## ARKANSAS DEPARTMENT OF TRANSPORTATION



## SUBSURFACE INVESTIGATION

IN		SALINE		COUNTY
STATE HIGHWAY	5	SECTION	7	
GARI	AND CO. LINE	E - BENTON (SAFETY	IMPVTS.) (	S)
FEDERAL AID PROJEC	CT NO	HSIP-0062(39)		
		001442		
STATE JOB NO.		061442		

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 23, 2016

TO:

Mr. Trinity Smith, Engineer of Roadway Design

SUBJECT:

Job No. 061442

Garland Co. Line - Benton (Safety Impvts) (S)

Route 5 Section 7 Saline County

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 and curve realignment of Highway 5 in seven locations from the Garland County Line to Benton. Samples were obtained in the existing travel lanes, shoulder, ditch line and along the new alignment. Sample locations were measured from centerline of the existing roadway and is noted as such on the logs.

Based on laboratory results of samples obtained, the subgrade soils consist primarily of moderately plastic sandy clay with varying amounts of shale fragments and gravel. 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 stations 1054+00 200 feet right of centerline at a depth of 3.0 feet; and at 1087+00 30 feet right of centerline at a depth of 1.0 foot.

### Section 1

Between stations 152+45 to 154+00 is a proposed cut right of centerline with an approximate depth of 34 feet. It is recommended that the slope be constructed on a 2:1 configuration. The remaining embankment and cut slopes are acceptable as shown in the cross sections.

### Section 2

Between stations 506+89 to 508+00 and 511+00 to 512+00 are proposed cuts of approximately 70 feet and 65 feet respectively. The cut slope may be constructed on a 2:1 configuration with 10 foot wide bench every 25 vertical feet. An alternative to the cut slope is to construct a soil nail wall at these locations. The wall could be constructed on a ½:1 configuration with a 10 foot bench every 20 vertical feet. This option would require less right of way, clearing, and excavation. It would serve as protection for slides that could occur during construction, as well as in the long term. An extensive subsurface investigation would be required if this option is selected to determine rock locations and soil properties. Each configuration is shown on select cross-sections within the station limits and illustrated in Figure 1.

The cross-sections for sections 3, 4, and 5 are acceptable as shown.

### Section 6

Between stations 1045+76 to 1048+00 and 1049+91 to 1055+00 are proposed cuts of approximately 57 feet and 77 feet respectively. The cut slope may be constructed on a 2:1 configuration with 10 foot wide bench every 25 vertical feet. An alternative to the cut slope is to construct a soil nail wall at these locations. The wall could be constructed on a ½:1 configuration

with a 10 foot bench every 20 vertical feet. This option would require less right of way, clearing, and excavation. It would serve as protection for slides that could occur during construction, as well as in the long term. An extensive subsurface investigation would be required if this option is selected to determine rock locations and soil properties. Each configuration is shown on select cross-sections within the station limits and illustrated in Figure 1.

## Section 7

At station 1085+79 is a cut of approximately 24 feet. The cut slope may be constructed on a 2:1 configuration. The remaining cut slopes and embankments are acceptable as shown.

The maximum embankment height within the project limits is approximately 17 feet. The embankments may be constructed with locally available unspecified material utilizing the 3:1 slope configuration shown in the currently available cross-sections. Rock from the cuts may be used to construct the embankments on a 2:1 slope configuration if the slopes are plated with rip rap.

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 Bryant.

### 2. Asphalt Concrete Hot Mix

Type	Asphalt Cement %	Mineral Aggregate %
Surface Course	4.9	95.1
Binder Course	4.2	95.8
Base Course	3.8	96.2

MCB:pt:bjj Attachment

CC:

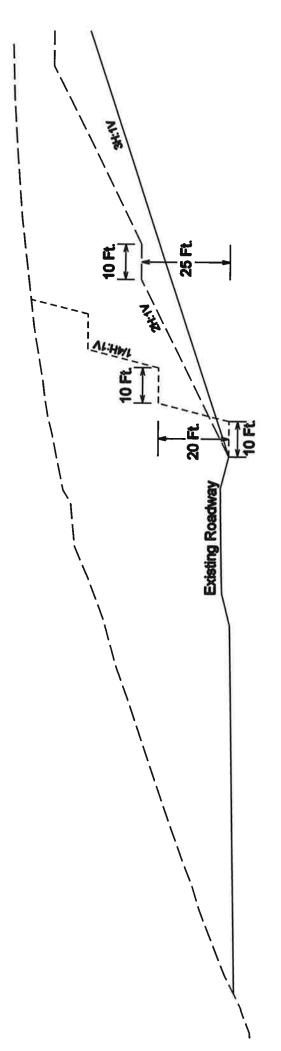
State Constr. Eng. – Master File Copy

District 6 Engineer

System Information and Research Div.

G. C. File

Michael C. Benson Materials Engineer



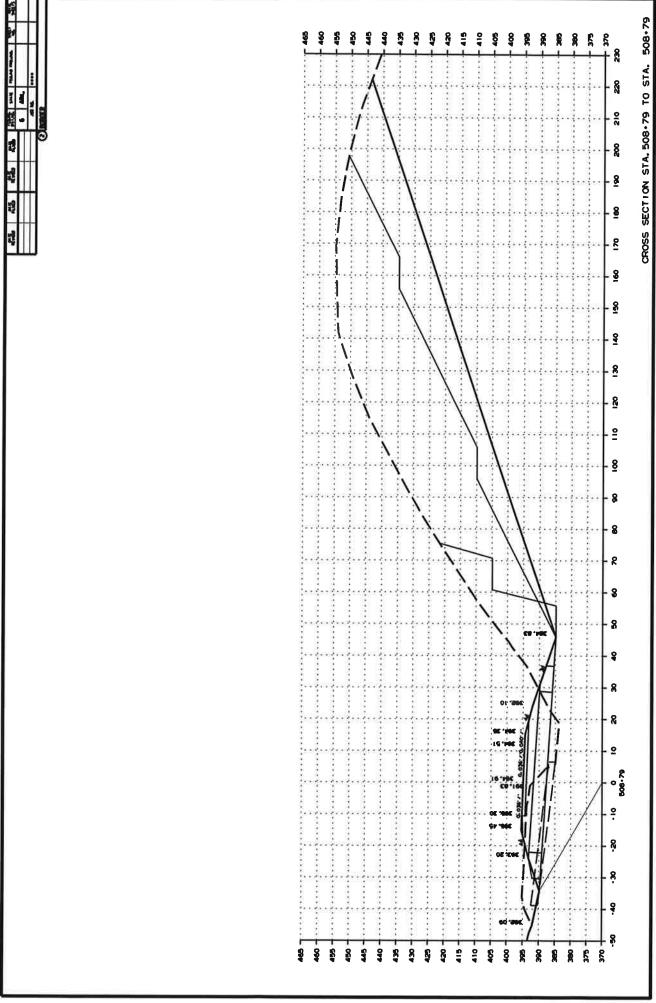
# Figure 1 - Alternative Slope Configurations

Proposed 3H:1V Cut Slopes

Soil Nail Wall Alternative - 10 Ft. Catchment basin at the bottom, 1/4H:1V cut slopes with a 10 Ft. wide bench every 20 vertical feet.

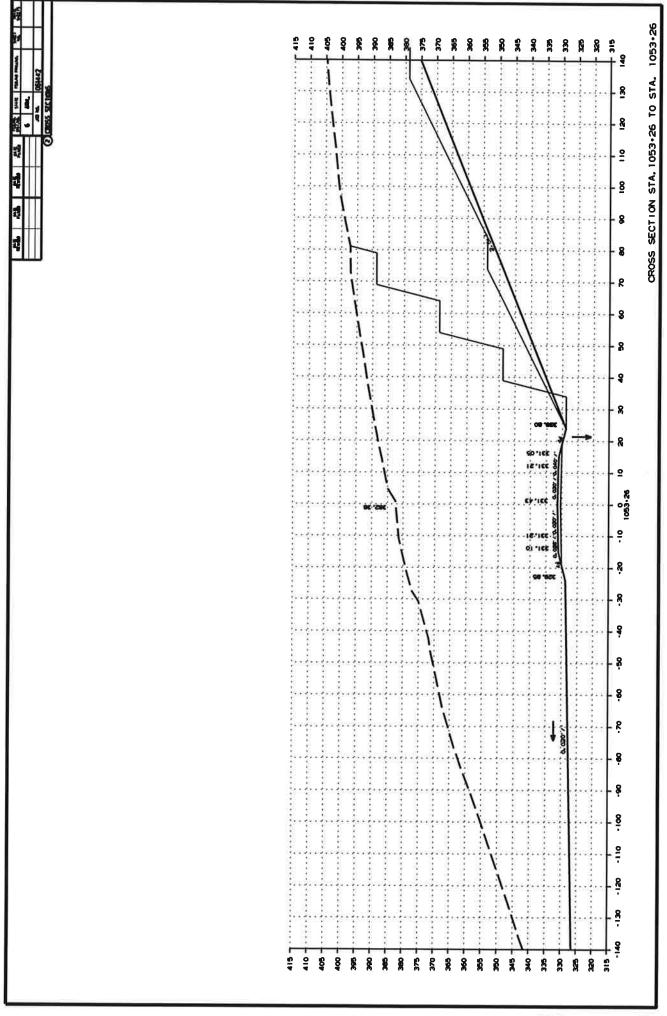
2H:1V Alternative - Cuts on a 2H:1V slope with a 10 Ft. wide bench every 25 vertical feet.

CROSS SECTION STA, 506.88 TO STA, 506.88 - 8 



1045.76 CROSS SECTION STA, 1045.76 TO STA. - ≗ - 8 9 R 8 0 1045-76 9 Ŗ ٠Ŗ 9 9 . 120 8 315

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

### MICHAEL BENSON, MATERIALS ENGINEER

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

JOB NUMBER - 061	17/2016 442 ND CO.LINE - BENTON (SAFETY I		E - SSRVPS - 2014 - 1 - 62 - 06
*	STATION LIMITS	R-VALUE AT 240 psi	*
*****	**************************************	**************************************	*****
		5.001	
REMARKS -	STA.1062+00	5691	
72	STA.1094+00	7075	

AASHTO TESTS : T190

JOB NAME: GARLAND CO.LINE - BENTON (SAFETY IMPRVTS.)(S)

Materials Division

**COUNTY NO.** 62 **DATE TESTED** 2/10/2016

Michael Benson, Materials Engineer

	LOC. Di	EPTH	COLOR	#4	#10	#40	#80	#200	L.L.	<i>P.I.</i>	SOIL CLASS	LAB#:	%MOISTURE
0146+0	18' RT (	0-5	BR/GR	74	55	33	26	E S 22	ND	NP	A-1-B(0)	RV972	
0518+0	18' LT	0-5	BROWN	96	89	77	69	60	23	05	A-4(1)	RV973	
0534+0	20' RT	0-5	BROWN	86	75	65	60	55	31	11	A-6(4)	RV974	
0731+0	20' RT	0-5	BROWN	90	84	75	70	65	33	11	A-6(5)	RV975	
0765+0	20' LT	0-5	GRAY	94	85	73	66	59	32	11	A-6(4)	RV976	
1062+0	19' LT	0-5	BROWN	83	67	41	32	27	29	05	A-2-4(0)	RV977	
1094+0	22' LT	0-5	BROWN	90	82	69	63	48	29	10	A-4(2)	RV978	
0146+0	06' RT	0-5	BR/GR	92	82	65	56	49	32	12	A-6(3)	S919	20.3
0146+0	13' RT	0-5	BROWN	94	82	63	55	49	30	10	A-4(2)	S920	9.9
0146+0	18' RT	0-5	BR/GR	95	81	56	45	39	35	15	A-6(2)	S921	18.4
0162+0	06' RT	0-5	BROWN	93	88	78	74	70	34	16	A-6(9)	S922	19.5
0162+0	13' RT	0-5	BROWN	89	81	71	67	64	34	15	A-6(7)	S923	16.2
0162+0	22' RT	0-5	BROWN	93	85	77	74	72	39	18	A-6(12)	S924	17.2
0503+0	06' RT	0-5	BROWN	91	80	68	64	61	30	12	A-6(5)	S925	11.9
0503+0	13' RT	0-5	BROWN	89	76	65	60	54	31	13	A-6(4)	S926	12.2
0503+0	17' RT	0-5	BROWN	98	92	81	76	67	28	13	A-6(6)	S927	22.2
0518+0	06' LT	0-5	BROWN	97	88	76	70	63	37	19	A-6(10)	S928	24.9
0518+0	13' LT	0-5	BROWN	94	88	80	74	64	29	11	A-6(5)	S929	19.5
0518+0	18' LT	0-5	BROWN	95	86	74	67	56	26	11	A-6(3)	S930	19.3
0534+0	06' RT	0-5	BROWN	95	87	78	72	67	33	17	A-6(9)	S931	23.5
0534+0	13' RT	0-5	BROWN	88	79	70	65	60	26	10	A-4(3)	S932	22.1
0534+0	20' RT	0-5	BROWN	93	85	76	71	67	33	16	A-6(8)	S933	19
0542+0	19' RT	0-5	BROWN	98	92	81	73	64	27	11	A-6(4)	S934	28.2
0550+0	06' LT	0-5	BROWN	96	87	74	68	63	35	15	A-6(7)	S935	26.1
0550+0	13' LT	0-5	BROWN	85	72	58	53	47	31	13	A-6(3)	S936	18.2
0550+0	30' LT	0-5	BROWN	84	74	61	51	41	24	7	A-4(0)	S937	15.9

STA.#	LOC. DEPTH	COLOR	#4	#10	#40	#80	#200	L.L.	P.I.	SOIL CLASS	<i>LAB</i> #:	%MOISTURE
0715+0	06' RT 0-5	BROWN	100	100	100	100	92	48	24	A-7-6(24)	S938	21.5
0715+0	13' RT 0-5	BROWN	100	100	100	100	96	53	26	A-7-6(29)	S939	22.7
0715+0	21' RT 0-5	BROWN	92	89	87	86	82	42	18	A-7-6(15)	S940	21.2
0723+0	06' LT 0-5	BROWN	97	95	92	90	86	49	28	A-7-6(25)	S941	26.8
0723+0	13' LT 0-5	BROWN	99	97	92	89	84	52	30	A-7-6(27)	S942	23.8
0723+0	21' LT 0-5	BROWN	81	70	61	57	52	40	22	A-6(8)	S943	16.9
0731+0	06' RT 0-5	BROWN	96	89	79	75	70	37	14	A-6(9)	S944	20.4
0731+0	13' RT 0-5	BROWN	99	97	91	89	86	41	18	A-7-6(16)	S945	23.7
0731+0	20' RT 0-5	BROWN	98	95	88	81	75	33	12	A-6(8)	S946	9.7
0757+0	06' RT 0-5	GRAY	98	96	92	88	81	25	8	A-4(4)	S947	20
0757+0	13' RT 0-5	BROWN	96	90	84	80	74	28	11	A-6(6)	S948	15.4
0757+0	20' RT 0-5	GRAY	97	93	84	79	72	29	11	A-6(6)	<b>S</b> 949	18.9
0765+0	06' LT 0-5	GRAY	97	93	85	81	73	31	14	A-6(8)	S950	19.2
0765+0	13' LT 0-5	GRAY	93	87	80	76	68	30	12	A-6(6)	S951	21.1
0765+0	20' LT 0-5	GRAY	97	89	81	75	67	31	12	A-6(6)	S952	20.5
0771+0	24' RT 0-5	BROWN	96	92	84	80	72	31	11	A-6(6)	S953	21.7
0775+0	06' LT 0-5	BROWN	100	97	90	87	83	41	21	A-7-6(17)	S954	26.7
0775+0	13' LT 0-5	BROWN	98	91	84	82	76	37	18	A-6(12)	S955	21.7
0775+0	21' LT 0-5	BR/GR	96	86	64	60	56	31	14	A-6(5)	S956	20.3
1038+0	06' RT 0-5	BROWN	95	83	68	62	57	28	9	A-4(3)	S957	18.4
1038+0	13' RT 0-5	BROWN	94	81	- 66	61	56	31	10	A-4(3)	S958	17.1
1038+0	22' RT 0-5	BROWN	98	88	67	59	53	33	10	A-4(3)	S959	14.6
1044+0	25' LT 0-5	BROWN	87	76	61	54	46	32	10	A-4(2)	S960	17.1
1054+0	200' RT 0-3Z	BROWN	90	80	63	58	54	32	8	A-4(2)	S961	22.6
1062+0	06' LT 0-5	BROWN	97	88	69	60	54	25	6	A-4(1)	S962	32.4
1062+0	13' LT 0-5	BROWN	95	87	73	68	59	29	7	A-4(2)	S963	29.1
1062+0	19' LT 0-5	BROWN	76	59	38	29	23	29	8	A-2-4(0)	S964	27.6
1077+0	06' RT 0-5	BROWN	94	86	- 71	65	59	33	14	A-6(6)	S965	10.5

STA.#	LOC. Di	<b>EPTH</b>	COLOR	#4	#10	#40	#80	#200	L.L	P.I.	SOIL CLASS	<i>LAB</i> #:	%MOISTURE
1077+0	13' RT (	0-5	BR/GR	80	68	55	50	E S 47	31	10	A-4(2)	S966	12.8
1077+0	22' RT (	0-5	BROWN	95	83	66	58	51	27	8	A-4(1)	S967	15.8
1087+0	30' RT	0-1Z	BROWN	69	60	49	41	31	25	7	A-2-4(0)	S968	13.2
1094+0	06' LT	0-5	BROWN	94	87	76	71	57	35	18	A-6(7)	S969	20.5
1094+0	13' LT (	0-5	BROWN	97	91	82	75	61	33	18	A-6(8)	S970	16.5
1094+0	22' LT	0-5	BROWN	98	93	84	77	59	34	15	A-6(6)	S971	23.3

DATE TESTED

Arkansas State Highway Transporation Department Materials Division

 $JOB\ NAME$ : Garland Co.Line - Benton (Safety IMPRVTS.)(S)

COUNTY NO.

