC SOIL	ASSICATE OF THE STATE OF THE SECONTIAL COLE	Y SAMPLE CATION CHECK WY HWY. 290 (SAF ICABLE NTIES			MATERIAL SPEC. YE SUPPLIER COUNTY/S DISTRICT  DATE SAN DATE REC DATE TES	
LAB NUMBER	-			20153992		20153993
SAMPLE ID		S824		S825		S826
TEST STATUS						INFORMATION ONLY
STATION		296+00	-	304+00		304+00
LOCATION		20' RT	-	06' LT	340	14' LT
DEPTH IN FEET	_		-	0-5	<del>=</del>	0-5
MAT'L COLOR	_	BROWN	_	BROWN		BROWN
MAT'L TYPE	-		_		-	
LATITUDE DEG-MIN-SI		34 23 23.80	-	34 23	28.70 -	34 23 28.80
LONGITUDE DEG-MIN-SI	EC -	93 07 8.40		93 06	60.00	93 07 .00
1 1/2 3 3/4 3 3/8 3 NO. NO.	IN IN 4 - 10 - 40 -	100 77 54 35 29 25		100 94 78 53 45 39	- - - - - -	100 90 47 29 19 16
LIQUID LIMIT	_	28	2	27	2-	30
PLASTICITY INDEX	-	08	2	08		10
AASHTO SOIL	-	A-2-4 (0)	=	A-4 (0)	( <del>)</del>	A-2-4 (0)
UNIFIED SOIL	_		### 225		-	•
% MOISTURE CONTENT	-	7.1	-	6.0		10.9
ACHMSC	(IN) -	222	_	8.5W		- 4.5W
	(IN) -		-	1.5		- *
	(IN) -		-	8.0		6.0
	-		_			-
	_		_			_
	-		-			-
	-		-			-
	_		-		•	<del>-</del>
	-		-			_

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

### MICHAEL BENSON, MATERIALS ENGINEER

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

DATE - 01/13/16 JOB NUMBER - 061309 FEDERAL AID NO TO BE ASS PURPOSE - SOIL SURV SPEC. REMARKS - NO SPECIF SUPPLIER NAME - COUNTIES NAME OF PROJECT - MITZI P PROJECT ENGINEER - NOT APP PIT/QUARRY - ARKANSAS LOCATION - MULTIPLE CO SAMPLED BY - D.DICKERSON SAMPLE FROM - TEST HOLE MATERIAL DESC SOIL SURV	EY SAMPLE ICATION CHECK KWY HWY. 290 (SAF LICABLE UNTIES	¥	SEQUENCE NO 11  MATERIAL CODE - SSRVPS  SPEC. YEAR - 2014  SUPPLIER ID 1  COUNTY/STATE - 76  DISTRICT NO XX   DATE SAMPLED - 11/25/15  DATE RECEIVED - 12/01/15  DATE TESTED - 12/16/15  GS
LAB NUMBER - SAMPLE ID -	S827	- 20153995 - S828	- 20153996 - S829
TEST STATUS -	INFORMATION ONLY		N ONLY - INFORMATION ONLY
STATION -	304+00	310+00	- 320+00
	20' LT	- 24' RT -	- 20' RT
DDIIII III IIIII	0-4	0-4 - GDDV	0-5 - DECVIN
MAT'L COLOR - MAT'L TYPE -	BROWN	_ GRAY	_ BROWN
LATITUDE DEG-MIN-SEC -	34 23 28.80	- - 34 23 :	- 30.00 - 34 23 37.40
LATITUDE DEG-MIN-SEC - LONGITUDE DEG-MIN-SEC -			53.50 93 06 44.70
	<i>J</i> 5 07 .10	33 00	33.30
% PASSING 2 IN		-	100
1 1/2 IN		- 100	- 100
3/4 IN		- 95 - 88	- 93 - 71
3/8 IN		77 - 48	- 48
NO. 4 -		31	20
NO. 10 - NO. 40 -	= -	_ 21	_ 32
NO. 80 -		- 18	- 17
NO. 80 - NO. 200 -		16	13
LIQUID LIMIT -	24	35	23
PLASTICITY INDEX -		= 12	- 105
11101110 00	A-2-4 (0)	- A-2-6 (0)	A-2-A(0)
UNIFIED SOIL -		11.0	14 5
% MOISTURE CONTENT -	7.0	11.0	14.5
-		=	( <del>=</del>
-		-	3.€
-		-	2点 (学
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-		## ·	
		= 1	-

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

### MICHAEL BENSON, MATERIALS ENGINEER

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

DATE - 01/13/16 SEQUENCE NO 12  JOB NUMBER - 061309 MATERIAL CODE - 5SRVPS  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 SOUNDINGS							
LAB NUMBER	_			20153998		20153999	
SAMPLE ID	_	\$830	-	S831		- S832	
TEST STATUS	_	INFORMATION ONLY	-	INFORMATIO	N ONLY		ONLY
STATION	_			328+00		328+00	
LOCATION	_	06' LT	-	14' LT		20' LT	
DEPTH IN FEET		0-3.5	-	0-5		0-5	
MAT'L COLOR	_	BROWN	-	BROWN		BROWN	
MAT'L TYPE	-		-			# 2 #	
LATITUDE DEG-MIN-	SEC -	34 23 42.70	-	34 23 4	12.80	34 23 42	.80
LONGITUDE DEG-MIN-	SEC -	93 06 38.90		93 06 ;	39.00	93 06 39	.00
% PASSING 2	IN					_	
	IN		-			<u></u>	
	IN		-	100		100	
_ ·	IN	100	•	84		<del>-</del> 59	
NO.	4 -	94	-	67		30	
NO.	10 -	79	- 25	51		<u> </u>	
NO.			-	40		_ 14	
NO.	80 -	52	-	36		- 12	
NO.	200 -	48		31		10	
LIQUID LIMIT	_	32		32		<b>28</b>	
PLASTICITY INDEX	_			13		- 09	
AASHTO SOIL	_	A-6 (3)	-	A-2-6 (0)		A-2-4 (0)	
UNIFIED SOIL	_	11 0 (0)				=	
% MOISTURE CONTENT	_	15.2	•	10.8		8.2	
		7.5WX		4.0W		(A) - Value of	
ACHMSC ACHMBC	(IN) -	1.5	2	4.0W			
ACHMBC AGG BASE CRS CL 7	(IN) -	6.0		5.5		- 222	
AGG BASE CRS CL /	( TM )	0.0	=	5.5		<u>-</u>	
	•		72			-	
			-			-	
	-		-			-	
	3.E		=			<del>-</del>	
	**		-			= ,,	

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

### MICHAEL BENSON, MATERIALS ENGINEER

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

DATE - 01/13/16 SEQUENCE NO 13  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.DICK							- 12/01/15	
SAMPLE FROM - TEST : MATERIAL DESC SOI		Y - R VALUE- PAV	EME	NT SOUNDIN	DATE TE	STED	- 12/16/15	
LAB NUMBER	_			20154001		2015	1002	
SAMPLE ID		20154000 S833		S834		S835	1002	
TEST STATUS	_						RMATION ONLY	
STATION		336+00	S <del></del>	336+00		336+		
LOCATION	-	06' RT	-	14' RT		20 1	RT	
DEPTH IN FEET	-	0-5	-	0 - 5		0-5		
MAT'L COLOR	_	BROWN	-	BROWN		BROW	4	
MAT'L TYPE	-		÷		9			
LATITUDE DEG-MIN-					44.00	34		
LONGITUDE DEG-MIN-	SEC -	93 06 29.80		93 06	29.80	93	06 29.70	
% PASSING 2	IN		-		-	1985)		
1 1/2	IN				-	-		
3/4	IN		-	100	-	100		
3/8	IN	100		99		96		
NO.	4 -	99	-	99		91		
NO.	10 -	97	-	98	-	_ 86		
NO.	40 -	91	-	97	-	_ 82		
NO.		88	-	94	1-	- 78		
NO.	200 -	82		83		75		
LIQUID LIMIT	-	33	=	23	ä	- 28		
PLASTICITY INDEX	-	14	Ü	07		- 10		
AASHTO SOIL	-	A-6 (10)	-	A-4 (3)	9	A-4	(6)	
UNIFIED SOIL	-		_			54 <b>=</b> }:		
% MOISTURE CONTENT	-	12.6		12.5		1	6.7	
ACHMSC	(IN) -	8.0W	-	5.5W		- 5	-	
ACHMBC	(IN) -	1.5	-				-	
AGG BASE CRS CL-7	(IN) -	6.0	-	6.0		* E	=	
	_		-			= 1+ <u>=</u>		
	_		2			_		
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	-		-			≅ ⊝		
	-		2			2		
	_		-					

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

### MICHAEL BENSON, MATERIALS ENGINEER

\*\*\* 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.)       -       XX         PROJECT ENGINE       -       NOT APPLICABLE       -       NOT APPLICABLE       -       DATE SAMPLED       -       11/25/15								/15
SAMPLED BY - D.DICKER SAMPLE FROM - TEST HO					DATE R		EIVED - 12/01 FED - 12/16	
MATERIAL DESC SOIL		GY - R VALUE- PAV	EME	ENT SOUNDIN				
LAB NUMBER	-	20154003		20154004		¥	20154005	
SAMPLE ID	-	S836		S837			S838	
TEST STATUS	-	INFORMATION ONLY			ON ONLY			ONLY
STATION			955 200	344+00			344+00	
LOCATION		06' LT		14' LT		=:	20' LT	
DEPTH IN FEET		0-3.5		0-5		=	0 - 4 DDOMN	
MAT'L COLOR	-	BROWN	1	BROWN		-	BROWN	
MAT'L TYPE	-	24 22 45 60	-	34 23	4E 70	-	34 23 45	70
LATITUDE DEG-MIN-SE LONGITUDE DEG-MIN-SE					20.20	-	93 06 20	
LONGITUDE DEG-MIN-SE	iC -	93 00 20.20		<i>J</i> 5 00	20.20		JJ 00 20	. 50
•	N		§ <del>€</del>			=		
1 1/2 I						5		
3/4 I		100	_	100		-	100	
3/8 I		99		99		70	99 - 88	
	4 -	95	$\overline{z}$	89 76		-	76	
NO. 1			=	65		3	65	
NO. 4		66 59	-	61		-	61	
NO. 8 NO. 20	0 -		-	53		-	59	
110. 20	-	31						
LIQUID LIMIT	-	23	77	28		-	36	
PLASTICITY INDEX	-	08	-	12		-	17	
AASHTO SOIL	-	A-4 (1)	_	A-6 (3)		_	A-6 (7)	
UNIFIED SOIL	-	1.	=			-	0.0	
% MOISTURE CONTENT	-	8.4		18.7			9.9	
ACHMSC (	IN) -	7.5W	-	5.0W		ä		
ACHMBC (	IN) -	1.75	-			=		
AGG. BASE CRS. CL-7 (	IN) -	6.0	-	6.0		=		
	=		_			=		
	_		-			24		
	-		_			7		
	<b>2</b>		-			77		
	<u>=</u>		-					
	-		_			_		