0162+00

061442

JOB:

2/10/2016

Michael Benson, Materials Engineer

PAVEMENT SOUNDINGS PCCP PCCP PCCP 0.9 ACHIMBC ACHMBC ACHMBC PCCP PCCP PCCP PCCP PCCP PCCP PCCP PCCP 3.5 ACHIMBC ACHIMSC ACHIMBC ACHMBC ACHIMBC ACHIMBC ACHIMBC ACHIMSC ACHIMSC ACHIMBC ACHIMBC ACHIMBC 3.25W 5.0W PCCP PCCP PCCP 5.5 4.5 5.25 CHIP SEAL CHIP SEAL CHIP SEAL ACHIMSC ACHIMSC **ACHIMSC** ACHIMSC ACHIMSC ACHIMSC ACHIMSC ACHMSC ACHIMSC ACHIMSC ACHIMSC ACHMSC 4.25WX 6.0WX 5.0W 9.5W 7.5W 4.5W 5.5W 2.5 25 06' RT 13' RT 22' RT 06' RT 13' RT 13' LT 06' RT 20' RT 0146+00 13' RT 0146+00 18' RT 06' RT 17' RT 06' LT 18' LT 13' RT STA.# LOC. 0146+00 0162+00 0162+00

0503+00

0503+00

0503+00

0518+00

0518+00

0518+00

0534+00

0534+00

0534+00

Friday, February 12, 2016

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

AGG.BASE CRS CL-7

ACHIMBC

ACHIMSC

19' RT

0542+00

AGG.BASE CRS CL-7

**ACHIMBC** 

ACHIMSC

17 ,90

0550+00

2.0

Page 2 of 3

												AGG.BASE CRS CL-7	ī					AGG.BASE CRS CL-7	1	AGG.BASE CRS CL-7	7.0												
AGG.BASE CRS CL-7				AGG.BASE CRS CL-7	{ <b>(\$</b> )}	AGG.BASE CRS CL-7	1	AGG.BASE CRS CL-7	7.0		9.	PCCP	Ĭ					PCCP	0.9	PCCP	ı	PCCP	1	PCCP	0.9	PCCP	1						Vinderman Application of the Control
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ACHIMSC 2.0	ACHIMSC —	ACHMSC 3.25W	ACHIMSC 9.0	ACHIMSC	1	ACHIMSC	4.0WX	ACHIMSC	7.0W	ACHIMSC	ı	ACHIMSC	ı	ACHIMSC	5.0W	ACHMSC	7.5W	ACHIMSC	3.5WX	ACHMSC	2.5	ACHIMSC	1	ACHIMSC	4.0	ACHIMSC	2.0	ACHIMSC	1	ACHIMSC	ı	ACHMSC	4.0vv
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0550+00	0550+00	0715+00	0715+00	0715+00		0723+00 06' LT		0723+00 13'LT		0723+00		0731+00		0731+00		0731+00 13'RT		0757+00		00+29		0757+00		0765+00		0765+00		0765+00		0771+00 24'RT		0775+00 06' LT	Name and Address of the Owner, where

PAVEMENT SOUNDINGS

STA.# LOC.

Friday, February 12, 2016

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

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ACHMSC 9.0W	ACHMSC	1	ACHIMSC 3.5W	ACHIMSC	ACHIMSC	1	ACHMSC	1	200'RT ACHMSC	ı	ACHIMSC	5.5W	ACHMSC	7.0WX	ACHIMSC	ı	ACHMSC	5.0W	ACHMSC	3.9W	ACHIMSC	ı	ACHMSC	ı	ACHMSC	ı	ACHMSC	4.0W	ACHMSC 5.5WX
13' LT	21' LT		06' RT	13' RT	22' RT		25' LT		200' RT		06' LT		13' LT		19' LT		06' RT		13' RT		22' RT		30' RT		22' LT		17 ,90		13' LT
0775+00 13'LT	00+5/10		1038+00	1038+00	1038+00		1044+00		1054+00		1062+00 06'LT		1062+00		1062+00		1077+00		1077+00		1077+00		1087+00		1094+00		1094+00		1094+00

PAVEMENT SOUNDINGS

STA.# LOC.

Job No. Date Sampled: Date Tested: Name of Project:	061442 1/20/16 January 20, 2016 GARLAND CO. LINE - BENTON (SAFETY IMPVTS	Material Code Station No.: Location: S) (S)	SSRVPS 146+00 18' RT	
County: Sampled By: Lab No.: Sample ID: LATITUDE:	Code: 62 Name: SALINE DICKERSON 20154193 RV972	Depth: AASHTO Class: Material Type (1 or 2): LONGITUDE:	*	0-5' A-1-B(0) 2
1. Testing Inform		or Ne No		N.
	Preconditioning - Permanent Strain > 5% (Y=Yes Testing - Permanent Strain > 5% (Y=Yes or N=No Number of Load Sequences Completed (0-15)	·		N N 15
2. Specimen Info	ormation:			
•	Specimen Diameter (in):		100	
	Тор			3.96
	Middle			3.93
	Bottom			3.93
	Average			3.94
	Membrane Thickness (in):			0.01
	Height of Specimen, Cap and Base (in):			8.04
	Height of Cap and Base (in):			0.00
	Initial Length, Lo (in):		585	8.04
	Initial Area, Ao (sq. in):			12.12
	Initial Volume, AoLo (cu. in):			97.48
3. Soil Specimer	ı Weight:			
	Weight of Wet Soil Used (g):			3197.60
4. Soil Properties	e*			
4. Son Properties	Optimum Moisture Content (%):			14.0
	Maximum Dry Density (pcf):		1000	113.7
	95% of MDD (pcf):			108.0
	In-Situ Moisture Content (%):			N/A
E Spesimen De-	portion			
5. Specimen Pro	Wet Weight (g):			3197.60
	Compaction Moisture content (%):			13.6
	Compaction Woisture Content (70).			124.99
	Compaction Dry Density (pcf):			110.02
	Moisture Content After Mr Test (%):		196	13.6
6. Quick Shear T	est (Y=Yes, N=No, N/A=Not Applicable):			#VALUE!
7 Positions Made	ulue Me	007779	م) <u>۸ ۸ ۵</u> 7355	7(02)\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\
7. Resilient Mode	uius, Mii:	9066(8	cy -0.27257	7(S3)^0.32112
8. Comments	2 <del></del>			
9. Tested By:	C.GARRETT Date	: <u>January 20, 2016</u>	•	

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

SSRVPS 146+00 Material Code Station No.: 1/20/16 061442 Date Sampled: Job No.

GARLAND CO. LINE - BENTON (SAFETY IMPVTS) (S) January 20, 2016 Name of Project: Date Tested:

SALINE Name: Code: 62 County:

**AASHTO Class:** Depth: DICKERSON 20154193 Sampled By: Lab No.:

A-1-B(0)

Material Type (1 or 2):

LONGITUDE:

0-5

18' RT

Location:

RV972 LATITUDE: Sample ID:

_			_	_							_										
Resilient	Modulus				Ā	psi	13,347	11,449	10,460	9,570	9,110	12,134	9,917	8,685	8,131	7,883	10,034	8,057	7,043	6,665	6.530
Resilient	Strain				13	in/in	0.00014	0.00032	0.00051	0.00074	0.00096	0.00015	0.00036	0.00060	0.00085	0.00110	0.00018	0.00043	0.00072	0.00101	0.00129
Average	Recov Def.	LVDT 1	and 2		Havg	Ę	0.00110	0.00254	0.00412	0.00592	0.00772	0.00120	0.00288	0.00485	0.00683	0.00883	0.00143	0.00347	0.00581	0.00811	0.01034
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	8.8	1.8	3.6	5.2	6.9	8.7	1.8	3.5	5.1	6.7	8.4
Actual	Applied	Мах.	Axial	Stress	Smax	isd	2.0	3.8	5.7	7.5	9.4	2.0	3.8	5.5	7.3	9.3	2.0	3.7	5.3	7.1	9.0
Actual	Applied	Contact	Load		Pcontact	sql	2.7	2.7	3.5	6.0	8.5	2.7	2.7	2.7	5.1	7.5	2.7	2.7	2.8	4.3	6.8
Actual	Applied	Cyclic Load			P <sub>cyclic</sub>	sql	22.1	43.8	65.0	85.4	106.1	21.9	43.1	63.5	83.8	104.9	, 21.7	42.2	61.7	81.5	101.8
Actual	Applied	Max. Axial	Load		P <sub>max</sub>	sql	24.8	46.5	68.5	91.4	114.6	24.6	45.8	66.3	88.8	112.5	24.4	44.9	64.5	85.9	108.6
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			S3	psi	0.9	0.9	0.9	6.0	0.9	4.0	4.0	4.0	4.0	4.0	2.0	2.0	2.0	2.0	2.0
		PARAMETER			DESIGNATION	TINO	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

January 20, 2016 DATE DATE C.GARRETT REVIEWED BY TESTED BY

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

Job No. 061442 Material Code SSRVPS

Date Sampled: 1/20/16 Station No.: 146+00

Date Tested: January 20, 2016 Location: 18' RT

Name of Project: GARLAND CO. LINE - BENTON (SAFETY IMPVTS) (S)

County: Code: 62 Name: SALINE

Sampled By:DICKERSONDepth: 0-5'Lab No.:20154193AASHTO Class: A-1-B(0)Sample ID:RV972Material Type (1 or 2): 2

LATITUDE: LONGITUDE:

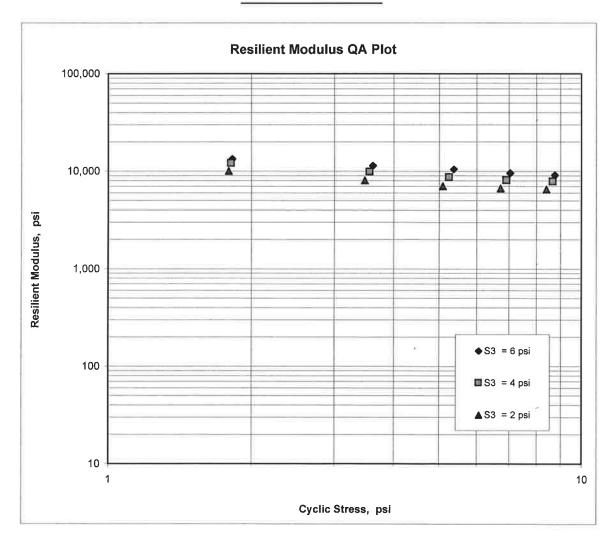
$$M_R = K1 (S_C)^{K2} (S_3)^{K5}$$

K1 = 9,066

K2 = -0.27257

K5 = 0.32112

 $R^2 = 0.99$ 



Job No. Date Sampled: Date Tested: Name of Project:	061442 12/3/15 February 9, 2016 GARLAND CO.LINE - BENTON (SAFETY IMPROV	Material Code Station No.: Location: EMENTS)(S)	SSRVPS 518+00 18' LT		
County: Sampled By: Lab No.: Sample ID: LATITUDE:	Code: 62 Name: SALINE T.FRAZIER 20154194 RV973	Depth: AASHTO Class: Material Type (1 or 2): LONGITUDE:	20	0-5 A-4(1) 2	
1. Testing Inform					
	Preconditioning - Permanent Strain > 5% (Y=Yes or Testing - Permanent Strain > 5% (Y=Yes or N=No)				N N
	Number of Load Sequences Completed (0-15)				15
2. Specimen Info	ormation:		9		
•	Specimen Diameter (in):				
	Тор			(	3.95
	Middle			(	3.94
	Bottom			(	3.95
	Average			(	3.95
	Membrane Thickness (in):			(	0.00
	Height of Specimen, Cap and Base (in):				3.02
	Height of Cap and Base (in):		13		0.00
	Initial Length, Lo (in):				3.02
	Initial Area, Ao (sq. in):				2.23
	Initial Volume, AoLo (cu. in):			98	3.11
3. Soil Specimer	. Weight:				
o. con opcomer	Weight of Wet Soil Used (g):			3262	2.40
4. Soil Properties					
in oon troportio	Optimum Moisture Content (%):		<		13.6
	Maximum Dry Density (pcf):				15.3
	95% of MDD (pcf):				09.5
	In-Situ Moisture Content (%):				N/A
5. Specimen Pro	perties:				
	Wet Weight (g):			3262	2.40
	Compaction Moisture content (%):				13.6
	Compaction Wet Density (pcf):			126	6.70
	Compaction Dry Density (pcf):			11	1.53
	Moisture Content After Mr Test (%):			•	12.8
6. Quick Shear T	est (Y=Yes, N=No, N/A=Not Applicable):			#VAL	UE!
7. Resilient Mod	ulus, Mr:	8353(S	c)^-0.22065	5(S3)^0.41	138
8. Comments					
					_
9. Tested By:	RC Date:	February 9, 2016			

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

Material Code Station No.: Location: February 9, 2016 GARLAND CO.LINE - BENTON (SAFETY IMPROVEMENTS)(S) 061442 12/3/15 Name of Project: Date Sampled: Date Tested: Job No.

SSRVPS 518+00 18' LT

> AASHTO Class: Depth: SALINE Name: Code: 62 T.FRAZIER 20154194 RV973 Sampled By: Sample ID: Lab No.: County:

LATITUDE:

Material Type (1 or 2): LONGITUDE:

A-4(1)

0-5

	Chamber	Nominal	Actual	Actual	Actual	Actual	Actual	Actual	Average	Resilient	Resilient
	Confining	Maximum	Applied	Applied	Applied	Applied	Applied	Applied	Recov Def.	Strain	Modulus
PARAMETER	Pressure	Axial	-	Cyclic Load	Contact	Max.	Cyclic	Contact	LVDT 1		
		Stress	Load		Load	Axial	Stress	Stress	and 2		
						Stress					
DESIGNATION	S	Scyclic	P <sub>max</sub>	Poyolic	Pcontact	S <sub>max</sub>	Scyclic	Scontact	Havg	ນ້	M
UNIT	isd	psi	sql	sql	lbs	psi	psi	psi	ï	in/in	psi
Sequence 1	6.0	2.0	24.8	22.1	2.8	2.0	1.8	0.2	0.00098	0.00012	14,821
Sequence 2	6.0	4.0	46.8	44.0	2.8	3.8	3.6	0.2	0.00209	0.00026	13,801
Sequence 3	6.0	6.0	68.9	65.2	3.7	5.6	5.3	0.3	0.00333	0.00042	12,825
Sequence 4	6.0	8.0	91.1	85.0	6.2	7.4	6.9	0.5	0.00483	09000.0	11,528
Sequence 5	0.9	10.0	113.1	104.4	9.8	9.2	8.5	0.7	0.00639	0.00080	10,717
Sequence 6	4.0	2.0	24.7	21.9	2.8	2.0	1.8	0.2	0.00113	0.00014	12,718
Sequence 7	4.0	4.0	45.5	42.6	2.8	3.7	3.5	0.2	0.00253	0.00032	11,027
Sequence 8	4.0	6.0	65.5	62.6	2.8	5.4	5.1	0.2	0.00414	0.00052	9,915
Sequence 9	4.0	8.0	88.1	82.9	5.3	7.2	6.8	0.4	0.00572	0.00071	9,498
Sequence 10	4.0	10.0	110.1	102.2	7.8	0.6	8.4	9.0	0.00738	0.00092	9,079
Sequence 11	. 2.0	2.0	24.1	21.3	2.7	2.0	1.7	0.2	0.00136	0.00017	10,298
Sequence 12	2.0	4.0	43.6	40.8	2.8	3.6	3.3	0.2	0.00316	0.00039	8,453
Sequence 13	2.0	6.0	62.3	59.4	2.9	5.1	4.9	0.2	0.00511	0.00064	7,621
Sequence 14	2.0	8.0	83.0	78.5	4.5	8.9	6.4	0.4	0.00699	0.00087	7,359
Sequence 15	2.0	10.0	104.6	97.6	7.0	8,5	8.0	9.0	0.00881	0.00110	7,262

February 9, 2016

DATE DATE

REVIEWED BY

TESTED BY

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

Job No.