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

AASHTO TESTS : T24 T88 T89 T90 T265

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### MICHAEL BENSON, MATERIALS ENGINEER

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

DATE - 01/13/16 SEQUENCE NO 15  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 - MULTIPE SAMPLED BY - D.DICKER	E COUI	NTIES			DATE RE	MPLED - 11/25/15 CEIVED - 12/01/15		
SAMPLE FROM - TEST HO MATERIAL DESC SOIL		Y - R VALUE- PAV	EME	NT SOUNDING	DATE TE: GS	STED - 12/16/15		
LAB NUMBER	-	20154006		20154007		20154008		
SAMPLE ID	_	S839	_	S840	_	S841		
TEST STATUS	-	INFORMATION ONLY	-	INFORMATIO	N ONLY -	INFORMATION ONLY		
STATION	-	360+00	-	360+00	-	360+00		
LOCATION	-	06' RT	_	14' RT	_	20' RT		
DEPTH IN FEET		0-5	-	0-4.5Z	_	0-4Z		
MAT'L COLOR MAT'L TYPE	-	BROWN	-	BROWN	-	BROWN		
LATITUDE DEG-MIN-SE	:C -	34 23 55.00	_	34 23	-  55.00	. 34 23 54.90		
LONGITUDE DEG-MIN-SE	_	93 06 4.90		93 06	4.80	93 06 4.80		
% PASSING 2 I	N -		-		_	0.47		
1 1/2 I	N		-		-			
3/4 I	N	100	-	100	-	100		
3/8 I	N	99	_	99	_	83		
NO.	4 -	87	-	89	_	59		
	.0 -	72	-	76	-	47		
	10 -	60	32	61	-	. 39		
Tu Tu	30 -	56	-	56	-	. 35		
NO. 20	00 -	51		51		. 29		
LIQUID LIMIT	-	29	=	33	-	27		
PLASTICITY INDEX	-	11	*	12	-	07		
AASHTO SOIL	-	A-6 (3)	_	A-6 (3)		A-2-4 (0)		
UNIFIED SOIL	-		-	17.0	2	10.3		
% MOISTURE CONTENT		19.8		17.2		19.3		
	IN) -	8.0W	<b>=</b> 70	6.0W				
	IN) -	2.0	_	7.0				
AGG. BASE CRS. CL-7 (	IN) -	6.0	-	7.0				
	=		77			-		
	=		-			<u>-</u>		
	_		-			- -		
	-		-			-		
	**		•			-		

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

### MICHAEL BENSON, MATERIALS ENGINEER

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

DATE - 01/13/1 JOB NUMBER - 061309 FEDERAL AID NO TO BE A PURPOSE - SOIL SU SPEC. REMARKS - NO SPEC SUPPLIER NAME - COUNTIE NAME OF PROJECT - MITZI PROJECT ENGINEER - NOT A PIT/QUARRY - ARKANSAS LOCATION - MULTIPLE SAMPLED BY - D.DICKERSO SAMPLE FROM - TEST HOLE		SEQUENCE NO 16  MATERIAL CODE - SSRVPS  SPEC. YEAR - 2014  SUPPLIER ID 1  COUNTY/STATE - 76  DISTRICT NO XX   DATE SAMPLED - 11/25/15  DATE RECEIVED - 12/01/15  DATE TESTED - 12/16/15			
MATERIAL DESC SOIL ST	URVEY - R VALUE- PAVE	MENT SOUNDING	de de		
LAB NUMBER	- 20154009	20154010	- 20154011		
SAMPLE ID		= S843	- S844		
TEST STATUS		- INFORMATIC	N ONLY - INFORMATION ONLY		
STATION	- 368+00	368+00	- 368+00		
LOCATION	- 06' LT	14' LT	- 20' LT		
DEPTH IN FEET	- 0-5	0-5	0-5		
MAT'L COLOR	- BROWN	RD/BR	_ RD/BR		
MAT'L TYPE	=	54 74	_		
LATITUDE DEG-MIN-SEC	- 34 23 60.00	34 24	.00 - 34 24 .00		
LONGITUDE DEG-MIN-SEC	- 93 05 57.70	93 05	57.70 93 05 57.70		
% PASSING 2 IN. 1 1/2 IN.		_	- -		
3/4 IN.		- 100	- 100		
3/4 IN. 3/8 IN.		- 99	- 99		
NO. 4	- 98	- 96	- 94		
NO. 10	- 91	- 86	85		
NO. 40	- 79	_ 71	_ 73		
NO. 80	- 75	- 67	_ 68		
NO. 200	- 70	62	62		
			0.0		
LIQUID LIMIT	- 32	- 32	29		
PLASTICITY INDEX	- 11	- 11	10		
AASHTO SOIL	- A-6 (6)	- A-6 (5)	A-4 (4)		
UNIFIED SOIL	-				
% MOISTURE CONTENT	- 23.2	23.5	21.5		
ACHMSC (IN	r) - 8.5W	- 7.5W			
ACHMBC (IN	1.5		- 222		
AGG. BASE CRS. CL-7 (IN	7.0	8.0			
	* I <del>a</del> 8	주! 20	-		
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	-	-	-		
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REMARKS - W=MULTIPLE LAYERS, X=STRIPPED, Z=AUGER REFUSAL - LOCATIONS MEASURED FROM C.L. OF EXISTING RDWY.

### MICHAEL BENSON, MATERIALS ENGINEER

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

DATE - 01/13/16  JOB NUMBER - 061309  FEDERAL AID NO TO BE ASS  PURPOSE - SOIL SURV  SPEC. REMARKS - NO SPECIN  SUPPLIER NAME - COUNTIES  NAME OF PROJECT - MITZI N  PROJECT ENGINEER - NOT APP  PIT/QUARRY - ARKANSAS  LOCATION - MULTIPLE CO  SAMPLED BY - D.DICKERSON  SAMPLE FROM - TEST HOLE  MATERIAL DESC SOIL SUR	YEY SAMPLE FICATION CHECK PKWY HWY. 290 (SAMPLICABLE DUNTIES		SEQUENCE NO 17  MATERIAL CODE - SSRVPS  SPEC. YEAR - 2014  SUPPLIER ID 1  COUNTY/STATE - 76  DISTRICT NO XX   DATE SAMPLED - 11/25/15  DATE RECEIVED - 12/01/15  DATE TESTED - 12/16/15
LAB NUMBER	20154012	- 20154013	- 20154014
SAMPLE ID	S845	_ S846	- S847
TEST STATUS	INFORMATION ONLY	- INFORMATIO	N ONLY - INFORMATION ONLY
STATION	376+00	~ 376+00	376+00
	· 06' RT	14' RT	20' RT
DEPTH IN FEET	0-5	0-5	0-5
1111 11 0011011	BROWN	BROWN	BROWN
MAT'L TYPE		-	<del>-</del>
LATITUDE DEG-MIN-SEC			4.30 = 34 24 4.30
LONGITUDE DEG-MIN-SEC	93 05 49.70	93 05 4	9.60 93 05 49.60
% PASSING 2 IN.		-	-
1 1/2 IN.		-	<b>≖</b>
3/4 IN.		-	100
3/8 IN.		100	98
NO. 4		- 99	93
NO. 10		_ 96	_ 85
NO. 40		_ 88	_ 75 68
NO. 80 NO. 200		- 83 78	59
NO. 200	- 69	76	53
LIQUID LIMIT	40	45	36
	15	- 19	- 14
	A-6 (10)	A-7-6(15)	A-6 (6)
UNIFIED SOIL		- -	
% MOISTURE CONTENT	18.2	17.3	16.3
ACHMSC (IN)	8.5W	- 4.0W	- 55.5
ACHMBC (IN)	1.75	= ===	C) BEE
AGG. BASE CRS. CL-7 (IN)	6.0	6.0	555
	e •	<del></del>	_
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	e e e e e e e e e e e e e e e e e e e	4	-
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	t 4	2	-

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

### MICHAEL BENSON, MATERIALS ENGINEER

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

,		,				2
DATE - 01/1					SEQUENCE	
JOB NUMBER - 0613 FEDERAL AID NO TO F PURPOSE - SOII SPEC. REMARKS - NO S		MATERIAL CODE - SSRVPS				
FEDERAL AID NO TO H	BE ASSI	JNED				AR - 2014
PURPOSE - SOII	SURVE	Y SAMPLE			SUPPLIER	
		CATION CHECK				TATE - 76
SUPPLIER NAME - COUNTY NAME OF PROJECT - MI			/ C A E E T	V TMDVTC \	DISTRICT	NO XX
PROJECT ENGINEER - NO			(SAFEI	I IMPVID.)		
		ICABLE				
PIT/QUARRY - ARKANS LOCATION - MULTII		MTT EC			באתב כאת	PLED - 11/25/15
SAMPLED BY - D.DICK		MITES				EIVED = 12/01/15
SAMPLE FROM - TEST I						TED = 12/01/15
MATERIAL DESC SOI		V - R WALIE-	DAMEME	NT SOUNDIN		12/10/13
LAB NUMBER	-	20154015		20154016		20154017
SAMPLE ID		S848		S849		\$850
TEST STATUS	-	INFORMATION C				INFORMATION ONLY
STATION		384+00	-	384+00		384+00
LOCATION		06' LT	_	14' LT		20' LT
DEPTH IN FEET		0-4Z	_	0-4.5Z	=	0-5
MAT'L COLOR	-	BROWN	_	BROWN	=	BROWN
MAT'L TYPE	-		_		¥	
LATITUDE DEG-MIN-S				34 24		34 24 8.70
LONGITUDE DEG-MIN-S	SEC -	93 05 45.	20	93 05	41.60	93 05 41.60
% PASSING 2	IN		::		-	
1 1/2	IN		3.00	100	=	
3/4	IN		=	94	=	100
3/8	IN	100	-	90	-	98
NO.	4 -	96	:=:	85	=	96
NO.	10 -	92	-	79	=	93
NO.	40 -	88	-	72	-	90
NO.	80 -	86	*	68	=	88
NO. 2	200 -	72		62		78
LIOUID LIMIT	_	22	-	29	<b>2</b> 8	22
PLASTICITY INDEX			3 2	08	=0	05
AASHTO SOIL	_	A-4 (1)	14	A-4 (3)	<del>,=</del> 0	A-4 (2)
UNIFIED SOIL	_	11 1 (2)	1996	(-,	-	
% MOISTURE CONTENT	_	21.1	,	11.9	<b>1</b>	14.1
	(IN) -	8.0WX		3.25W	-	* * *
	(IN) -	1.5X	_		_	
AGG. BASE CRS. CL-7	(IN)	5.0	=	6.0	-	7.5.7
	-		= =		-	
	-		=		S <b>2</b> 5	
	-		=		; <del>=</del> 3	类
	-		==			
	_					