061442

Material Code SSRVPS

Date Sampled:

12/3/15

**Station No.:** 518+00

**Date Tested:** 

February 9, 2016

Location: 18' LT

Name of Project: GARLAND CO.LINE - BENTON (SAFETY IMPROVEMENTS)(S)

Name: SALINE

County:

Code: 62

Depth: 0-5

Sampled By:

T.FRAZIER

Lab No .:

20154194

AASHTO Class: A-4(1)

Sample ID:

**RV973** 

Material Type (1 or 2): 2

LATITUDE:

LONGITUDE:

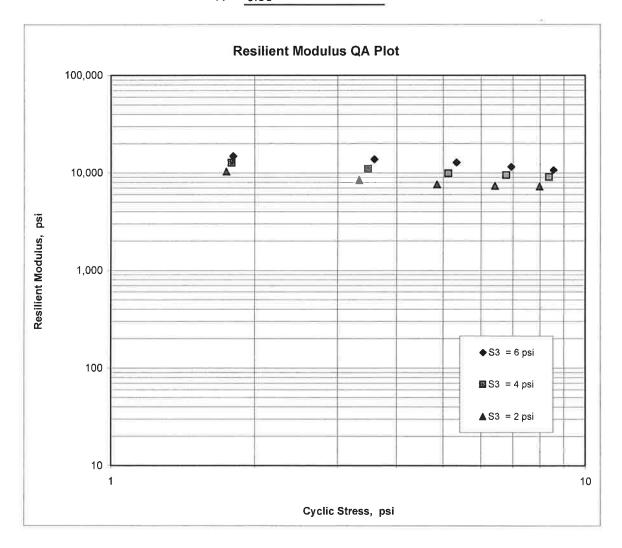
$$M_R = K1 (S_C)^{K2} (S_3)^{K5}$$

K1 = 8,353

K2 = -0.22065

K5 = 0.41138

 $R^2 = 0.98$ 



Job No.  Date Sampled:  Date Tested:  Name of Project:	061442 12/3/15 February 9, 2016 GARLAND CO.LINE - BENTON (SAFETY IMPROV	Material Code Station No.: Location: VEMENTS)(S)	SSRVPS 0534+00 20' RT
County: Sampled By: Lab No.: Sample ID: LATITUDE:	Code: 62 Name: SALINE T.FRAZIER 20154195 RV974	Depth: AASHTO Class: Material Type (1 or 2): LONGITUDE:	0-5 A-6(4) 2
1. Testing Inform	nation:		•
	Preconditioning - Permanent Strain > 5% (Y=Yes Testing - Permanent Strain > 5% (Y=Yes or N=No Number of Load Sequences Completed (0-15)		N N 15
2. Specimen Info	ormation:		
	Specimen Diameter (in):  Top Middle Bottom Average Membrane Thickness (in): Height of Specimen, Cap and Base (in): Height of Cap and Base (in): Initial Length, Lo (in): Initial Area, Ao (sq. in):		3.96 3.95 3.95 3.95 0.00 8.03 0.00 8.03 12.27
	Initial Volume, AoLo (cu. in):		98.57
3. Soil Specimer	n Weight:		
·	Weight of Wet Soil Used (g):		3095.20
4. Soil Propertie	s.		
a. com repende	Optimum Moisture Content (%): Maximum Dry Density (pcf): 95% of MDD (pcf): In-Situ Moisture Content (%):		15.7 110 104.5 N/A
5. Specimen Pro	perties:		
	Wet Weight (g): Compaction Moisture content (%): Compaction Wet Density (pcf): Compaction Dry Density (pcf): Moisture Content After Mr Test (%):		3095.20 15.8 119.65 103.32 15.4
6. Quick Shear T	est (Y=Yes, N=No, N/A=Not Applicable):		#VALUE!
7. Resilient Mod	ulus, Mr:	11674(S	c)^-0.28715(S3)^0.29641
8. Comments	0		
O Tooted Dec	DED Det	2. February 0, 2016	
9. Tested By:	DEB Date	e: <u>February 9, 2016</u>	

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

SSRVPS 0534+00 20'RT

Material Code Station No.: Location: February 9, 2016 061442 12/3/15 Date Sampled: Date Tested: Job No.

Name of Project: GARLAND CO.LINE - BENTON (SAFETY IMPROVEMENTS)(S)

Depth: SALINE Name: **Code:** 62 T.FRAZIER Sampled By: County:

Sample ID: RV974 LATITUDE:

20154195

Lab No.:

Material Type (1 or 2): 2

LONGITUDE:

0-5

	Chamber	Nominal	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	Max.	Cyclic	Contact	LVDT 1		
		Stress	Load		Load	Axial	Stress	Stress	and 2		
						Stress					
DESIGNATION	လိ	Scyclic	P <sub>max</sub>	Peyolic	Pcontact	Smax	Scyclic	Scontact	H <sub>avg</sub>	ŭ	Ž
UNIT	psi	psi	lbs	sql	sql	psi	psi	psi	ļ	in/in	psi
Sequence 1	0.9	2.0	25.3	22.6	2.7	2.1	1.8	0.2	0.00093	0.00012	15,912
Sequence 2	0.9	4.0	47.6	44.8	2.8	3.9	3.6	0.2	0.00198	0.00025	14,776
Sequence 3	6.0	0.9	70.0	66.4	3.6	5.7	5.4	0.3	0.00326	0.00041	13,305
Sequence 4	0.9	8.0	92.7	86.6	6.1	7.6	7.1	0.5	0.00505	0.00063	11,210
Sequence 5	0.9	10.0	115.0	106.5	8.5	9.4	8.7	0.7	0.00698	0.00087	086'6
Sequence 6	4.0	2.0	25.3	22.7	2.7	2.1	1.8	0.2	0.00106	0.00013	14,010
Sequence 7	4.0	4.0	47.0	44.3	2.7	3.8	3.6	0.2	0.00231	0.00029	12,524
Sequence 8	4.0	6.0	68.1	65.4	2.7	5.5	5.3	0.2	0.00384	0.00048	11,124
Sequence 9	4.0	8.0	90.8	85.6	5.2	7.4	7.0	0.4	0.00562	0.00070	9,975
Sequence 10	4.0	10.0	112.8	105.2	7.7	9.2	8.6	9.0	0.00756	0.00094	9,094
Sequence 11	2.0	2.0	24.9	22.3	2.6	2.0	1.8	0.2	0.00123	0.00015	11,902
Sequence 12	2.0	4.0	46.2	43.5	2.7	3.8	3.5	0.2	0.00276	0.00034	10,291
Sequence 13	2.0	0.9	66.4	63.7	2.7	5.4	5.2	0.2	0.00457	0.00057	9,113
Sequence 14	2.0	8.0	87.8	83.5	4.3	7.2	6.8	0.4	0.00659	0.00082	8,290
Sequence 15	2.0	10.0	109.5	102.7	6.8	8.9	8.4	9.0	0.00879	0.00109	7,642

February 9, 2016

DATE

DEB

REVIEWED BY

TESTED BY

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

Job No.

061442

Material Code SSRVPS

Date Sampled:

12/3/15

Station No.: 0534+00 -

Date Tested:

Location: 20' RT

February 9, 2016

Name of Project: GARLAND CO.LINE - BENTON (SAFETY IMPROVEMENTS)(S) Name: SALINE Code: 62

County:

Sampled By:

T.FRAZIER

Depth: 0-5

Lab No.:

20154195

**AASHTO Class:** A-6(4)

Sample ID:

RV974

Material Type (1 or 2): 2

LATITUDE:

LONGITUDE:

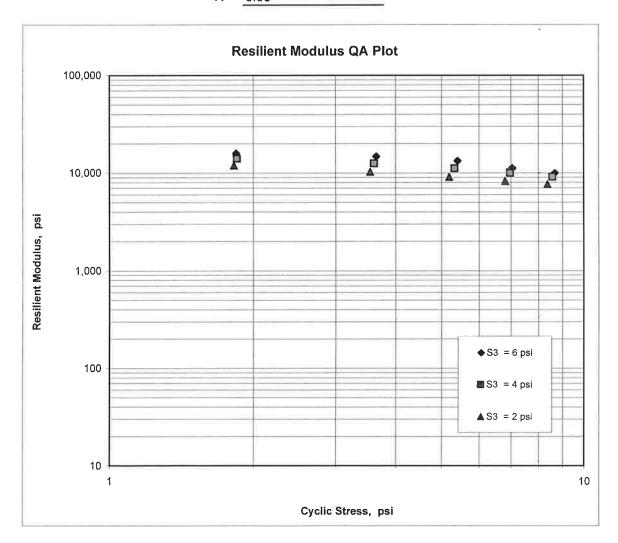
$$M_R = K1 (S_C)^{K2} (S_3)^{K5}$$

K1 = 11,674

K2 = -0.28715

K5 = 0.29641

 $R^2 = 0.96$ 



Job No. Date Sampled: Date Tested: Name of Project:	061442 12/3/15 February 9, 2016 GARLAND CO.LINE - BENTON (SAFETY IMPROV	Material Code Station No.: Location: TEMENTS)(S)	SSRVPS 0731+00 20' RT	
County: Sampled By: Lab No.: Sample ID: LATITUDE:	Code: 62 Name: SALINE T.FRAZIER 20154196 RV975	Depth: AASHTO Class: Material Type (1 or 2): LONGITUDE:	26	0-5 A-6(5) 2
1. Testing Inform		N  - N  - N		N.
	Preconditioning - Permanent Strain > 5% (Y=Yes Testing - Permanent Strain > 5% (Y=Yes or N=No Number of Load Sequences Completed (0-15)			N N 15
2. Specimen Info	ormation:		8	
	Specimen Diameter (in):			
	Тор			3.96
	Middle			3.95
	Bottom			3.94
	Average			3.95
	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):			12.25
	Initial Volume, AoLo (cu. in):			98.28
3. Soil Specimer	n Weight:			
	Weight of Wet Soil Used (g):			3047.30
4. Soil Propertie	s:			
	Optimum Moisture Content (%):			18.2
	Maximum Dry Density (pcf):			106.3
	95% of MDD (pcf):			101.0
	In-Situ Moisture Content (%):			N/A
5. Specimen Pro	nerties:			
o. opcomicii i re	Wet Weight (g):			3047.30
	Compaction Moisture content (%):			18.0
	Compaction Wet Density (pcf):			118.14
	Compaction Dry Density (pcf):			100.12
	Moisture Content After Mr Test (%):			17.5
6. Quick Shear T	est (Y=Yes, N=No, N/A=Not Applicable):			#VALUE!
7. Resilient Mod	ulus, Mr:	9785(S	c)^-0,38483	3(S3)^0.24420
8. Comments				
9. Tested By:	<u>GW</u> Date	: <u>February 9, 2016</u>		

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

SSRVPS 0731+00 20' RT

Material Code Station No.: Location: GARLAND CO.LINE - BENTON (SAFETY IMPROVEMENTS)(S) February 9, 2016 061442 12/3/15 Name of Project: Date Sampled: Date Tested: Job No.

SALINE Name: Code: 62 County:

Material Type (1 or 2): 2 LONGITUDE: Depth: T.FRAZIER 20154196 RV975 Sampled By: Sample ID: Lab No.:

LATITUDE:

0-5

	Chamber	Nominal	Actual	Actual	Actual	Actual	Actual	Actual	Average	Resilient
	Confining	Maximum	Applied	Applied	Applied	Applied	Applied	Applied	Recov Def.	Strain
PARAMETER	Pressure	Axial	Max. Axial	Max. Axial Cyclic Load	Contact	Max.	Cyclic	Contact	LVDT 1	

	Chamber Confining	Nominal Maximum	Actual Applied	Actual Applied	Actual Applied	Actual Applied	Actual Applied	Actual Applied	Average Recov Def.	Resilient Strain	Resilient
PARAMETER	Pressure	Axial		Cyclic Load	Contact	Max.	Cyclic	Contact	LVDT 1		
		Stress	Load		PeoT	Axial	Stress	Stress	and 2		
						Stress					
DESIGNATION	S³	Scyclic	P <sub>max</sub>	P <sub>cyclic</sub>	Pcontact	Smax	Scyclic	Scontact	Havg	2	M
UNIT	psi	psi	sql	sql	sql	psi	psi	psi	in	in/in	psi
Sequence 1	0.9	2.0	25.1	22.4	2.7	2.0	1.8	0.2	0.00128	0.00016	11,439
Sequence 2	0.9	4.0	47.0	44.2	2.8	3.8	3.6	0.2	0.00300	0.00037	9,637
Sequence 3	0.9	6.0	68.9	65.3	3.6	5.6	5.3	0.3	0.00511	0.00064	8,369
Sequence 4	0.9	8.0	91.3	85.1	6.2	7.4	6.9	0.5	0.00766	0.00096	7,270
Sequence 5	0.9	10.0	113.3	104.6	8.7	9.2	8.5	0.7	0.01039	0.00130	6,588
Sequence 6	4.0	2.0	25.0	22.3	2.7	2.0	1.8	0.2	0.00137	0.00017	10,665
Sequence 7	4.0	4.0	46.4	43.6	2.8	3.8	3.6	0.2	0.00333	0.00042	8,564
Sequence 8	4.0	6.0	66.4	63.6	2.8	5.4	5.2	0.2	0.00579	0.00072	7,195
Sequence 9	4.0	8.0	98.6	83.3	5.3	7.2	6.8	0.4	0.00860	0.00107	6,335
Sequence 10	4.0	10.0	111.3	103.6	7.7	9.1	8.5	9.0	0.01142	0.00142	5,935
Sequence 11	2.0	2.0	24.9	22.2	2.7	2.0	1.8	0.2	0.00155	0.00019	9,401
Sequence 12	2.0	4.0	45.8	43.0	2.7	3.7	3.5	0.2	0.00382	0.00048	7,377
Sequence 13	2.0	6.0	64.9	62.1	2.8	5.3	5.1	0.2	0.00661	0.00082	6,146
Sequence 14	2.0	8.0	85.8	81.3	4.5	7.0	9.9	0.4	0.00969	0.00121	5,494
Sequence 15	2.0	10.0	108.1	101.1	7.1	8.8	8.2	9.0	0.01282	0.00160	5,159

February 9, 2016	
DATE	DATE
GW	
FESTED BY	REVIEWED BY

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

Job No. 061442 Material Code SSRVPS

Date Sampled:

12/3/15

**Station No.:** 0731+00 =

Date Tested:

February 9, 2016

Location: 20' RT

Name of Project: GARLAND CO.LINE - BENTON (SAFETY IMPROVEMENTS)(S) Name: SALINE

County:

Code: 62

Depth: 0-5

Sampled By: Lab No.:

T.FRAZIER

**AASHTO Class:** A-6(5)

20154196

Material Type (1 or 2): 2

Sample ID: RV975

LATITUDE:

LONGITUDE:

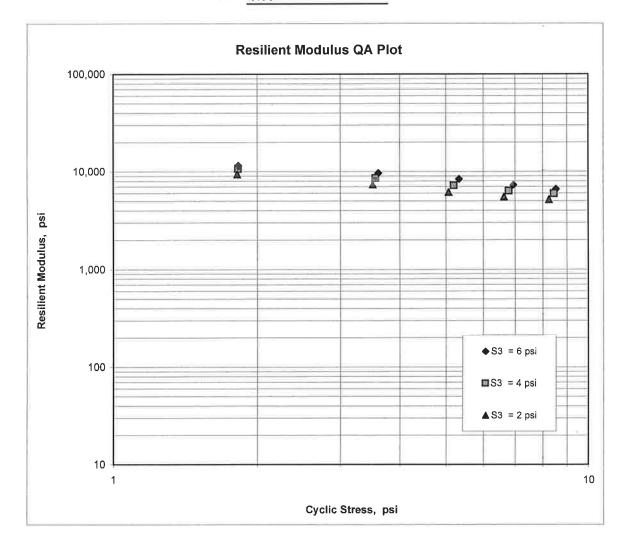
$$M_R = K1 (S_C)^{K2} (S_3)^{K5}$$

$$K1 = 9,785$$

$$K2 = -0.38483$$

$$K5 = 0.24420$$

$$R^2 = 0.99$$



Job No.	061442	Material Code Station No.:	SSRVPS 0765+00	
Date Sampled: Date Tested:	12/3/15 February 10, 2016	Location:	20'LT	
Name of Project:	GARLAND CO. LINE - (SAFETY IMPVTS.)(S)	Location.	2011	
County:	Code: 62 Name: SALINE			
Sampled By:	D.DICKERSON	Depth:		0-5
Lab No.:	20154197	AASHTO Class:		A-6(4)
Sample ID:	RV976	Material Type (1 or 2):		2
LATITUDE:		LONGITUDE:		
1. Testing Inform	ation:		- 15	
	Preconditioning - Permanent Strain > 5% (Y=Y			N
	Testing - Permanent Strain > 5% (Y=Yes or N=	No)		N
	Number of Load Sequences Completed (0-15)			15
2. Specimen Info	rmation:			
	Specimen Diameter (in):			
	Тор			3.95
	Middle		10	3.95
	Bottom			3.96
	Average			3.95
	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):			12.27
	Initial Volume, AoLo (cu. in):		(e)	98.44
3. Soil Specimen	Weight:			
	Weight of Wet Soil Used (g):			3174.40
4. Soil Properties	s:			
	Optimum Moisture Content (%):			17.1
	Maximum Dry Density (pcf):			107.8
	95% of MDD (pcf):			102.4
	In-Situ Moisture Content (%):		(4)	N/A
5. Specimen Pro	perties:			
	Wet Weight (g):			3174.40
	Compaction Moisture content (%):			16.8
	Compaction Wet Density (pcf):			122.86
	Compaction Dry Density (pcf):			105.19
	Moisture Content After Mr Test (%):			16.5
6. Quick Shear T	est (Y=Yes, N=No, N/A=Not Applicable):		+)	#VALUE!
7. Resilient Modu	ulus, Mr:	5842(S	c)^-0.26466	(S3)^0.47400
8. Comments	**************************************			
9. Tested By:	GW Da	ate: February 10, 2016		

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

Material Code Station No.: Location: February 10, 2016 12/3/15 061442 Date Sampled: Date Tested: Job No.