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

### MICHAEL BENSON, MATERIALS ENGINEER

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

MATERIAL DESC SOIL SURVEY - R VALUE- PAVEMENT SOUNDINGS  LAB NUMBER - 20154018 - 20154019 - 20154020  SAMPLE ID - 8851 - 5852 - 5853  TEST STATUS - INFORMATION ONLY - INFORMATION ONLY - 1NFORMATION ONLY - 20154020  STATION - 392+00 - 392+00 - 256400  LOCATION - 06' LT - 20' LT - 14' LT  DEPTH IN FEET - 0-5 - 0-5 - 0-5  MAT'L COLOR - BROWN - 6BROWN - 6BROWN - 6BROWN  MAT'L TYPE 34 24 12.80 - 34 24 12.90 - 34 23 5.30  LONGITUDE DEG-MIN-SEC - 93 05 33.80 - 93 05 33.80 - 93 07 47.60  * PASSING 2 IN 100 - 34' IN - 100 - 90 - 100  3/4 IN - 100 - 76 - 62 - 92  NO. 4 - 87 - 62 - 92  NO. 10 - 76 - 62 - 92  NO. 40 - 65 - 26 - 54  NO. 10 - 76 - 65 - 26  NO. 40 - 65 - 26  NO. 80 - 65 - 26  NO. 80 - 65 - 26  NO. 200 - 55 - 118  LIQUID LIMIT - 27 - ND - 18  AASHTO SOIL - A-4(2) - A-1-A(0) - A-6(2)  UNIFIED SOIL - A-4(2) - A-1-A(0) - A-6(2)  WHICH IN - 225	SPEC. REMARKS - NO SUPPLIER NAME - COUNTY NAME OF PROJECT - METER - NEW PROJECT ENGINEER - NEW PIT/QUARRY - ARKAN LOCATION - MULTI SAMPLED BY - D.DICK SAMPLE FROM - TEST	309 BE ASSI L SURVE SPECIFI NTIES ITZI PK OT APPL SAS PLE COU ERSON HOLE	Y SAMPLE CATION CHECK WY HWY. 290 (SAF ICABLE NTIES			MATERIA SPEC. Y SUPPLIE COUNTY/ DISTRIC DATE S. DATE RI DATE T.	AL ZEA ZT ZT AMI	NO 19 CODE - SSRVPS R - 2014 ID 1 PATE - 76 NO XX  PLED - 11/25/15 EIVED - 12/01/15 PED - 12/16/15
SAMPLE ID	MATERIAL DESC SOI	L SURVE	Y - R VALUE- PAV	EME	ENT SOUNDING	3S		427
SAMPLE ID	LAB NUMBER	_	20154018	_	20154019		_	20154020
TEST STATUS - INFORMATION ONLY - INFORMATION ONLY - INFORMATION ONLY STATION - 392+00 - 392+00 - 256+0		_						
STATION		_				N ONLY		
LOCATION - 06' LT 20' LT 14' LT  DEPTH IN FEET - 0-5 - 0-5 - 0-5  MAT'L COLOR BROWN BROWN BROWN  MAT'L TYPE - 34 24 12.80 - 34 24 12.90 - 34 23 5.30  LONGITUDE DEG-MIN-SEC - 93 05 33.80 93 05 33.80 93 07 47.60  % PASSING 2 IN 100 - 3/4 IN - 100 - 90 - 100  3/4 IN - 100 - 90 - 100  3/8 IN - 97 - 62 - 92  NO. 4 - 87 - 46 - 80  NO. 10 - 76 - 37 - 70  NO. 40 - 65 - 26 - 54  NO. 80 - 60 - 18 - 48  NO. 80 - 60 - 18 - 48  NO. 80 - 60 - 18 - 48  LIQUID LIMIT - 27 - ND - 32  MASHTO SOIL - A-4(2) - A-1-A(0) - A-6(2)  UNIFIED SOIL - A-4(2) - A-1-A(0) - A-6(2)  WHOISTURE CONTENT - 18.2 - 11.0 - 14.3  ACHMSC (IN) - 9.0W				_		II OIIII		
DEPTH IN FEET - 0-5				-				
MAT'L COLOR				-				
MAT'L TYPE				-			-	
LATITUDE DEG-MIN-SEC - 34 24 12.80 - 34 24 12.90 - 34 23 5.30 LONGITUDE DEG-MIN-SEC - 93 05 33.80 93 05 33.80 93 07 47.60  * PASSING 2 IN 100 - 100 - 100 3/8 IN 97 - 62 92 NO. 4 - 87 - 46 80 NO. 10 - 76 - 37 - 70 NO. 40 - 65 - 26 - 54 NO. 80 - 60 - 18 - 48 NO. 200 - 55 - 12 - ND - 32 PLASTICITY INDEX - 08 - NP - 11 AASHTO SOIL - A-4(2) - A-1-A(0) A-6(2) UNIFIED SOIL - A-4(2) - A-1-A(0) A-6(2)  ACHMSC (IN) - 9.0W ACHMSC ACHMSC (IN) - 9.0W		_	DICOMIN	-	Dicomi		-	
LONGITUDE DEG-MIN-SEC - 93 05 33.80 93 05 33.80 93 07 47.60  **PASSING 2 IN 100 - 100 - 3/4 IN 100 - 90 - 100 - 3/8 IN 97 - 62 - 92 - 80 - 100 - 90 - 100 - 90 - 100 - 90 - 100 - 90 - 100 - 90 - 100 - 90 - 100 - 90 - 100 - 90 - 100 - 90 - 100 - 90 - 100 - 90 - 100 - 90 - 100 - 90 - 100 - 90 - 9		CTC _	34 24 12 80	_	34 24	12 90	_	34 23 5.30
* PASSING 2 IN 100 100 3/4 IN 100 - 90 - 100 - 90 - 100 - 90 - 100 - 90 - 100 - 90 - 100 - 90 - 100 - 90 - 100 - 90 - 100 - 90 - 100 - 90 - 100 - 90 - 100 - 90 - 100 - 90 - 100 - 90 - 100 - 90 - 9	LATITODE DEG-MIN-	GEC -		_				
1 1/2 IN 100 - 100 - 100 3/4 IN 100 - 90 - 100 3/8 IN 97 - 62 - 92 NO. 4 - 87 - 46 - 80 NO. 10 - 76 - 37 - 70 NO. 40 - 65 - 26 - 54 NO. 80 - 60 - 18 - 48 NO. 200 - 55 - 12 - 43   LIQUID LIMIT - 27 - ND - 32 PLASTICITY INDEX - 08 - NP - 11 AASHTO SOIL - A-4(2) - A-1-A(0) - A-6(2) UNIFIED SOIL - 8 MOISTURE CONTENT - 18.2 - 11.0 - 14.3  ACHMSC (IN) - 9.0W ACHMBC (IN) - 2.25	LONGITUDE DEG-MIN-	SEC -	95 05 55.00		30 03	55.00		
3/4 IN 100				-			270	
3/8 IN 97	·			-				
NO. 4 - 87 - 46 - 80 NO. 10 - 76 - 37 - 70 NO. 40 - 65 - 26 - 54 NO. 80 - 60 - 18 - 48 NO. 200 - 55 - 12 - 43  LIQUID LIMIT - 27 - ND - 32 PLASTICITY INDEX - 08 - NP - 11 AASHTO SOIL - A-4(2) - A-1-A(0) - A-6(2) UNIFIED SOIL - 7 % MOISTURE CONTENT - 18.2 - 11.0 - 14.3  ACHMSC (IN) - 9.0W	3/4	IN	100	-			-	
NO. 10 - 76	3/8	IN	97	_			_	
NO. 40 - 65	NO.	4 -	87	_			-	
NO. 80 - 60 - 18 - 48 NO. 200 - 55 12 43  LIQUID LIMIT - 27 - ND - 32 PLASTICITY INDEX - 08 - NP - 11 AASHTO SOIL - A-4(2) - A-1-A(0) A-6(2) UNIFIED SOIL - 5 18.2 11.0 14.3  ACHMSC (IN) - 9.0W	NO.	10 -	76	_			-	
NO. 200 - 55 12 43  LIQUID LIMIT - 27 - ND - 32  PLASTICITY INDEX - 08 - NP - 11  AASHTO SOIL - A-4(2) - A-1-A(0) A-6(2)  UNIFIED SOIL - 18.2 11.0 14.3  ACHMSC (IN) - 9.0W	NO.	40 -	65	-	26		-	54
LIQUID LIMIT - 27 - ND - 32 PLASTICITY INDEX - 08 - NP - 11 AASHTO SOIL - A-4(2) - A-1-A(0) A-6(2) UNIFIED SOIL	NO.	80 -	60	-	18		7	48
PLASTICITY INDEX - 08 - NP - 11  AASHTO SOIL - A-4(2) - A-1-A(0) A-6(2)  UNIFIED SOIL	NO.	200 -	55		12			43
PLASTICITY INDEX - 08 - NP - 11  AASHTO SOIL - A-4(2) - A-1-A(0) A-6(2)  UNIFIED SOIL	I TOUTD I TMIT		27		ND		-	32
AASHTO SOIL - A-4(2) - A-1-A(0) A-6(2) UNIFIED SOIL	<del>-</del>	_		_			-	
UNIFIED SOIL 18.2 - 11.0 - 14.3  ACHMSC (IN) - 9.0W				_			-	
% MOISTURE CONTENT       -       18.2       11.0       14.3         ACHMSC       (IN) -       9.0W       -       -       -         ACHMBC       (IN) -       2.25       -       -       -		_	A-4(2)	_	A I A(U)		-	11 0 (2)
ACHMSC (IN) - 9.0W ACHMBC (IN) - 2.25			10.0	-	11 0		-	1/ 3
ACHMBC (IN) - 2.25	% MOISTURE CONTENT	_	18.2		11.0			14.5
	ACHMSC	(IN) -	9.0W	-			-	22
AGG.BASE CRS CL-7 (IN) - 6.0	ACHMBC	(IN) -	2.25	-	22		*	- A
	AGG.BASE CRS CL-7	(IN) ~	6.0	***			<i>≅</i> 0	/宣告
		-		120			20	
		_		=			-	
		-		-			=	
		-					-	
		-		_			-	
		-		-			-	