0765+00 SSRVPS

20'LT

GARLAND CO. LINE - (SAFETY IMPVTS.)(S) SALINE Name: **Code:** 62 Name of Project: County:

D.DICKERSON 20154197 Sampled By: Lab No.:

LATITUDE:

RV976 Sample ID:

A-6(4)

Material Type (1 or 2):

LONGITUDE:

**AASHTO Class:** 

Depth:

0-5

Confining Pressure         Maxinum Applied Applied Applied Applied Applied Axial Stress         Applied Applied Applied Applied Applied Applied Axial Cyclic Load Contact Max. Cyclic Load Contact Max. Cyclic Load Contact Axial Stress           Instruction Stress         Load Stress         Axial Stress           Instruction Stress         Poyelic Deax Stress         Poyelic Deax Stress         Stress Scyclic Deax Stress         Stress Stress           Instruction Design		Chamber	Nominal	Actual	Actual	Actual	Actual	Actual	Actual	Average	Resilient	Resilient
Pressure         Axial         Max. Axial         Cyclic Load         Contact         Max.           S3         Soyclic         Pmax         Poyclic         Pcontact         Axial           S3         Soyclic         Pmax         Pcyclic         Pcontact         Stress           S4         Soyclic         Pmax         Pcyclic         Pcontact         Stress           S5         S20         25.2         22.3         2.9         Stress           S6.0         4.0         47.1         44.2         2.9         2.1           S6.0         6.0         68.9         65.0         3.8         5.6           S6.0         8.0         91.1         84.8         6.3         7.4           4.0         10.0         113.2         104.3         8.8         9.2           4.0         2.0         24.9         22.1         2.9         2.0           4.0         4.0         45.8         42.9         2.9         3.7           4.0         6.0         66.5         66.5         62.6         3.0         5.3           4.0         8.0         87.9         82.4         5.5         7.2           4.0		Confining	Maximum	Applied	Applied	Applied	Applied	Applied	Applied	Recov Def.	Strain	Modulus
Ss         Load         Axial Stress           S3         Scyclic         Pmax         Pcyclic         Pcontact         Stress           6:0         2:0         25.2         22.3         2.9         2.1           6:0         4:0         47.1         44.2         2.9         2.1           6:0         4:0         47.1         44.2         2.9         2.1           6:0         6:0         68.9         65.0         3.8         5.6           6:0         8:0         91.1         84.8         6.3         7.4           6:0         10:0         113.2         104.3         8.8         9.2           4:0         2:0         24.9         22.1         2.9         2.0           4:0         4:0         45.8         42.9         2.9         2.0           4:0         6:0         65.5         62.6         3.0         5.3           4:0         8:0         87.9         82.4         5.5         7.2           4:0         10:0         109.4         101.5         8.0         8.9           4:0         2:0         224.3         21.4         2.9         2.0	ARAMETER	Pressure	Axial	Max. Axial	Cyclic Load	Contact	Мах.	Cyclic	Contact	LVDT 1		
S <sub>3</sub> S <sub>cyclic</sub> P <sub>max</sub> P <sub>cyclic</sub> P <sub>cyclic</sub> P <sub>cyclic</sub> P <sub>cyclic</sub> Smax           6.0         2.0         25.2         22.3         2.9         2.1           6.0         4.0         47.1         44.2         2.9         3.8           6.0         4.0         47.1         44.2         2.9         3.8           6.0         6.0         68.9         65.0         3.8         5.6           6.0         8.0         91.1         84.8         6.3         7.4           6.0         10.0         113.2         104.3         8.8         9.2           4.0         2.0         24.9         22.1         2.9         2.0           4.0         4.0         45.8         42.9         2.9         3.7           4.0         6.0         65.5         62.6         3.0         5.3           4.0         8.0         87.9         82.4         5.5         7.2           4.0         10.0         109.4         101.5         8.0         8.9           4.0         2.0         24.3         21.4         2.9         2.0           2.0         2.0			Stress	Load		Load	Axial	Stress	Stress	and 2		
S3         Scyclic         Pmax         Pcyclic         Pcyclic         Smax           6.0         2.0         25.2         22.3         2.9         2.1           6.0         4.0         47.1         44.2         2.9         3.8           6.0         4.0         47.1         44.2         2.9         3.8           6.0         6.0         68.9         65.0         3.8         5.6           6.0         8.0         91.1         84.8         6.3         7.4           6.0         10.0         113.2         104.3         8.8         9.2           4.0         2.0         24.9         22.1         2.9         2.0           4.0         4.0         45.8         42.9         2.9         3.7           4.0         6.0         65.5         62.6         3.0         5.3           4.0         10.0         109.4         101.5         8.0         8.9           4.0         2.0         24.3         21.4         2.9         2.0           4.0         10.0         109.4         101.5         8.0         8.9           4.0         2.0         24.3         21.4         2.9 <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>Stress</td> <td></td> <td></td> <td></td> <td></td> <td></td>							Stress					
psi         psi         lbs         lbs         lbs         psi           6.0         2.0         25.2         22.3         2.9         27.1           6.0         4.0         47.1         44.2         2.9         3.8           6.0         6.0         68.9         65.0         3.8         5.6           6.0         8.0         91.1         84.8         6.3         7.4           6.0         10.0         113.2         104.3         8.8         9.2           4.0         2.0         24.9         22.1         2.9         2.0           4.0         4.0         45.8         42.9         2.9         3.7           4.0         6.0         65.5         62.6         3.0         5.3           4.0         8.0         87.9         8.9         3.7           4.0         10.0         109.4         101.5         8.0         8.9           4.0         2.0         24.3         21.4         2.9         2.0           2.0         2.0         24.3         21.4         2.9         2.0           2.0         4.0         43.5         40.6         2.9         3.5 <td>SSIGNATION</td> <td>S³</td> <td>Scyclic</td> <td>P<sub>max</sub></td> <td>P<sub>cyclic</sub></td> <td>Pcontact</td> <td>Smax</td> <td>Scyclic</td> <td>Scontact</td> <td>Havg</td> <td>ů.</td> <td>Ā</td>	SSIGNATION	S³	Scyclic	P <sub>max</sub>	P <sub>cyclic</sub>	Pcontact	Smax	Scyclic	Scontact	Havg	ů.	Ā
6.0         2.0         25.2         22.3         2.9         2.1           6.0         4.0         47.1         44.2         2.9         3.8           6.0         6.0         68.9         65.0         3.8         5.6           6.0         8.0         91.1         84.8         6.3         7.4           6.0         10.0         113.2         104.3         8.8         9.2           4.0         2.0         24.9         22.1         2.9         2.0           4.0         4.0         45.8         42.9         2.9         3.7           4.0         6.0         65.5         62.6         3.0         5.3           4.0         8.0         87.9         8.9         7.2           4.0         10.0         109.4         101.5         8.0         8.9           4.0         2.0         24.3         21.4         2.9         2.0           2.0         2.4.3         21.4         2.9         2.0           2.0         4.0         4.0         2.9         3.5	UNIT	psi	psi	sql	sql	sql	psi	psi	psi	in	in/in	psi
6.0         4.0         47.1         44.2         2.9         3.8           6.0         6.0         68.9         65.0         3.8         5.6           6.0         8.0         91.1         84.8         6.3         7.4           6.0         10.0         113.2         104.3         8.8         9.2           4.0         2.0         24.9         22.1         2.9         2.0           4.0         4.0         45.8         42.9         2.9         3.7           4.0         6.0         65.5         62.6         3.0         5.3           4.0         8.0         87.9         82.4         5.5         7.2           4.0         10.0         109.4         101.5         8.0         8.9           4.0         2.0         24.3         21.4         2.9         2.0           2.0         4.0         43.5         40.6         2.9         3.5	Sequence 1	6.0	2.0	25.2	22.3	2.9	2.1	1.8	0.2	0.00128	0.00016	11,404
6.0         68.9         65.0         3.8         5.6           6.0         8.0         91.1         84.8         6.3         7.4           6.0         10.0         113.2         104.3         8.8         9.2           4.0         2.0         24.9         22.1         2.9         2.0           4.0         4.0         45.8         42.9         2.9         3.7           4.0         6.0         65.5         62.6         3.0         5.3           4.0         8.0         87.9         82.4         5.5         7.2           4.0         10.0         109.4         101.5         8.0         8.9         2.0           4.0         2.0         24.3         21.4         2.9         2.0         2.0           2.0         4.0         4.0         40.6         2.9         3.5         2.0	Sequence 2	0.9	4.0	47.1	44.2	2.9	3.8	3.6	0.2	0.00279	0.00035	10,362
6.0         8.0         91.1         84.8         6.3         7.4           6.0         10.0         113.2         104.3         8.8         9.2           4.0         2.0         24.9         22.1         2.9         2.0           4.0         4.0         45.8         42.9         2.9         2.0           4.0         6.0         65.5         62.6         3.0         5.3           4.0         8.0         87.9         82.4         5.5         7.2           4.0         10.0         109.4         101.5         8.0         8.9           7.0         2.0         24.3         21.4         2.9         2.0           2.0         4.0         4.0         4.0         3.5         3.5	Sequence 3	6.0	0.9	68.9	65.0	3.8	5.6	5.3	0.3	0.00462	0.00058	9,199
6.0         10.0         113.2         104.3         8.8         9.2           4.0         2.0         24.9         22.1         2.9         2.0           4.0         4.0         45.8         42.9         2.9         2.0           4.0         6.0         65.5         62.6         3.0         5.3           4.0         8.0         87.9         82.4         5.5         7.2           4.0         10.0         109.4         101.5         8.0         8.9           4.0         2.0         24.3         21.4         2.9         2.0           2.0         4.0         43.5         40.6         2.9         3.5	Sequence 4	0.9	8.0	91.1	84.8	6.3	7.4	6.9	0.5	0.00676	0.00084	8,195
4.0         2.0         24.9         22.1         2.9         2.0           4.0         4.0         45.8         42.9         2.9         2.0           4.0         6.0         65.5         62.6         3.0         5.3           4.0         8.0         87.9         82.4         5.5         7.2           4.0         10.0         109.4         101.5         8.0         8.9           2.0         2.0         24.3         21.4         2.9         2.0           2.0         4.0         43.5         40.6         2.9         3.5	Sequence 5	6.0	10.0	113.2	104.3	8.8	9.2	8.5	0.7	0.00899	0.00112	7,585
4.0         4.0         45.8         42.9         2.9         3.7           4.0         6.0         65.5         62.6         3.0         5.3           4.0         8.0         87.9         82.4         5.5         7.2           4.0         10.0         109.4         101.5         8.0         8.9           2.0         2.0         24.3         21.4         2.9         2.0           2.0         4.0         43.5         40.6         2.9         3.5	Sequence 6	4.0	2.0	24.9	22.1	2.9	2.0	1.8	0.2	0.00152	0.00019	9,461
4.0         6.0         65.5         62.6         3.0         5.3           4.0         8.0         87.9         82.4         5.5         7.2           4.0         10.0         109.4         101.5         8.0         8.9           . 2.0         2.0         24.3         21.4         2.9         2.0           2.0         4.0         43.5         40.6         2.9         3.5	Sequence 7	4.0	4.0	45.8	42.9	2.9	3.7	3.5	0.2	0.00353	0.00044	7,933
4.0         8.0         87.9         82.4         5.5         7.2           4.0         10.0         109.4         101.5         8.0         8.9           * 2.0         2.0         24.3         21.4         2.9         2.0           2.0         4.0         43.5         40.6         2.9         3.5	Sequence 8	4.0	6.0	65.5	62.6	3.0	5.3	5.1	0.2	0.00573	0.00071	7,135
4.0         10.0         109.4         101.5         8.0         8.9           • 2.0         2.0         24.3         21.4         2.9         2.0           2.0         4.0         43.5         40.6         2.9         3.5	Sequence 9	4.0	8.0	87.9	82.4	5.5	7.2	6.7	0.4	0.00809	0.00101	6,656
2.0     2.4.3     21.4     2.9     2.0       2.0     4.0     43.5     40.6     2.9     3.5	Sequence 10	4.0	10.0	109.4	101.5	8.0	8.9	8.3	9.0	0.01044	0.00130	6,348
2.0 4.0 43.5 40.6 2.9 3.5	Sequence 11	2.0	2.0	24.3	21.4	2.9	2.0	1.7	0.2	0.00194	0.00024	7,203
	sequence 12	2.0	4.0	43.5	40.6	2.9	3.5	3.3	0.2	0.00451	0.00056	5,878
6.0 61.6 58.5 3.0 5.0 4.	sequence 13	2.0	0.9	61.6	58.5	3.0	5.0	4.8	0.2	0.00733	0.00091	5,220
Sequence 14 2.0 8.0 81.7 77.0 4.6 6.7 6.3	sequence 14	2.0	8.0	81.7	77.0	4.6	6.7	6.3	0.4	0.01009	0.00126	4,989

February 10, 2016	
DATE	DATE
GW	
TESTED BY	REVIEWED BY

4,924

0.00159

0.01273

9.0

7.8

8.4

95.9

103.0

10.0

2.0

Sequence 15

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

Name: SALINE

Job No.

061442

Material Code SSRVPS

Date Sampled:

12/3/15

**Station No.:** 0765+00

**Date Tested:** 

Name of Project: GARLAND CO. LINE - (SAFETY IMPVTS.)(S)

February 10, 2016

Location: 20'LT

County:

Code: 62

Sampled By:

D.DICKERSON

Depth: 0-5

Lab No.:

**AASHTO Class:** A-6(4)

20154197

Material Type (1 or 2): 2

RV976 Sample ID:

LATITUDE:

LONGITUDE:

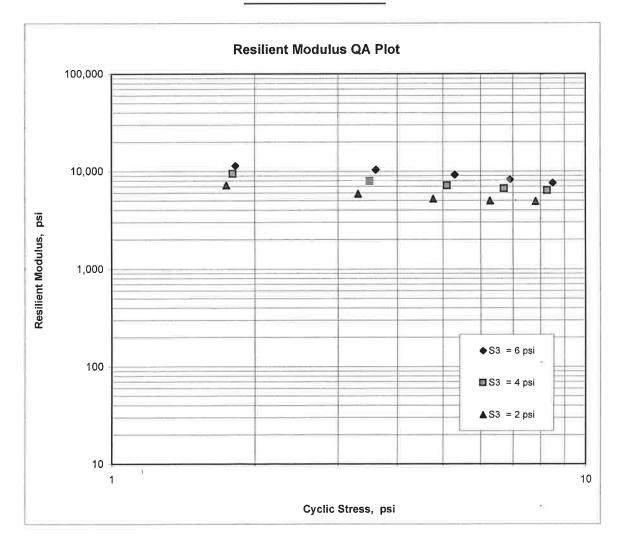
$$M_R = K1 (S_C)^{K2} (S_3)^{K5}$$

$$K1 = 5,842$$

$$K2 = -0.26466$$

$$K5 = 0.47400$$

$$R^2 = 0.99$$



Job No. Date Sampled:	061442 12/3/15	Material Code Station No.:	SSRVPS 1062+00		
Date Sampled.  Date Tested:	February 10, 2016	Location:	19'LT		
Name of Project:	GARLAND CO. LINE - (SAFETY IMPVTS.)(S)	Location.	17 151		
County:	Code: 62 Name: SALINE		20		
Sampled By:	D.DICKERSON	Depth:		0-5	
Lab No.:	20154198	AASHTO Class:		A-2-0(0)	
Sample ID:	RV977	Material Type (1 or 2):		2	
LATITUDE:		LONGITUDE:			
1. Testing Inform	nation:				
	Preconditioning - Permanent Strain > 5% (Y=Ye	es or N= No)		N	
	Testing - Permanent Strain > 5% (Y=Yes or N=N	<b>l</b> o)	W	N	
	Number of Load Sequences Completed (0-15)		•	15	
2. Specimen Info	rmation:				
	Specimen Diameter (in):				
	Тор			3.97	
	Middle			3.95	
	Bottom			3.95	
	Average			3.96	
	Membrane Thickness (in):		ş	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):			12.30	
	Initial Volume, AoLo (cu. in):			98.73	
3. Soil Specimen	Weight:				
•	Weight of Wet Soil Used (g):		2	3118.00	
4. Soil Properties	s:				
	Optimum Moisture Content (%):			15.1	
	Maximum Dry Density (pcf):			110.5	
	95% of MDD (pcf):			105.0	
	In-Situ Moisture Content (%):			N/A	
5. Specimen Pro	perties:				
	Wet Weight (g):			3118.00	
	Compaction Moisture content (%):			15.1	
	Compaction Wet Density (pcf):			120.33	
	Compaction Dry Density (pcf):			104.54	
	Moisture Content After Mr Test (%):			14.7	
6. Quick Shear T	est (Y=Yes, N=No, N/A=Not Applicable):			#VALUE!	
7. Resilient Modulus, Mr:		6951(S	6951(Sc)^-0.24648(S3)^0.40844		
		,	5		
8. Comments					
0 Tooted Day	CW	ite: Echrusov 10, 2016			
9. Tested By:	<u>GW</u> Da	te: <u>February 10, 2016</u>			

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

Material Code Station No.: Location: GARLAND CO. LINE - (SAFETY IMPVTS.)(S) February 10, 2016 12/3/15 061442 Name of Project: Date Sampled: Date Tested: Job No.

1062+00

19'LT

SSRVPS

County:Code: 62Name:SALINESampled By:D.DICKERSON...Lab No.:20154198

Sample ID: RV977
LATITUDE:

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

0-5

Depth:

Modulus Resilient 10,738 12,301 10,787 7,278 5,870 5,759 9,658 8,887 7,702 8,332 5,691 8,661 8,631 7,201 6,601 psi ຮັ 0.00122 0.00015 0.00034 0.00056 0.00104 0.00017 0.00042 0.00070 0.00098 0.00124 0.00022 0.00053 0.00089 0.00152 Resilient 0.00081 Strain in/in ຜ້ Recov Def. 0.00136 0.00335 0.00175 0.00712 0.01223 Average LVDT 1 0.00119 0.00274 0.00453 0.00652 0.00834 0.00559 0.00787 0.00999 0.00427 0.00981 and 2 Havg .⊆ Applied Scontact Contact Stress Actual 0.3 9.0 0.2 9.0 0.2 0.5 0.2 0.2 0.2 0.2 0.7 0.2 0.2 0.4 psi Applied Cyclic Stress Scyclic Actual 8.8 7.0 <u>←</u> 5.4 7.2 9.0 <del>7</del>. 3.6 5.4 9.0 <del>1</del>.8 3.5 5.2 3.7 7.1 bsi Applied Actual Smax Stress 2.0, Max. Axia/ 2.0 3.9 9.7 9.6 5.4 7.3 9.3 5.6 3.8 3.7 5.7 9.7 psi Applied Contact Pcontact Actual Load 2.8 2.8 6.2 2.8 5.3 3.7 8.6 2.8 2.8 7.8 2.7 2.8 2.8 6.9 sql Max. Axial | Cyclic Load Applied 107,9 Actual Pcyclic 110.6 110.2 85.5 44.3 43.2 22.4 45.0 67.0 88.8 22.4 62.9 22.3 64.0 87.7 lps Applied 117.9 114.8 Actual 119.3 89.9 Load 9.07 95.0 25.2 68.8 93.0 25.0 45.9 8.99 25.2 47.7 47.1 Ртах ps Maximum Nominal Axia/ Stress Scyclic 10.0 10.0 10.0 8.0 8.0 4.0 6.0 2.0 6.0 8.0 2.0 6.0 2.0 psi 4.0 4.0 Confining Chamber Pressure 2.0 2.0 2.0 2.0 6.0 6.0 6.0 6.0 4.0 4.0 4.0 4.0 4.0 2.0 တိ psi DESIGNATION Sequence 14 Sequence 15 Sequence 12 Sequence 13 PARAMETER Sequence 10 Sequence 11 Sequence 2 Sequence 3 Sequence 5 Sequence 6 Sequence 8 Sequence 9 Sequence 4 Sequence 7 Sequence 1 LNN

GW DATE February	Y
TESTED BY GW	LEVIEWED BY

10, 2016

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

Job No.

061442

Material Code SSRVPS

Date Sampled:

12/3/15

**Station No.:** 1062+00

Location: 19'LT

Date Tested:

February 10, 2016

Name of Project: GARLAND CO. LINE - (SAFETY IMPVTS.)(S)

County:

Code: 62

Name: SALINE

Sampled By:

D.DICKERSON

**Depth:** 0-5

Lab No.:

20154198

**AASHTO Class:** A-2-0(0)

Sample ID:

**RV977** 

Material Type (1 or 2): 2

LATITUDE:

LONGITUDE:

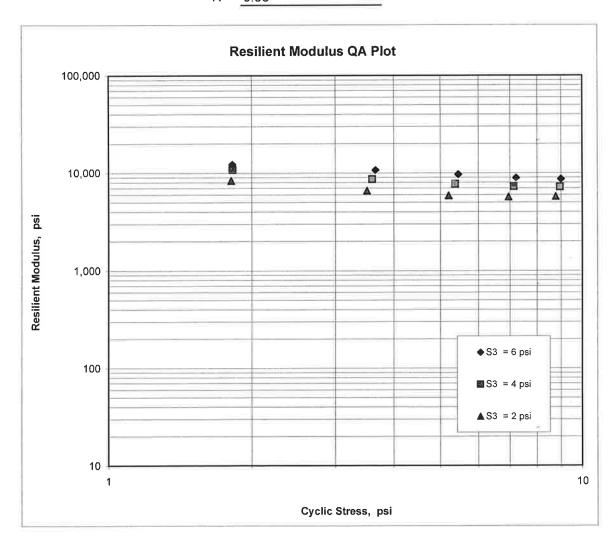
$$M_R = K1 (S_C)^{K2} (S_3)^{K5}$$

K1 = 6,951

K2 = -0.24648

K5 = 0.40844

 $R^2 = 0.98$ 



Job No. Date Sampled: Date Tested: Name of Project:	061442 12/3/15 February 10, 2016 GARLAND CO. LINE - (SAFETY IMPVTS.)(S)	Material Code Station No.: Location:	SSRVPS 1094+00 22'LT					
County: Sampled By: Lab No.: Sample ID:	Code: 62 Name: SALINE D.DICKERSON 20154199 RV978	Depth: AASHTO Class: Material Type (1 or 2):		0-5 A-4(2) 2				
LATITUDE:		LONGITUDE:	5 <del>#</del>					
1. Testing Inform								
	Preconditioning - Permanent Strain > 5% (Y=			N				
	Testing - Permanent Strain > 5% (Y=Yes or N			N				
	Number of Load Sequences Completed (0-15)			15				
2. Specimen Info	2. Specimen Information:							
	Specimen Diameter (in):							
	Тор			3.97				
	Middle			3.95				
	Bottom			3.95				
	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):			12.30				
	Initial Volume, AoLo (cu. in):			98.73				
3. Soil Specimen	Weight:							
•	Weight of Wet Soil Used (g):			3141.30				
4. Soil Properties	s:							
•	Optimum Moisture Content (%):			16.6				
	Maximum Dry Density (pcf):			107.1				
	95% of MDD (pcf):			101.7				
	In-Situ Moisture Content (%):		-	N/A				
5. Specimen Properties:								
o, opcomion i io	Wet Weight (g):			3141.30				
	Compaction Moisture content (%):			16.9				
	Compaction Wet Density (pcf):			121,23				
	Compaction Dry Density (pcf):			103.70				
	Moisture Content After Mr Test (%):			16.3				
6. Quick Shear T	est (Y=Yes, N=No, N/A=Not Applicable):		е.	#VALUE!				
7. Resilient Modulus, Mr:		12369(S	c)^-0.33925(	(S3)^0.25777				
8. Comments								
o. Comments								
9. Tested By:	GW	Date: February 10, 2016						
o. residu by.	OVV	Jaco. 1 Opidary 10, 2010						

# ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT MATERIALS DIVISION

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

SSRVPS 1094+00 22'LT Material Code Station No.: 12/3/15 061442 Date Sampled: Job No.

Location:

GARLAND CO. LINE - (SAFETY IMPVTS.)(S) February 10, 2016 Name of Project: Date Tested:

Depth: SALINE Name: Code: 62 D.DICKERSON County:

20154199 Sampled By: Sample ID: Lab No.:

**RV978** LATITUDE:

A-4(2)

Material Type (1 or 2):

LONGITUDE:

AASHTO Class:

0-5

Resilient	Modulus					Mr	M <sub>r</sub> psi	M <sub>r</sub> psi 15,341	Mr psi 15,341 13,615	Mr psi 15,341 13,615 12,181	M <sub>r</sub> psi 15,341 13,615 12,181	Mr psi 15,341 13,615 12,181 10,159 8,940	Mr psi 15,341 12,181 10,159 8,940 13,672	Mr psi 15,341 13,615 12,181 10,159 8,940 13,672	Mr psi 15,341 12,181 10,159 8,940 13,672 11,640	Mr psi 15,341 13,615 12,181 10,159 8,940 13,672 11,640 10,214 9,021	Mr psi 15,341 13,615 12,181 10,159 8,940 13,672 11,640 10,214 9,021	Mr psi 15,341 13,615 12,181 10,159 8,940 13,672 11,640 10,214 9,021 8,116	Mr psi 15,341 13,615 12,181 10,159 8,940 13,672 11,640 10,214 9,021 8,116 11,920	Mr psi 15,341 13,615 12,181 10,159 8,940 13,672 11,640 10,214 9,021 8,116 11,920 10,044 8,701	Mr psi 15,341 13,615 12,181 10,159 8,940 13,672 11,640 10,214 9,021 8,116 11,920 10,044 8,701
Resilient	Strain				23	in/in	0.00012	0.00027	0.00044	0.00069	0.00096	0.00013	0.00031	0.00051	0.00076	0.00104	0.00015	0.00035	0.00059	0.00087	
Average	Recov Def.	LVDT 1	and 2		H <sub>avg</sub>	u	96000.0	0.00213	0.00354	0.00551	0.00767	0.00107	0.00246	0.00413	0.00613	0.00835	0.00122	0.00283	0.00476	0.00696	
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	
Actual	Applied	Cyclic	Stress		Scyclic	psi	1.8	3.6	5.4	7.0	8.5	1.8	3.6	5.3	6.9	8.4	1.8	3.5	5.2	6.7	
Actual	Applied	Max.	Axial	Stress	Smax	isd	2.0	3.8	5.7	7.5	9.2	2.0	3.8	5.5	7.3	9.1	2.0	3.8	5.4	7.1	
Actual	Applied	Contact	Load		Pcontact	sql	2.7	2.8	3.7	6.1	8.7	2.7	2.7	2.8	5.2	7.8	2.7	2.7	2.8	4.4	
Actual	Applied	al Cyclic Load			Pcyclic	sql	22.5	44.5	0.99	85.7	105.0	22.4	43.9	64.6	84.6	103.8	22.3	43.6	63.4	82.7	
Actual	Applied	Max. Axial	Load		P <sub>max</sub>	sql	25.2	47.3	69.7	91.8	113.7	25.1	46.6	67.4	89.8	111.5	`25.0	46.3	66.2	87.2	
Nominal	Maximum	Axial	Stress		Scyclic	psi	2.0	4.0	6.0	8.0	10.0	2.0	4.0	0.9	8.0	10.0	2.0	4.0	6.0	8.0	
Chamber	Confining	Pressure			တ်	psi	6.0	6.0	6.0	6.0	6.0	4.0	4.0	4.0	4.0	4.0	2.0	2.0	2.0	2.0	
		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	

February 10, 2016

DATE DATE

GW

REVIEWED BY

TESTED BY

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

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

Name: SALINE

Job No.

061442

**Material Code SSRVPS** 

Date Sampled:

12/3/15

**Station No.:** 1094+00

Date Tested:

February 10, 2016

Location: 22'LT

Name of Project: GARLAND CO. LINE - (SAFETY IMPVTS.)(S)

County:

Code: 62

**Depth:** 0-5

Sampled By:

D.DICKERSON

Lab No.:

20154199

**AASHTO Class:** A-4(2)

Sample ID:

**RV978** 

Material Type (1 or 2): 2

LATITUDE:

LONGITUDE:

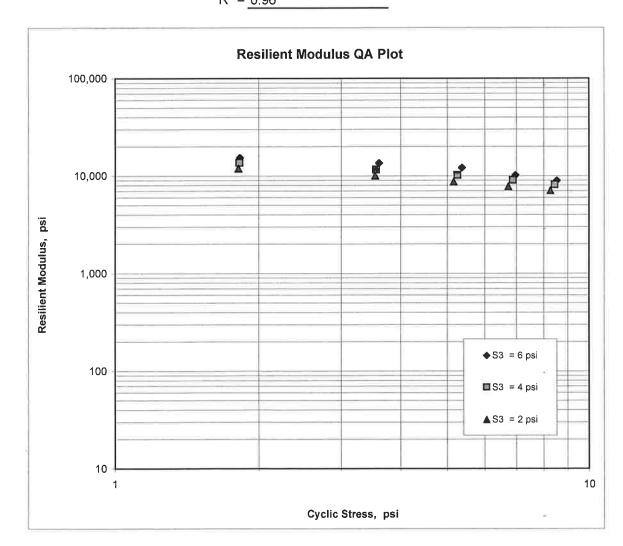
$$M_R = K1 (S_C)^{K2} (S_3)^{K5}$$

K1 = 12,369

K2 = -0.33925

K5 = 0.25777

 $R^2 = 0.96$ 



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

* 7	. SOIL	SURVEY / PAVEMENT	50	UNDING IESI	REPORI	L ~ .	` "
DATE - 02/11/16 SEQUENCE NO 1 JOB NUMBER - 061442 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 - 62 SUPPLIER NAME - STATE DISTRICT NO 06 NAME OF PROJECT - GARLAND CO.LINE - BENTON (SAFETY IMPRVTS.)(S) PROJECT ENGINEER - NOT APPLICABLE PIT/QUARRY - ARKANSAS							
LOCATION - SALII		TY			DATE S	IMA	PLED - 12/03/15
SAMPLED BY - D.DIC	KERSON						EIVED - 12/10/15
SAMPLE FROM - TEST						res:	TED - 02/10/16
MATERIAL DESC SO							
		20154140					
SAMPLE ID		S919					S921
TEST STATUS		0146+00					0146+00
STATION LOCATION		0146+00 06' RT	_	13' RT			18' RT
DEPTH IN FEET			-	0-5		: <del>***</del> :	0-5
		BR/GR	-	BROWN		-	BR/GR
MAT'L TYPE	-	,	_			-7	
LATITUDE DEG-MIN-					15.40	-	34 37 15.30
LONGITUDE DEG-MIN	-SEC -	92 52 26.10		92 52	26.10		92 52 26.10
% PASSING 2	IN		=			-	
1 1/2	IN					-	
_ * _		100	-	100		-	100
	3 IN -		-	99		3#7	99
	4 -		200	94 82		_	2 95 81
	10 - 40 -		2	63		:#:	
¥	80 -		-	55		-	
	200 -			49			39
I TOUTD I TMTT	_	32		30		1-23	35
LIQUID LIMIT PLASTICITY INDEX		<del>-</del> -	20			-	
AASHTO SOIL			-	A-4(2)			A-6(2)
UNIFIED SOIL	-	(- /	## P			=	
% MOISTURE CONTENT		20.3	=	9.9		-	18.4
ACHMSC	(IN) -	4.5W	_	7.5W		-	
ACHMBC	(IN) -		-	1.5		-	***
PCCP	(IN) -	6.0	-			-	
			_			-	
	_		-			-	
	-		-			-	
	-		250			-	
	_		-			_	8

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

- ALL LOCATIONS MEASURED FROM CENTERLINE OF EXISTING HIGHWAY

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### MICHAEL BENSON, MATERIALS ENGINEER

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

DATE - 02/11/16 SEQUENCE NO 2  JOB NUMBER - 061442 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 - 62  SUPPLIER NAME - STATE DISTRICT NO 06  NAME OF PROJECT - GARLAND CO.LINE - BENTON (SAFETY IMPRVTS.) (S)  PROJECT ENGINEER - NOT APPLICABLE  PIT/QUARRY - ARKANSAS  LOCATION - SALINE, COUNTY DATE SAMPLED - 12/03/15  SAMPLED BY - D.DICKERSON DATE RECEIVED - 12/10/15  SAMPLE FROM - TEST HOLE DATE TESTED - 02/10/16  MATERIAL DESC SOIL SURVEY - R VALUE - PAVEMENT SOUNDINGS							
LAB NUMBER  SAMPLE ID  TEST STATUS  STATION  LOCATION  DEPTH IN FEET  MAT'L COLOR  MAT'L TYPE  LATITUDE DEG-MIN-SE	- SS - IN - 03 - 06 - 0- - BF	162+00 6' RT -5 ROWN 34 37 21.90	- 20154144 - S923 - INFORMATIO - 0162+00 - 13' RT - 0-5 - BROWN - 34 37 92 52	ON ONLY	20154145 S924 INFORMATION ONLY 0162+00 22' RT 0-5 BROWN 34 37 21.80 92 52 8.90		
1 1/2 I 3/4 I 3/8 I NO. NO. 1 NO. 4	N N N 1 N 4 - 0 - 0 -		- - - 100 - 95 - 89 - 81 - 71 - 67 64	8.90	100 98 93 85 77 74 72		
	-	34 16 A-6(9) 19.5 6.0WX	- 34 - 15 - A-6(7) - 16.2 - 5.0W - 5.0W	8	39 18 A-6(12) 17.2		
	IN) - - - - - - -	6.0		20 20 20 20 20 20 20 20 20 20 20 20 20 2	200		

REMARKS - W=MULITPLE LAYERS, X=STRIPPED, Z=AUGER REFUSAL
- ALL LOCATIONS MEASURED FROM CENTERLINE OF EXISTING HIGHWAY

AASHTO TESTS : T24 T88 T89 T90 T265

.