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

### MICHAEL BENSON, MATERIALS ENGINEER

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

DATE - 01/3 JOB NUMBER - 0613 FEDERAL AID NO TO B PURPOSE - SOID SPEC. REMARKS - NO S SUPPLIER NAME - COUN NAME OF PROJECT - MS PROJECT ENGINEER - NO PIT/QUARRY - ARKANS LOCATION - MULTIS SAMPLED BY - D.DICK SAMPLE FROM - TEST IMMATERIAL DESC SOID	MATERIAL SPEC. YEA SUPPLIER COUNTY/ST DISTRICT  DATE SAM DATE REC DATE TES	ID 1 PATE - 76 NO XX PLED - 11/25/15 EIVED - 12/01/15				
LAB NUMBER	_	20154021	-	20154022	-	20154023
SAMPLE ID	_		-	S855	#3	S856
TEST STATUS	_			INFORMATIO	ON ONLY -	INFORMATION ONLY
STATION				408+00		416+00
LOCATION	_	06' LT	-	14' LT		06' LT
DEPTH IN FEET	_	0-5		0-5	-	0-5
MAT'L COLOR	_	BROWN	=	BROWN	3	BROWN
MAT'L TYPE	-		72		-	
LATITUDE DEG-MIN-S	SEC -	34 24 25.30				34 24 33.30
LONGITUDE DEG-MIN-	SEC -	93 05 28.20		93 05	28.90	93 05 33.30
% PASSING 2	IN		-		<b>5</b> 7)	
1 1/2	IN		-		20	
3/4	IN	100	-	100	-	100
· ·	IN	99	-	99	=	96
	4 -		-	92	<b>=</b>	90
NO.			i	85	-	80 69
	40 -	58	-	71	: <del>-</del> 0	6.5
NO.		54	=	63 57	7	61
NO.	200 -	50		37		
LIQUID LIMIT	-	29	-	31	-	32
PLASTICITY INDEX	-	<del></del>	-	12	_	11
AASHTO SOIL	-	A-6(3)	_	A-6(4)	_	A-6(5)
UNIFIED SOIL	-		_		-	01 5
% MOISTURE CONTENT	_	10.3		6.3		21.7
ACHMSC	(IN) -	8.25W	_	3.25	-	8.5W
ACHMBC	(IN) -	1.5	-		-	1.5
AGG.BASE CRS CL-7	(IN) -	6.0	-	5.0	-	6.0
	_		-		-	
	_		-		-	
	_		-		-	i f
	-		=======================================		_	
	_		-		_	

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

AASHTO TESTS : T24 T88 T89 T90 T265

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### MICHAEL BENSON, MATERIALS ENGINEER

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

DATE - 01/:  JOB NUMBER - 061:  FEDERAL AID NO TO I  PURPOSE - SOII  SPEC. REMARKS - NO :  SUPPLIER NAME - COU  NAME OF PROJECT - M  PROJECT ENGINEER - N  PIT/QUARRY - ARKAN  LOCATION - MULTI  SAMPLED BY - D.DICK  SAMPLE FROM - TEST :  MATERIAL DESC SOI	309 BE ASSI L SURVE SPECIFI NTIES ITZI PK OT APPL SAS PLE COU ERSON HOLE	Y SAMPLE CATION CHECK WY HWY. 290 (SAI ICABLE NTIES			MATERIAI SPEC. YE SUPPLIEF COUNTY/S DISTRICT  DATE SA DATE RE DATE TE	E NO 21 L CODE - SSRVPS EAR - 2014 R ID 1 STATE - 76 F NO XX MPLED - 11/25/15 CEIVED - 12/01/15 STED - 12/16/15
LAB NUMBER	_	20154024		20154025		20154026
		20154024 S857		S858		- S859
SAMPLE ID TEST STATUS						- INFORMATION ONLY
STATION		416+00	=	416+00		424+00
LOCATION		14' LT	÷	20' LT		06' LT
DEPTH IN FEET	_		77	0-5		0-5
MAT'L COLOR		BROWN	ä	BROWN		BROWN
MAT'L TYPE	_		_			- -
LATITUDE DEG-MIN-	SEC -	34 24 33.30	=	34 24	33.20 -	34 24 40.50
LONGITUDE DEG-MIN-	SEC -	93 05 33.40		93 05	33.50	93 05 37.90
3/4 3/8 NO. NO. NO. NO.	IN IN IN 4 - 10 - 40 - 80 -	100 95 91 82 73 70 65		100 96 87 77 67 62 56		100 98 92 87 83 76
LIQUID LIMIT PLASTICITY INDEX	_	09	-		9	03
AASHTO SOIL	_	A-4(4)	7		55	A-4(0)
UNIFIED SOIL	_	11 1 (1)	_		(3	=
% MOISTURE CONTENT	_	24.3	_	24.5		21.6
ACHMSC	(IN) -	4.25W	_			9.0W
ACHMBC	(IN) -		-			2.5
AGG.BASE CRS CL-7	(IN) -	8.0	-	===		4.0
	_		-			-
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	_		-			<b>=</b> :
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REMARKS - W=MULTIPLE LAYERS, X=STRIPPED, Z=AUGER REFUSAL - LOCATIONS MEASURED FROM C.L. OF EXISTING RDWY.