### MICHAEL BENSON, MATERIALS ENGINEER

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

DATE			,				
PURPOSE	DATE - 02/1	1/16				SEQUENCE	NO. = 3
SUPPLIER NAME	JOB NUMBER - 0614	42				MATERIAL	CODE SSRVPS
SPEC. REMARKS   NO SPECIFICATION CHECK   COUNTY/STATE   62   SUPPLIER NAME   STATE   GARLAND COLLINE - BENTON (SAFETY IMPRUTS.) (S)   PROJECT ENGINEER   NOT APPLICABLE   PIT/QUARRY   ARKANSAS     LOCATION   SALINE, COUNTY   DATE SAMPLED   12/03/15     SAMPLED BY   D.DICKERSON   DATE RECEIVED   12/10/15     SAMPLE BY   D.DICKERSON   DATE TESTED   02/10/16     MATERIAL DESC.   SOIL SURVEY   R VALUE   PAVEMENT SOUNDINGS     LAB NUMBER   SULUSIVEY   R VALUE   PAVEMENT SOUNDINGS	FEDERAL AID NO TO B	E ASSI	GNED			SPEC. YEZ	AR = 2014
SPEC REMARKS	PURPOSE - SOIL	SURVE	Y SAMPLE			SUPPLIER	ID. 1-1
SUPPLIER NAME	SPEC. REMARKS - NO S	PECIFI	CATION CHECK				
NAME OF PROJECT	,						
PIT/QUARRY   ARKANSAS   SALINE, COUNTY   DATE   SAMPLED   12/03/15   SAMPLED BY   12/03/15   SAMPLED B			CO.LINE - BENTON	(SA	FETY IMPRV		
PIT   QUARRY							
Cation   C							
SAMPLE BY   -   NICKERSON   -   TEST HOLE   -			TY			DATE SAM	PLED = 12/03/15
SAMPLE FROM		•					
MATERIAL DESC.							
LAB NUMBER			Y - R VALUE- PAV	EME	NT SOUNDIN		
SAMPLE ID		_ DOICVI	,, 10 1111011 11111				5
TEST STATUS	LAB NUMBER	-	20154146				
STATION	SAMPLE ID	-					
LOCATION	TEST STATUS			-	INFORMATIO		
DEPTH IN FEET - 0-5   0-5   BROWN   BR	STATION	-	0503+00	-	0503+00	-	0503+00
MAT'L COLOR	LOCATION	-	06' RT	_	13' RT	-	_ : -:-
MAT'L TYPE	DEPTH IN FEET	-	0-5	-	0-5		0-5
LATITUDE DEG-MIN-SEC - 34 37 4.20 - 34 37 4.10 - 34 37 4.10 LONGITUDE DEG-MIN-SEC - 92 45 51.90 - 92 45 51.90 - 92 45 51.80  * PASSING 2 IN	MAT'L COLOR	_	BROWN	_	BROWN		BROWN
LONGITUDE DEG-MIN-SEC - 92 45 51.90 92 45 51.90 92 45 51.80  % PASSING 2 IN	MAT'L TYPE	-		_		Dec.	
% PASSING 2 IN	LATITUDE DEG-MIN-S	EC -	34 37 4.20	-	34 37	4.10	34 37 4.10
1 1/2 IN	LONGITUDE DEG-MIN-S	SEC -	92 45 51.90		92 45	51.90	92 45 51.80
1 1/2 IN	9. DAGGENG 2	TNI					
3/4 IN 100				_		-	
3/8 IN 99	•			_	100	-	
NO. 4 - 91	•			_		:=:	100
NO. 10 - 80				_		-	
NO. 40 - 68				_		-	
NO. 80 - 64 - 60 - 76 NO. 200 - 61 - 54 - 67  LIQUID LIMIT - 30 - 31 - 28 PLASTICITY INDEX - 12 - 13 - 13 AASHTO SOIL - A-6(5) - A-6(4) - A-6(6) UNIFIED SOIL - 11.9 - 12.2 - 22.2  CHIP SEAL (IN)25				-		Fee:	
NO. 200 - 61 54 67  LIQUID LIMIT - 30 - 31 - 28  PLASTICITY INDEX - 12 - 13 - 13  AASHTO SOIL - A-6(5) - A-6(4) A-6(6)  UNIFIED SOIL - 11.9 12.2 22.2  CHIP SEAL (IN)25				-		/=	
LIQUID LIMIT - 30 - 31 - 28 PLASTICITY INDEX - 12 - 13 - 13 AASHTO SOIL - A-6(5) - A-6(4) A-6(6) UNIFIED SOIL - 11.9 12.2 22.2  CHIP SEAL (IN)25	***			-		-	
PLASTICITY INDEX       -       12       -       13       -       14       -       13       -       -       -       6(6)       - <td>NO. 2</td> <td>200 -</td> <td>61</td> <td></td> <td>54</td> <td></td> <td>67</td>	NO. 2	200 -	61		54		67
PLASTICITY INDEX       -       12       -       13       -       13         AASHTO SOIL       -       A-6(5)       -       A-6(4)       A-6(6)         UNIFIED SOIL       -       -       -       -       22.2         CHIP SEAL       (IN) -       .25       -       -       -       -       -         ACHMSC       (IN) -       3.25W       -       5.5       -       -       -         ACHMBC       (IN) -       -       3.5       -       -       -	LIOUID LIMIT	_	30	220	31	· · · · · · · · · · · · · · · · · · ·	28
AASHTO SOIL - A-6(5) - A-6(4) A-6(6) UNIFIED SOIL - 11.9 12.2 22.2  CHIP SEAL (IN)25	~	_		-	13		13
UNIFIED SOIL 11.9 12.2 22.2  CHIP SEAL (IN)25 ACHMSC (IN) - 3.25W - 5.5 ACHMBC (IN) 3.5	AASHTO SOIL	_	A-6(5)	7	A-6(4)	~	A-6(6)
% MOISTURE CONTENT       -       11.9       12.2       22.2         CHIP SEAL       (IN) -       .25       -       -       -       -         ACHMSC       (IN) -       3.25W       -       5.5       -       -       -         ACHMBC       (IN) -       -       -       3.5       -       -       -		_		-		10 <del>44</del>	
CHIP SEAL (IN)25 ACHMSC (IN) - 3.25W - 5.5 ACHMBC (IN) 3.5		_	11.9	-	12.2	· <del></del>	22.2
ACHMSC (IN) - 3.25W - 5.5 ACHMBC (IN) 3.5							
ACHMBC (IN) = - 3.5				(#)		-	
11111125	ACHMSC	(IN) -				-	
PCCP (IN) 6.0	ACHMBC	(IN) -	-	-	3.5	_	# (# #)
	PCCP	(IN) _	6.0	_		_	
		**		-		_	
		=		-		_	
		27		-		_	
* * * * * * * * * * * * * * * * * * *		= 1		-		-	
		=:				-	

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

AASHTO TESTS : T24 T88 T89 T90 T265

.

### MICHAEL BENSON, MATERIALS ENGINEER

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

DATE - 02/11/16 SEQUENCE NO 4  JOB NUMBER - 061442 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 - 62  SUPPLIER NAME - STATE DISTRICT NO 06  NAME OF PROJECT - GARLAND CO.LINE - BENTON (SAFETY IMPRVTS.) (S)  PROJECT ENGINEER - NOT APPLICABLE  PIT/QUARRY - ARKANSAS  LOCATION - SALINE, COUNTY DATE SAMPLED - 12/03/15  SAMPLE BY - D.DICKERSON DATE RECEIVED - 12/10/15  SAMPLE FROM - TEST HOLE DATE TESTED - 02/10/16								SSRVPS 2014 1 62 06 12/03/15 12/10/15
LAB NUMBER	-	20154149		-	20154150	9	2015415	1
SAMPLE ID		S928			S929		S930	
TEST STATUS	-		ON ONT.V		INFORMATIO			TTON ONLY
STATION		0518+00	ON ONLI		0518+00		0518+00	1101 01111
LOCATION		06' LT		1	13' LT	6	18' LT	
DEPTH IN FEET		0-5		-	0-5	3	0-5	
					BROWN	2	BROWN	
MAT'L COLOR	2.5	BROWN		***	DKOMN	=	BROWN	
MAT'L TYPE		24 27	11 50	=	34 37	11 70	24 21	7 11.70
LATITUDE DEG-MIN-S		34 37						5 34.90
LONGITUDE DEG-MIN-S	SEC -	92 45	34.80		92 45	34.90	92 4	5 34.90
% PASSING 2	IN. 🖪			-		3		
1 1/2	IN.			-		3	9	
3/4	IN			-	100		8	
3/8	IN.	100		-	99	3	100	
NO.	4 =	97		-	94	3	95	
NO.	10	88		_	88		86	
NO.	40 -	76		_	80	9	74	
NO.	80 -	70		-	74	2	67	
NO. 2	00 =	63			64		56	
TALLED TALLE		2.77			29		- 26	
LIQUID LIMIT	5	37 19		77	11		- 11	
PLASTICITY INDEX	=	-		-			A-6(3)	
AASHTO SOIL	- 5	A-6(10)		-	A-6(5)		A-0(3)	
UNIFIED SOIL	0.5	0.4		77.0	10 5		10.3	
% MOISTURE CONTENT		24.9			19.5		19.3	
ACHMSC	(IN) -	5.5W		-	2.5			
ACHMBC	(IN) -	F6575		-	4.5			
PCCP	(IN) -	5.5		-				
	_			20			<del>-</del>	
	_						_	
	_			-			_	
	_			-			-	
	-			-			<u> </u>	
	_			_			-	

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

- ALL LOCATIONS MEASURED FROM CENTERLINE OF EXISTING HIGHWAYS

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

- 02/11/16 SEQUENCE NO. - 5 DATE JOB NUMBER . - 061442 MATERIAL CODE - SSRVPS FEDERAL AID NO. - TO BE ASSIGNED SPEC. YEAR = 2014 PURPOSE - SOIL SURVEY SAMPLE SUPPLIER ID. - 1 COUNTY/STATE - 62 SPEC. REMARKS - NO SPECIFICATION CHECK SUPPLIER NAME - STATE DISTRICT NO. - 06 NAME OF PROJECT - GARLAND CO.LINE - BENTON (SAFETY IMPRVTS.)(S) PROJECT ENGINEER - NOT APPLICABLE PIT/QUARRY - ARKANSAS - SALINE, COUNTY DATE SAMPLED - 12/03/15 LOCATION SAMPLED BY - D.DICKERSON DATE RECEIVED - 12/10/15 SAMPLE FROM - TEST HOLE DATE TESTED - 02/10/16 MATERIAL DESC. - SOIL SURVEY - R VALUE- PAVEMENT SOUNDINGS - 20154152 - 20154153 - 20154154 - 8931 - 8932 - 8933 LAB NUMBER - S931 SAMPLE ID TEST STATUS - INFORMATION ONLY - INFORMATION ONLY - INFORMATION ONLY - 0534+00 - 0534+00 0534+00 STATION - 06' - 0-5 - 13' RT 20' RT - 06' RT - <del>1-</del> 0-5 LOCATION 0-5 DEPTH IN FEET \_ 0-5 \_ BROWN BROWN BROWN MAT'L COLOR MAT'L TYPE LATITUDE DEG-MIN-SEC ~ 34 37 13.10 - 34 37 13.10 - 34 37 13.00 LONGITUDE DEG-MIN-SEC - 92 45 18.80 92 45 18.80 92 45 18.80 2 IN. -% PASSING 1 1/2 IN. -100 3/4 IN. - 100 100 3/8 IN. - 99 98 97 88 93 NO. 4 - 95 79 NO. 10 - 87 NO. 40 - 78 70 76 NO. 80 - 72 65 71 67 NO. 200 - 67 60 26 - 33 ·≖: 33 LIQUID LIMIT 10 PLASTICITY INDEX - 16 - 17 AASHTO SOIL - A-6(9) A-4(3)A-6(8) UNIFIED SOIL 22.1 19.0 % MOISTURE CONTENT -23.5 (IN) -4.25WX 9.5W ACHMSC PCCP (IN) -5.25

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

- ALL LOCATIONS MEASURED FROM CENTERLINE OF EXTISTING HIGHWAYS

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### MICHAEL BENSON, MATERIALS ENGINEER

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

DATE - 02/11/16 SEQUENCE NO 6  JOB NUMBER - 061442 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 - 62  SUPPLIER NAME - STATE DISTRICT NO 06  NAME OF PROJECT - GARLAND CO.LINE - BENTON (SAFETY IMPRVTS.) (S)  PROJECT ENGINEER - NOT APPLICABLE  PIT/QUARRY - ARKANSAS  LOCATION - SALINE, COUNTY DATE SAMPLED - 12/03/15  SAMPLE DBY - D.DICKERSON DATE RECEIVED - 12/10/15  SAMPLE FROM - TEST HOLE DATE TESTED - 02/10/16  MATERIAL DESC SOIL SURVEY - R VALUE- PAVEMENT SOUNDINGS								
LAB NUMBER	_	20154155	:#I	20154156	9	20154157		
SAMPLE ID		S934		S935		S936		
TEST STATUS								
				0550+00		0550+00		
LOCATION	-	19' RT	S <del>5</del> 5	00		13' LT		
DEPTH IN FEET	-	0-5		0-5		0-5		
MAT'L COLOR	-	BROWN	3 <del>=</del>	BROWN	-	BROWN		
MAT'L TYPE	-		: <del>-</del>		-			
LATITUDE DEG-MIN-				34 37		34 37 5.10		
LONGITUDE DEG-MIN-	SEC -	92 45 9.	40	92 45	3.30	92 45 3.10		
3/4 3/8 NO. NO. NO.	IN IN IN IN 4 - 10 - 40 - 80 - 200 -	98 92 81 73		100 96 87 74 68 63		.100 94 85 72 58 53 47		
LIQUID LIMIT	_	27		35		31		
	_		1.5		24	13		
	_		-		=	A-6(3)		
UNIFIED SOIL	_	( - /	%≅	,	-	, ,		
% MOISTURE CONTENT	-	28.2	::=	26.1	-	18.2		
ACHMSC	(TNI) _		-	2.0		2.0		
ACHMBC	(IN) -			4.0		4.0		
AGG.BASE CRS CL-7	(IN) -		-	7.0	7=	7.0		
rice. Bright cres ch /	(774)			, . 0	:=	, <b>, , ,</b>		
	: <del>=</del> :		-		3 <del>=</del>			
	. T.				15	125		
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REMARKS - W=MULTIPLE LAYERS, X=STRIPPED, Z=AUGER REFUSAL
- ALL LOCATIONS MEASURED FROM CENTERLINE OF EXISTING HIGHWAY

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### MICHAEL BENSON, MATERIALS ENGINEER

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

DATE - 02/1  JOB NUMBER - 0614  FEDERAL AID NO TO B  PURPOSE - SOIL  SPEC. REMARKS - NO S  SUPPLIER NAME - STAT  NAME OF PROJECT - GA  PROJECT ENGINEER - NO  PIT/QUARRY - ARKANS  LOCATION - SALINE  SAMPLED BY - D.DICKE  SAMPLE FROM - TEST H  MATERIAL DESC SOII	42 E ASSIC SURVEY PECIFIC E ARLAND OT APPL EAS C, COUNT ERSON	Y SAMPLE CATION CHECK CO.LINE - BENTON ICABLE TY		MATERIAL SPEC. YEA SUPPLIER COUNTY/SI DISTRICT /TS.)(S)  DATE SAM DATE RECI DATE TES	NO 7 CODE - SSRVPS AR - 2014 ID 1 TATE - 62 NO 06 PLED - 12/03/15 EIVED - 12/10/15 TED - 02/10/16
LAB NUMBER  SAMPLE ID  TEST STATUS  STATION  LOCATION  DEPTH IN FEET  MAT'L COLOR  MAT'L TYPE  LATITUDE DEG-MIN-S  LONGITUDE DEG-MIN-S  PASSING 2  1 1/2  3/4 3/8  NO.  NO.  NO.	- - - - - - EEC - IN	20154158 S937	- 20154159 - S938 - INFORMATI - 0715+00 - 06' RT - 0-5 - BROWN		20154160 S939 INFORMATION ONLY 0715+00 13' RT 0-5 BROWN 34 36 47.30 92 42 9.30 100 100 100 100 100 96
LIQUID LIMIT PLASTICITY INDEX AASHTO SOIL UNIFIED SOIL % MOISTURE CONTENT ACHMSC	(IN) - (IN)	24 7 A-4(0) 15.9	- 48 - 24 - A-7-6(2 - 21.5 - 3.25W - 6.5 	4)	53 26 A-7-6(29) 22.7 9.0