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

								85		
DATE - 01/ JOB NUMBER - 061 FEDERAL AID NO TO PURPOSE - SOI SPEC. REMARKS - NO SUPPLIER NAME - COU NAME OF PROJECT - N PROJECT ENGINEER - N PIT/QUARRY - ARKAN	MATER SPEC. SUPPL COUNT DISTR	ENCE NO. EIAL CODE YEAR LIER ID. TY/STATE RICT NO.	-	2014 1 76 XX						
LOCATION - MULTI SAMPLED BY - D.DICI SAMPLE FROM - TEST	KERSON	INTIES					DATE	RECEIVED	-	11/25/15 12/01/15 12/16/15
MATERIAL DESC SO	IL SURV	EY - R	VA	LUE- PAV	EME	NT SOUNDI	1GS			
LAB NUMBER	-	201540	27		-	20154028		940		
SAMPLE ID	_	S860			-	S861		<b>*</b>		
TEST STATUS	-	INFORM	(TA	ON ONLY	H	INFORMATI	ON ONL	Υ -		
STATION	-	424+00	)		5	424+00		## 190 ## 190		
LOCATION		14' L	Γ		77	20' LT		=		
DEPTH IN FEET	-	0-5			*	0-5				
MAT'L COLOR	-	BROWN			==	BROWN		(#)		
MAT'L TYPE	-	2.4	2.4	40.50	77	34 24	10 10	22/		
LATITUDE DEG-MIN- LONGITUDE DEG-MIN-				37.90	-	93 05		-		
% PASSING 2	IN				**			:=:		
1 1/2	N				=			*		
	IN	100			_	100		-		
· ·	3 IN	97			-	98		. <del></del>		
	4 -	90			77	91 84		=		
NO. NO.		84 79			-	78		-		
NO.		74			_	74		;=: :=:		
	200 -	67				66				
LIQUID LIMIT	_	22				22		8#6		
PLASTICITY INDEX	_	05			-	05		· · · · · · · · ·		
AASHTO SOIL	-	A-4 (	1)		-	A-4(1)		3 <b>5</b> 26		
UNIFIED SOIL	-				-			(E) (E)		
% MOISTURE CONTENT	r -	20	. 4		-	20.7				
ACHMSC	(IN) -	4.7	5W		$\overline{}$			2		
AGG.BASE CRS CL-7	(IN) -	6.0	•		-	550		=		
	-				-			_		
	-				-			40		
	-				_			**		
	-				-			===		
	-				-			20 20		
	_				-			¥:		

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

### MICHAEL BENSON, MATERIALS ENGINEER

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

DATE - 12/16, JOB NUMBER - 061309 FEDERAL AID NO TO BE PURPOSE - SOIL S SPEC. REMARKS - NO SPE SUPPLIER NAME - COUNTE NAME OF PROJECT - MITS PROJECT ENGINEER - NOT PIT/QUARRY - ARKANSAS LOCATION - MULTIPLE SAMPLED BY - D. DICKER, SAMPLE FROM - TEST HOM MATERIAL DESC SOIL	ASSIGNED ASSIGNED EURVEY SAMPLE ECIFICATION CHECK LES ZI PKWY HWY. 290 (SAMAPPLICABLE E COUNTIES SON LE	FETY IMPVTS.)	MATERIAL CODE SPEC. YEAR SUPPLIER ID. COUNTY/STATE DISTRICT NO.  DATE SAMPLED DATE RECEIVED DATE TESTED	- RV - 2014 - 1 - 76 - XX
% PASSING 2 IN 1 1/2 IN 3/4 IN 3/8 IN NO.	- RV862 - INFORMATION ONLY - 101+00 - 22' RT - 0-5 - BROWN 34 16 52.50 - 93 09 40.10  N N N 100 N 92 R - 83	- 368+00 - 20' LT - 0-5 - BROWN - 34 24 93 05 5	93 - - - 100 - 96 - 90	4 RMATION ONLY 00 LT N 24 40.40
NO. 10 NO. 40 NO. 80 NO. 200 LIQUID LIMIT PLASTICITY INDEX AASHTO SOIL UNIFIED SOIL % MOISTURE CONTENT	0 - 66 0 - 58	- 59 - 49 - 45 - 41 - 29 - 09 - A-4(1)	- 86 - 82 - 79 - 74 - 26 - 08 - A-4	(4)
	-		- - - - - - -	

REMARKS -