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

- ALL LOCATIONS MEASURED FROM CENTERLINE OF EXISTING HIGHWAY

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### MICHAEL BENSON, MATERIALS ENGINEER

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

DATE       - 02/11/16       SEQUENCE NO 5       8         JOB NUMBER       - 061442       MATERIAL CODE - 5       SSRVPS         FEDERAL AID NO TO BE ASSIGNED       SPEC. YEAR - 2014       - 2014         PURPOSE - SOIL SURVEY SAMPLE       SUPPLIER ID 1       - 62         SUPPLIER NAME - STATE       DISTRICT NO 06       - 62         NAME OF PROJECT - GARLAND CO.LINE - BENTON (SAFETY IMPRVTS.) (S)       - 06         PROJECT ENGINEER - NOT APPLICABLE       - NOT APPLICABLE       - 12/03/15         LOCATION - SALINE, COUNTY - ARKANSAS       DATE SAMPLED - 12/10/15       - 12/10/15         SAMPLE BOM - TEST HOLE - DATE TESTED - 02/10/16       - 02/10/16         MATERIAL DESC SOIL SURVEY - R VALUE - PAVEMENT SOUNDINGS       - 02/10/16								
LAB NUMBER	- 2015416	1 12	20154162	- 20154163				
SAMPLE ID	- S940		S941	- S942				
TEST STATUS				y - INFORMATION ONLY				
STATION	- 0715+00		0723+00	- 0723+00				
LOCATION	- 21' RT	=	06' LT	- 13' LT				
DEPTH IN FEET	- 0-5	22	0-5	- 0-5				
MAT'L COLOR	- BROWN		BROWN	BROWN				
MAT'L TYPE	_			_				
LATITUDE DEG-MIN-	SEC - 34 3	6 47.30 -	34 36 42.70	_ 34 36 42.80				
LONGITUDE DEG-MIN-			92 42 1.30	92 42 1.30				
3/4 3/8 NO. NO. NO.	IN IN 100 IN 93 IN 93 4 - 92 10 - 89 40 - 87 80 - 86 200 - 82		100 97 95 92 90 86	- - - 100 - 99 - 97 - 92 - 89 84				
LIQUID LIMIT	- 42	=	49	= 52				
PLASTICITY INDEX	- 18	₩7	28	<b>⇒</b> 30				
AASHTO SOIL	- A-7-6(	15)	A-7-6(25)	A-7-6(27)				
UNIFIED SOIL	-	=		**************************************				
% MOISTURE CONTENT	- 21.2	=.	26.8	23.8				
ACHMSC	(IN)	_	4.OWX	- 7.0W				
PCCP	(IN)		6.0					
AGG.BASE CRS CL-7	(IN)	-		7.0				
AGG. DADE CRD CL /	/ TIM	===		-				
	=	-		-				
	-	-		-				
	-	-		_				
	_	-		-1				
	=	-		<b>-</b> *				

REMARKS - W-MULTIPLE LAYERS, X-STRIPPED, Z-AUGER REFUSAL
- ALL LOCATIONS MEASURED FROM CENTERLINE OF EXISTING HIGHWAY

### MICHAEL BENSON, MATERIALS ENGINEER

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

DATE - 02/11/16  JOB NUMBER - 061442  FEDERAL AID NO TO BE ASSIGNED  PURPOSE - SOIL SURVEY SAMPLE  SPEC. REMARKS - NO SPECIFICATION CHECK  SUPPLIER NAME - STATE  NAME OF PROJECT - GARLAND CO.LINE - BEI  PROJECT ENGINEER - NOT APPLICABLE  PIT/QUARRY - ARKANSAS  LOCATION - SALINE, COUNTY  SAMPLED BY - D.DICKERSON  SAMPLE FROM - TEST HOLE  MATERIAL DESC SOIL SURVEY - R VALUE	COUNTY/STATE - 62 DISTRICT NO 06 NTON (SAFETY IMPRVTS.)(S)  DATE SAMPLED - 12/03/15 DATE RECEIVED - 12/10/15 DATE TESTED - 02/10/16
LAB NUMBER - 20154164	- 20154165 <b>-</b> 20154166
SAMPLE ID - S943	_ S944
<del></del>	ONLY - INFORMATION ONLY - INFORMATION ONLY
STATION - 0723+00	- 0731+00 - 0731+00
LOCATION - 21' LT	- 06' RT - 13' RT
DEPTH IN FEET - 0-5	0-5 0-5
MAT'L COLOR - BROWN	BROWN BROWN
MAT'L TYPE -	
LATITUDE DEG-MIN-SEC - 34 36 42	.80 - 34 36 41.40 - 34 36 41.40
LONGITUDE DEG-MIN-SEC - 92 42 1	.20 92 41 51.50 92 41 51.40
<pre>% PASSING 2 IN 1 1/2 IN 3/4 IN 100 3/8 IN 91 NO. 4 - 81 NO. 10 - 70 NO. 40 - 61 NO. 80 - 57 NO. 200 - 52</pre> LIQUID LIMIT - 40	- 100 - 100 - 96 - 99 - 89 - 97 - 79 - 91 - 75 - 89 - 70 - 86
PLASTICITY INDEX - 22	= 37 = 14 = 18
AASHTO SOIL - A-6(8)	- A-6(9) A-7-6(16)
UNIFIED SOIL -	= 11 7 3 (10)
% MOISTURE CONTENT - 16.9	20.4 23.7
ACHMSC (IN)	- 5.0W - 7.5W
PCCP (IN)	6.5
-	5. 2
-	<sup>107</sup> 발
-	<b>≅</b> ∤ -
-	#1 = T
-	₹9 20
- -	= -

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

- ALL LOCATIONS MEASURED FROM CENTERLINE OF EXISTING HIGHWAY

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### MICHAEL BENSON, MATERIALS ENGINEER

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

DATE - 02/1 JOB NUMBER - 0614 FEDERAL AID NO TO B PURPOSE - SOIL SPEC. REMARKS - NO S SUPPLIER NAME - STAT NAME OF PROJECT - GA PROJECT ENGINEER - NO PIT/QUARRY - ARKANS LOCATION - SALINE SAMPLED BY - D.DICKE SAMPLE FROM - TEST H MATERIAL DESC SOIL	42 E ASSI SURVE PECIFI E RLAND T APPL AS , COUN RSON OLE	Y SAMPLE CATION CHECK CO.LINE - BENTON ICABLE TY		SPEC. YEAR SUPPLIER II COUNTY/STA DISTRICT NO TS.)(S)  DATE SAMPL DATE RECEL DATE TESTE	ODE - SSRVPS - 2014 D 1 TE - 62 O 06 JED - 12/03/15 EVED - 12/10/15
LAB NUMBER	_	20154167	- 20154168	= 2	20154169
SAMPLE ID	_		⊆ S947		5948
TEST STATUS	_	INFORMATION ONLY	- INFORMATIO	ON ONLY = ]	ENFORMATION ONLY
STATION	_	0731+00	0757+00	= 0	757+00
LOCATION	_	20' RT	06' RT	<i>=</i> 0 1	L3' RT
DEPTH IN FEET	_	0-5	0-5	- C	)-5
MAT'L COLOR	_	BROWN	GRAY	H	BROWN
MAT'L TYPE	_		7 <u>~</u>	2	
LATITUDE DEG-MIN-S	EC -	34 36 41.40	34 36	47.70	34 36 47.60
LONGITUDE DEG-MIN-S	EC -	92 41 51.70	92 41	20.90	92 41 20.90
1 1/2 3/4 3/8 NO. NO. NO. NO. LIQUID LIMIT PLASTICITY INDEX AASHTO SOIL	IN IN 4 - 10 - 40 -	99 98 95 88 81 75 33	- 100 - 99 - 98 - 96 - 92 - 88 81 - 25 - 8 - A-4(4)		100 96 90 84 80 74 -28 11 A-6(6)
UNIFIED SOIL	-		=		
% MOISTURE CONTENT	-	9.7	20.0		15.4
ACHMSC	(IN) -		= 3.5WX	· ·	2.5
ACHMBC	(IN) -				6.0
PCCP	(IN) -		6.0	-	555
AGG.BASE CRS CL-7	(IN)	5.5		52 72	7.0
	_		= =	-	
	-		÷	396	
	-		=	S.#	
	-		±	-	
	_		-	74	

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

- ALL LOCATIONS MEARSURED FROM CENTERLINE OF EXISTING HIGHWAY

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### MICHAEL BENSON, MATERIALS ENGINEER

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

DATE - 02/11/16  JOB NUMBER - 061442  FEDERAL AID NO TO BE ASSIGNED  PURPOSE - SOIL SURVEY SAMPLE  SPEC. REMARKS - NO SPECIFICATION CHECK  SUPPLIER NAME - STATE  NAME OF PROJECT - GARLAND CO.LINE - BENTON  PROJECT ENGINEER - NOT APPLICABLE  PIT/QUARRY - ARKANSAS  LOCATION - SALINE, COUNTY  SAMPLED BY - D.DICKERSON  SAMPLE FROM - TEST HOLE  MATERIAL DESC SOIL SURVEY - R VALUE - PAR	DATE SAMPLED - 12/03/15 DATE RECEIVED - 12/10/15 DATE TESTED - 02/10/16
LAB NUMBER - 20154170	- 20154171 - 20154172
SAMPLE ID - S949	_ S950 _ S951
TEST STATUS - INFORMATION ONL	Y - INFORMATION ONLY - INFORMATION ONLY
STATION - 0757+00	0765+00 0765+00
LOCATION - 20' RT	06' LT 13' LT
DEPTH IN FEET - 0-5	0-5 0-5
MAT'L COLOR - GRAY	GRAY
MAT'L TYPE -	
LATITUDE DEG-MIN-SEC - 34 36 47.60	
LONGITUDE DEG-MIN-SEC - 92 41 20.90	92 41 13.10 92 41 13.10
% PASSING 2 IN	- Par
1 1/2 IN	<u>-</u>
3/4 IN	- 100 - 100
3/8 IN 100	- 99 - 98
NO. 4 - 97	97 93
NO. 10 - 93	93 87
NO. 40 - 84	_ 85 _ 80
NO. 80 - 79	- 81 - 76
NO. 200 - 72	73 68
LIQUID LIMIT - 29	- 31 - 30
PLASTICITY INDEX - 11	- 14 - 12
AASHTO SOIL - A-6(6)	A-6(8) A-6(6)
UNIFIED SOIL -	₩ <b>%</b>
% MOISTURE CONTENT - 18.9	19.2 21.1
ACHMSC (IN)	- 4.0 - 2.0
ACHMBC (IN)	= 5.5
PCCP (IN)	6.0
<b>□</b> 0	
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REMARKS - W-MULTIPLE LAYERS, X-STRIPPED, Z-AUGER REFUSAL - ALL LOCATIONS MEASURED FROM CENTERLINE OF EXISTING HIGHWAY

AASHTO TESTS : T24 T88 T89 T90 T265

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### MICHAEL BENSON, MATERIALS ENGINEER

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

DATE - 02/11/16 SEQUENCE NO. = 12  JOB NUMBER - 061442 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 - 62  SUPPLIER NAME - STATE DISTRICT NO 06  NAME OF PROJECT - GARLAND CO.LINE - BENTON (SAFETY IMPRVTS.) (S)  PROJECT ENGINEER - NOT APPLICABLE  PIT/QUARRY - ARKANSAS  LOCATION - SALINE, COUNTY DATE SAMPLED - 12/03/15  SAMPLED BY - D.DICKERSON DATE RECEIVED - 12/10/15  SAMPLE FROM - TEST HOLE DATE TESTED - 02/10/16  MATERIAL DESC SOIL SURVEY - R VALUE - PAVEMENT SOUNDINGS							
	- 20154174						
SAMPLE ID - S952	_ S953						
	- INFORMATION ONLY - INFORMATION ONLY						
	- 0771+00 - 0775+00						
LOCATION - 20' LT	- 24' RT - 06' LT						
DEPTH IN FEET - 0-5	0-5 0-5						
MAT'L COLOR - GRAY	BROWN BROWN						
MAT'L TYPE -							
LATITUDE DEG-MIN-SEC - 34 36 50.20	- 34 36 49.60 - 34 36 47.10						
LONGITUDE DEG-MIN-SEC - 92 41 13.20							
% PASSING 2 IN -	- #S						
1 1/2 IN	- ®						
3/4 IN 100	- 100						
3/8 IN 99	- 98						
NO. 4 - 97	96 100						
NO. 10 - 89	92 97						
NO. 40 - 81	_ 84 90						
NO. 80 - 75	_ 80 = 87						
NO. 200 - 67	72 83						
LIQUID LIMIT - 31	- 31 - 41						
PLASTICITY INDEX - 12	11 = 21						
AASHTO SOIL - A-6(6)	- A-6(6) A-7-6(17)						
UNIFIED SOIL -							
% MOISTURE CONTENT - 20.5	21.7 26.7						
ACHMSC (IN)	4.0W						
PCCP (IN)	6.0						
	- +						
-	- <del>-</del>						
-	- *						
-	- =						
	= X						

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

### MICHAEL BENSON, MATERIALS ENGINEER

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

DATE - 02/11/16  JOB NUMBER - 061442  FEDERAL AID NO TO BE ASSIGNED  PURPOSE - SOIL SURVEY SAMPLE  SPEC. REMARKS - NO SPECIFICATION CHECK  SUPPLIER NAME - STATE  NAME OF PROJECT - GARLAND CO.LINE - BENTON  PROJECT ENGINEER - NOT APPLICABLE  PIT/QUARRY - ARKANSAS  LOCATION - SALINE, COUNTY  SAMPLED BY - D.DICKERSON  SAMPLE FROM - TEST HOLE  MATERIAL DESC SOIL SURVEY - R VALUE- PAY	DATE SAMPLED - 12/03/15  DATE RECEIVED - 12/10/15  DATE TESTED - 02/10/16  VEMENT SOUNDINGS
LAB NUMBER - 20154176	= 20154177 = 20154178
SAMPLE ID - S955	_ S956 _ S957
TEST STATUS - INFORMATION ONLY	- INFORMATION ONLY - INFORMATION ONLY
STATION - 0775+00	- 0775+00 - 1038+00
LOCATION - 13' LT	_ 21' LT _ 06' RT
DEPTH IN FEET - 0-5	0-5
MAT'L COLOR - BROWN	_ BR/GR _ BROWN
MAT'L TYPE -	7.
LATITUDE DEG-MIN-SEC - 34 36 47.30	
LONGITUDE DEG-MIN-SEC - 92 41 2.40	92 41 2.40 92 36 10.60
% PASSING 2 IN	- #8
1 1/2 IN	- #8
3/4 IN	- 100
3/8 IN 100	100 99
NO. 4 - 98	_ 96 _ 95
NO. 10 - 91	_ 86 83
NO. 40 - 84	_ 64
NO. 80 - 82	- 60 - 62
NO. 200 - 76	56 57
LIQUID LIMIT - 37	- 31 - 28
PLASTICITY INDEX - 18	- 14 9
AASHTO SOIL - A-6(12)	A-6(5) A-4(3)
UNIFIED SOIL -	
% MOISTURE CONTENT - 21.7	20.3 18.4
ACHMSC (IN) - 9.0W	- 3.5W
PCCP (IN)	- 7.0
-	<del>-</del>
- -	
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-	iiii =
-	#8 <b>-</b>
-	<u>=</u>
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REMARKS - W=MULTIPLE LAYERS, X=STRIPPED, Z=AUGER REFUSAL

- ALL LOCATIONS MEASURED FROM CENTERLINE OF EXISTING HIGHWAY

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### MICHAEL BENSON, MATERIALS ENGINEER

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

DATE - 02/11/16  JOB NUMBER - 061442  FEDERAL AID NO TO BE ASSIGNED  PURPOSE - SOIL SURVEY SAMPLE  SPEC. REMARKS - NO SPECIFICATION CHECK  SUPPLIER NAME - STATE  NAME OF PROJECT - GARLAND CO.LINE - BENTON  PROJECT ENGINEER - NOT APPLICABLE  PIT/QUARRY - ARKANSAS  LOCATION - SALINE, COUNTY  SAMPLED BY - D.DICKERSON  SAMPLE FROM - TEST HOLE  MATERIAL DESC SOIL SURVEY - R VALUE - PAV	DATE SAMPLED - 12/03/15 DATE RECEIVED - 12/10/15 DATE TESTED - 02/10/16
LAB NUMBER - 20154179	= 20154180 = 20154181
	= S959 = S960
TEST STATUS - INFORMATION ONLY	- INFORMATION ONLY - INFORMATION ONLY
STATION - 1038+00	1038+00 - 1044+00
LOCATION - 13' RT	22' RT 25' LT
DEPTH IN FEET - 0-5	0-5
MAT'L COLOR - BROWN	BROWN BROWN
MAT'L TYPE -	E
LATITUDE DEG-MIN-SEC - 34 35 56.20	
LONGITUDE DEG-MIN-SEC - 92 36 10.60	92 36 10.60 92 36 8.20
% PASSING 2 IN	
1 1/2 IN	<u>-</u>
3/4 IN 100	- 100
3/8 IN 99	100 - 97
NO. 4 - 94	98 - 87
NO 10 - 81	88 _ 76
NO. 40 - 66	= 67 _ 61
NO. 80 - 61	59 - 54 53 46
NO 200 - 56	53 46
LIQUID LIMIT - 31	- 33 - 32
PLASTICITY INDEX - 10	- 10 - 10
AASHTO SOIL - A-4(3)	A-4(3) A-4(2)
UNIFIED SOIL -	· · · · · · · · · · · · · · · · · · ·
% MOISTURE CONTENT - 17.1	14.6 17.1
ACHMSC (IN) - 5.0W	
-	<del>-</del>
- -	
-	-
-	- 2
-	- **
- -	- ## -
- -	

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

- ALL LOCATIONS MEASURED FROM CENTERLINE OF EXISTING HIGHWAY

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### MICHAEL BENSON, MATERIALS ENGINEER

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

DATE - 02/10/16  JOB NUMBER - 061442  FEDERAL AID NO TO BE ASSIGNED  PURPOSE - SOIL SURVEY SAMPLE  SPEC. REMARKS - NO SPECIFICATION CHECK  SUPPLIER NAME - STATE  NAME OF PROJECT - GARLAND CO.LINE - BENTON  PROJECT ENGINEER - NOT APPLICABLE  PIT/QUARRY - ARKANSAS  LOCATION - SALINE, COUNTY  SAMPLED BY - D.DICKERSON  SAMPLE FROM - TEST HOLE  MATERIAL DESC SOIL SURVEY - R VALUE- PA	DATE SAMPLED - 12/03/15 DATE RECEIVED - 12/10/15 DATE TESTED - 02/10/16
LAB NUMBER - 20154182	- 20154183 = 20154184
SAMPLE ID - S961	_ S962 = S963
TEST STATUS - INFORMATION ONLY	Y - INFORMATION ONLY - INFORMATION ONLY
STATION - 1054+00	- 1062+00 - 1062+00
LOCATION - 200' RT	- 06' LT = 13' LT
DEPTH IN FEET - 0-3Z	0-5 0-5
MAT'L COLOR - BROWN	_ BROWN _ BROWN
MAT'L TYPE -	-
LATITUDE DEG-MIN-SEC - 34 35 43.60	
LONGITUDE DEG-MIN-SEC - 92 36 1.80	92 35 56.50 92 35 56.40
% PASSING 2 IN 1 1/2 IN 3/4 IN 100 3/8 IN 96 NO. 4 - 90 NO. 10 - 80 NO. 40 - 63 NO. 80 - 58 NO. 200 - 54	
	- 00
LIQUID LIMIT - 32	- 25 - 29 - 6 - 7
PLASTICITY INDEX - 8	
AASHTO SOIL - A-4(2)	A-4(1) A-4(2)
UNIFIED SOIL -	32.4 29.1
% MOISTURE CONTENT - 22.6	32.4 29.1
ACHMSC (IN)	- 5.5W - 7.0WX
PCCP (IN) -	- 6.0
- -	
-	-
-	<u>e</u> P
<del>-</del>	* ×
-	÷ %
- -	5 (5 5 (6)
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REMARKS - W=MULTIPLE LAYERS, X=STRIPPED, Z=AUGER REFUSAL

- ALL LOCATIONS MEASURED FROM CENTERLINE OF EXISTING HIGHWAY

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

20		,				
DATE - 02/11/1  JOB NUMBER - 061442  FEDERAL AID NO TO BE A  PURPOSE - SOIL SU  SPEC. REMARKS - NO SPEC  SUPPLIER NAME - STATE  NAME OF PROJECT - GARLA  PROJECT ENGINEER - NOT A  PIT/QUARRY - ARKANSAS	SSI RVE IFI ND PPI	Y SAMPLE CATION CHECK CO.LINE - BENTON ICABLE	(SA	FETY IMPRVI	MATERIAL SPEC. YEA SUPPLIER COUNTY/SI DISTRICT (S.) (S)	NO 16 CODE - SSRVPS AR - 2014 ID 1 FATE - 62 NO 06
LOCATION - SALINE, C SAMPLED BY - D.DICKERSO SAMPLE FROM - TEST HOLE MATERIAL DESC SOIL SU	N		'EME	ENT SOUNDING	DATE REC	EIVED - 12/10/15 TED - 02/10/16
MATERIAL DESC SOIL SC	IV VI	SI - K VALIOE- FAV	171-17	MI BOONDIN		
LAB NUMBER	-	20154185	35	20154186		20154187
SAMPLE ID	-	S964		S965		S966
TEST STATUS	-					INFORMATION ONLY
STATION	-			1077+00		1077+00
LOCATION		19' LT	=	06' RT		13' RT
DEPTH IN FEET		0-5	=	0-5	=	0-5
MAT'L COLOR MAT'L TYPE	-	BROWN	-	BROWN	=	BR/GR
LATITUDE DEG-MIN-SEC		34 35 37.10		34 35		34 35 26.40
LONGITUDE DEG-MIN-SEC	-	92 35 56.50		92 35	40.60	92 35 40.70
% PASSING 2 IN. 1 1/2 IN.			THE THE		-	
3/4 IN.		100	77	100	-	100
3/8 IN.		87	2	99	-	88
NO. 4	-	76	-	94	_	80
NO. 10	-	59	-	86	_	68
NO. 40	-	38	20	71	_	55
ио. 80	-	29		65	_	50
NO. 200	-	23		59		47
LIQUID LIMIT	77	29	÷	33	9	31 10
PLASTICITY INDEX	÷	8	2	14 A-6(6)	: <b>*</b>	
AASHTO SOIL		A-2-4(0)	_	A-0(0)	-	A-4(2)
UNIFIED SOIL % MOISTURE CONTENT	_	27.6	*	10.5	\ <del></del>	12.8
		27.0		5.0W	_	3.9W
ACHMSC (IN) PCCP (IN)			_	6.0	_	3.9W
PCCP (IN)	2		-	0.0	-	
	-		-		-	
	**		-		-	
	== ==		-		_	
	_		_		_	
	*		_		_	
	77		-		-	

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

- ALL LOCATIONS MEASURED FROM CENTERLINE OF EXISTING HIGHWAY

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### MICHAEL BENSON, MATERIALS ENGINEER

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

DATE - 02/11/16  JOB NUMBER - 061442  FEDERAL AID NO TO BE ASSIGNATION - SOIL SURVEY  SPEC. REMARKS - NO SPECIFICATION - STATE  NAME OF PROJECT - GARLAND COUNTER OF PROJECT - NOT APPLICATION - SALINE, COUNTER OF PROJECT - SALINE, COUNTER OF PROJECT - SALINE, COUNTER OF PROJECT - SOIL SURVEY  MATERIAL DESC SOIL SURVEY	SAMPLE ATION CHECK O.LINE - BENTON (S CABLE	MATERI. SPEC. SUPPLI: COUNTY DISTRIC SAFETY IMPRVTS.)(S)  DATE S DATE R DATE I	CE NO 17 AL CODE - SSRVPS YEAR - 2014 ER ID 1 /STATE - 62 CT NO 06  AMPLED - 12/03/15 ECEIVED - 12/10/15 ESTED - 02/10/16
LAB NUMBER -	20154188	- 20154189	20154190
	20131100	- S968	= S969
			- INFORMATION ONLY
	1077+00	- 1087+00	1094+00
	22' RT	- 30' RT	- 06' LT
DEPTH IN FEET - (	0-5	- 0-1Z	0-5
MAT'L COLOR - 1	BROWN	BROWN	BROWN
MAT'L TYPE -		_	
LATITUDE DEG-MIN-SEC -		- 34 35 21.10	34 35 14.10
LONGITUDE DEG-MIN-SEC -	92 35 40.70	92 35 35.30	92 35 36.80
% PASSING 2 IN		_	-
1 1/2 IN	_	- 100	_
3/4 IN	100	- 92	- 100
3/8 IN		- 77	- 98
NO. 4 -	95	- 69	94
NO. 10 -	83	_ 60	_ 87
NO. 40 -	66	_ 49	_ 76
NO. 80 -	58	- 41	_ 71
NO. 200 -	51	31	57
LIQUID LIMIT -	27	- 25	<b>■</b> 35
PLASTICITY INDEX -	8	= 7	- 18
AASHTO SOIL -	A-4(1)	A-2-4(0)	A-6(7)
UNIFIED SOIL -		_	-
% MOISTURE CONTENT -	15.8	13.2	20.5
ACHMSC (IN) -			= 4.0W
PCCP (IN) -	表表表.	= ===	= 6.0
_		<b>=</b> :	-
-		*	-
			- <del> </del>
		表 (2)	
-		*	Ħ
-		<b>5</b> /1	₩ A
-		<b>3</b>	<u>=</u>

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

- ALL LOCATIONS MEASURED FROM CENTERLINE OF EXISTING HIGHWAY

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

SEQUENCE NO. = 18 - 02/11/16 DATE - 061442 MATERIAL CODE - SSRVPS JOB NUMBER FEDERAL AID NO. - TO BE ASSIGNED SPEC. YEAR - 2014 PURPOSE - SOIL SURVEY SAMPLE SUPPLIER ID. = 1 COUNTY/STATE - 62 SPEC. REMARKS - NO SPECIFICATION CHECK SUPPLIER NAME - STATE DISTRICT NO. - 06 NAME OF PROJECT - GARLAND CO.LINE - BENTON (SAFETY IMPRVTS.)(S) PROJECT ENGINEER - NOT APPLICABLE PIT/OUARRY - ARKANSAS DATE SAMPLED = 12/03/15 LOCATION - SALINE, COUNTY SAMPLED BY - D.DICKERSON DATE RECEIVED = 12/10/15 SAMPLE FROM - TEST HOLE DATE TESTED - 02/10/16 MATERIAL DESC. - SOIL SURVEY - R VALUE- PAVEMENT SOUNDINGS - 20154191 - 20154192 LAB NUMBER \_ S971 SAMPLE ID - S970 TEST STATUS - INFORMATION ONLY - INFORMATION ONLY -1094+00 - 1094+00 STATION = 22' LT - 13' LT LOCATION 0-5 DEPTH IN FEET - 0-5 BROWN - BROWN MAT'L COLOR MAT'L TYPE LATITUDE DEG-MIN-SEC - 34 35 14.10 = 34 35 14.10 LONGITUDE DEG-MIN-SEC - 92 35 36.70 92 35 36.70 2 IN. -% PASSING 1 1/2 IN. -3/4 IN. -3/8 IN. - 100 100 98 NO. 4 - 97 91 NO. 10 -93 84 NO. 40 -82 75 77 NO. 80 -NO. 200 - 61 59 34 LIQUID LIMIT - 33 PLASTICITY INDEX - 18 15 A-6(6) AASHTO SOIL - A-6(8) UNIFIED SOIL 23.3 16.5 % MOISTURE CONTENT -5.5WX (IN) -(IN) -AGG.BASE CRS CL-7 8.0

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- ALL LOCATIONS MEASURED FROM C.L. OF EXISTING RDWY.

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SPEC. REMARKS - NO SPECI SUPPLIER NAME - STATE NAME OF PROJECT - GARLAN PROJECT ENGINEER - NOT AP PIT/QUARRY - ARKANSAS LOCATION - SALINE, CO SAMPLED BY - D.DICKERSON SAMPLE FROM - TEST HOLE	SIGNED VEY SAMPLE FICATION CHECK TO CO.LINE - BENTON (SAFETY IMPRV) PLICABLE	DATE SAMPLED - 12/03/15 DATE RECEIVED - 12/10/15 DATE TESTED - 02/10/16
TEST STATUS STATION LOCATION DEPTH IN FEET		- 0534+00 - 20' RT - 0-5 - BROWN
% PASSING 2 IN. 1 1/2 IN. 3/4 IN. 3/8 IN. NO. 4 NO. 10 NO. 40 NO. 80 NO. 200	- 100 - 100 - 100 - 74 - 96 - 89 - 33 - 77 - 26 - 69 - 22 - 60	- - 100 - 93 - 86 - 75 - 65 - 60 - 55
LIQUID LIMIT PLASTICITY INDEX AASHTO SOIL UNIFIED SOIL % MOISTURE CONTENT	- ND - 23 - NP - 05 - A-1-B(0) - A-4(1)	- 31 - 11 - A-6(4) 

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- ALL LOCATIONS MEASURE FROM CENTERLINE OF EXISTING HIGHWAY

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

02/12/16		OPONENCE NO 2
DATE - 02/12/16 JOB NUMBER - 061442		SEQUENCE NO 2
	CHED	MATERIAL CODE = RV
FEDERAL AID NO TO BE ASSI		SPEC. YEAR - 2014
PURPOSE - SOIL SURVE		SUPPLIER ID. = 1
SPEC. REMARKS - NO SPECIFI	CATION CHECK	COUNTY/STATE = 62
SUPPLIER NAME - STATE	GO T THE DENIENT / GREEN TARREN	DISTRICT NO 06
	CO.LINE - BENTON (SAFETY IMPRV	rs.)(s)
PROJECT ENGINEER - NOT APPL	ICABLE	
PIT/QUARRY - ARKANSAS		
LOCATION - SALINE, COUN	TY	DATE SAMPLED - 12/03/15
SAMPLED BY - D.DICKERSON		DATE RECEIVED - 12/10/15
SAMPLE FROM - TEST HOLE		DATE TESTED - 02/10/16
MATERIAL DESC SOIL SURVE	EY - RESISTANCE R-VALUE ACTUAL	RESULTS
LAB NUMBER -	20154196 - 20154197	20154198
SAMPLE ID -	RV975 = RV976	- RV977
TEST STATUS -	INFORMATION ONLY - INFORMATIO	ON ONLY - INFORMATION ONLY
STATION -	0731+00 - 0765+00	1062+00
LOCATION -	20' RT = 20' LT	🥭 19' LT
DEPTH IN FEET -	0-5	0-5
MAT'L COLOR -	BROWN GRAY	BROWN
MAT'L TYPE -	= · · = · · · · · · · · · · · · · · · ·	
LATITUDE DEG-MIN-SEC -	34 36 41.40 = 34 36	50.20 34 35 37.10
LONGITUDE DEG-MIN-SEC -	92 41 51.70 92 41	13.20 92 35 56.50
% PASSING 2 IN	<b>8</b> 0	.₩
1 1/2 IN	æ/i	≈
3/4 IN	100 = 100	100
3/8 IN	97 99	90
NO. 4 -	90 94	83
NO. 10 -	84 _ 85	67
NO. 40 -	75 73	41
NO. 80 -	70 = 66	32
NO. 200 -	65 59	27
LIQUID LIMIT -	33 = 32	- 29
PLASTICITY INDEX -	11 = 11	- 05
AASHTO SOIL -	A-6(5) - A-6(4)	- A-2-4(0)
UNIFIED SOIL -	A-0(3)	-
	*	-
% MOISTURE CONTENT -		
-	<b></b>	= *
-	-	-
-	-	_
	- -	_
_	-	-
-	-	-
-	-	-
-	-	-
-	-	-

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

PROJECT ENGINEER - NOT APPI PIT/QUARRY - ARKANSAS LOCATION - SALINE, COUN SAMPLED BY - D.DICKERSON SAMPLE FROM - TEST HOLE	Y SAMPLE CATION CHECK CO.LINE - BENTON (SAFETY IMPRVT	DATE SAMPLED - 12/03/15 DATE RECEIVED - 12/10/15 DATE TESTED - 02/10/16
	Y - RESISTANCE R-VALUE ACTUAL	RESULIS
LAB NUMBER -	20154199	- N
	RV978 -	5 <del>7.</del>
TEST STATUS -		_
<del></del>	1094+00	
	22' LT	-
DEPTH IN FEET -	0-5	<u>~</u>
MAT'L COLOR -	BROWN	
MAT'L TYPE -	-	-
LATITUDE DEG-MIN-SEC -	34 35 14.10 -	3 <del>5</del> 2
LONGITUDE DEG-MIN-SEC -	92 35 36.70	ž.
% PASSING 2 IN	<u> </u>	=
1 1/2 IN	-	=:
3/4 IN	100 -	-
3/8 IN	97	. <del></del>
NO. 4 -	90	=
NO. 10 -	82	-
NO. 40 -	69 _	-
NO. 80 -	63 -	·
NO. 200 -	48	<u>«</u>
T TOUTD I THE	0.0	
LIQUID LIMIT -	29 =	<u> </u>
PLASTICITY INDEX -	10 -	
AASHTO SOIL -	A-4(2)	:#
UNIFIED SOIL -	¥	-
% MOISTURE CONTENT -		
-	-	-
-	-	-
_	-	- 5
-	<u>-</u>	
- -	-	-
-	-	-
-	-	-
-	-	-
-	-	-

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