



Ardaman & Associates, Inc.

Geotechnical, Environmental and
Materials Consultants

February 15, 2012
File No. 11-6187

Florida Department of Transportation
1650 N. Kepler Road
DeLand, Florida 32724

Attention: Mr. Tim Keefe

Subject: Final Pavement Evaluation and Condition Data Report
SR 40 From Tymber Creek Road to East of Perrott Street
Volusia County, Florida
FPN: 424904-1
Section No.: 79100
Contract No. C8S59

Dear Mr. Keefe,

As requested, we have obtained pavement core and other relative information for the subject project. Our scope of work was conducted in accordance with your request for proposal issued, November 17, 2011.

The pavement core data is presented on the attached Pavement Evaluation and Condition Data (PECD) Sheets 1 through 5. We have also included a CD containing the PECD excel files and roadway and core photographs. To the best of our knowledge, the information presented is accurate and represents the existing pavement conditions at the locations cored. The cores have been retained in storage awaiting instructions from FDOT concerning their disposal.

Please contact us if you have any questions or need any additional information.

Very truly yours,
ARDAMAN AND ASSOCIATES, INC.
Certificate of Authorization No. 5950

JMP 2/15/12
★ JASON MICHAEL PARKER ★
LICENSE
No. 65023
★ Jason M. Parker, P.E. ★
Senior Project Engineer
STATE OF FLORIDA
Florida License No. 65023
★ PROFESSIONAL ENGINEER ★
JMP/KSP

State of Florida Department of Transportation
PAVEMENT EVALUATION AND CONDITION DATA SHEET

Project No.: 424904-1				Cored By: Ardaman & Associates					Date: 12/14/11-12/16/11					Page No.: 1 of 5									
County: Volusia				Highway Sect. No.:					From: Tymber Creek Road					To: Perrott Street									
Road No.: SR 40				Begin MP: 25.429					End MP: 30.170					Length: 4.741									
Core No.	MP	Distance from left edge of lane (ft)	Lane	Wheel Path	Pavement Layer (in.)								Base		Crack				Pavt Cond.	Rut Depth (in)	Cross Slope (%)	Comments	
					FC-5	FC-2	FC-3	FC-9.5	SP-12.5	Type S	ABC	Core Length (in)	Type	Thick-ness (in)	Depth (in)	Type	Class	Extent					
1	25.531	2.0	OL		0.8						3.2	7.0	11.1	ABC	7.0	---	---	---	---	G			
2	25.531	9.0	LRTL	X	1.0						3.6	6.7	11.3	ABC	6.7	---	---	---	---	G			
3	25.531	9.0	L2	X	0.5						3.5	8.0	12.0	ABC	8.0	---	---	---	---	G			
4	25.531	9.5	L1	X	0.8						3.0	8.2	12.0	ABC	8.2	---	---	---	---	G			
5	25.531	3.0	LLTL	X	0.4						3.6	6.4	10.4	ABC	6.4	---	---	---	---	G			
6	25.535	6.0	R1			0.5					3.5	7.1	11.1	ABC	7.1	---	---	---	---	F			Core Broken at Lab
7	25.528	9.0	R2	X		1.0					2.8	8.2	12.0	ABC	8.2	---	---	---	---	F			
8	25.533	1.5	OR			0.9					1.8	4.7	7.4	ABC	4.7	0.9	S	II	M	F			
9	25.602	8.0	RRTL	X					1.5	1.7			3.2	LR	13.0	---	---	---	---	F			
10	25.677	1.5	RLTL	X		0.5					3.0	6.5	10.0	ABC	6.5	---	---	---	---	G			
11	26.066	8.0	RRTL						2.0				2.0	LR	11.0	---	---	---	---	G			
12	26.003	2.0	OL			0.3					2.5		2.8	LR	6.5	---	---	---	---	F			
13	26.002	9.5	L2	X		0.3					3.8		4.1	LR	10.5	B	Br	II	M	F			
14	26.002	5.0	L1			0.7					3.2		3.9	LR	12.0	---	---	---	---	F			
15	25.979	3.5	R1	X		0.6					3.4		4.0	LR	12.0	B	Br	II	M	F			
16	25.980	3.5	R2	X		1.0					3.2		4.2	LR	12.5	1.7	Br	II	M	F			

Remarks: Crack Depth of "B" indicates full depth crack to the base. EOP = Edge of Pavement
Crack Extent: L= Light; M= Moderate; S= Severe Pavement Condition: G= Good; F= Fair; P= Poor Crack Types: A= Alligator; B1= Block; Br= Branch
 SL= Single Longitudinal; ST= Single Transverse; R= Reflective; J= Joint; OGFC= Open-Graded FC Stress Crack
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**State of Florida Department of Transportation
PAVEMENT EVALUATION AND CONDITION DATA SHEET**

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County: Volusia				Highway Sect. No.:									From: Tymber Creek Road				To: Perrott Street						
Road No.: SR 40				Begin MP: 25.429									End MP: 30.170				Length: 4.741						
Core No.	MP	Distance from left edge of lane (ft)	Lane	Wheel Path	Pavement Layer (in.)								Base		Crack				Pavt Cond.	Rut Depth (in)	Cross Slope (%)	Comments	
					FC-5	FC-2	FC-3	FC-9.5	SP-12.5	Type S	ABC	Core Length (in)	Type	Thick-ness (in)	Depth (in)	Type	Class	Extent					
17	25.984	1.5	OR		0.8					2.2		3.0	LR	6.0	1.0	Br	I	L	F				
18	26.095	4.0	LLTL		1.0					3.6		4.6	LR	11.5	2.2	SL	I	L	F				
19	26.236	3.5	R3	X	0.5					4.7		5.2	LR	9.0	2.5	SL	I	L	F				
20	26.244	2.0	RLTL	X				3.5	3.0			6.5	LR	8.0	---	---	---	---	G				
21	26.346	3.0	LLTL 2	X			1.4	7.8	3.0			12.2	LR		---	---	---	---	G				
22	26.346	2.5	LLTL 1	X			1.4	8.0	2.0			11.4	LR		---	---	---	---	G				
23	26.383	8.5	L3	X			1.2	16.0				17.2	LR		---	---	---	---	G				
24	26.390	2.0	L2	X			1.2	10.8	2.9			14.9	LR		---	---	---	---	G				
25	26.390	4.0	L1	X			1.6	10.4	1.7			13.7	LR		---	---	---	---	G				
26	26.382	4.5	R1				1.9		2.4			4.3	LR		---	---	---	---	G				Core Separated at layer Break
27	26.384	10.0	R2	X			1.6		1.9			3.5	LR		---	---	---	---	G				
28	26.385	10.0	R3	X			1.4		2.4			3.8	LR		---	---	---	---	G				
29	26.562	4.0	LRTL			1.2			3.4			4.6	LR	12.5	1.2	Br	II	M	F				
30	26.581	9.0	LLTL 2	X		1.0			2.5			3.7	LR	10.0	1.0	Br	I	L	F				
31	26.581	8.0	LLTL 1			1.0			2.5	10.0		13.5	ABC	10.0	0.8	Br	I	L	F				
32	26.578	3.5	R3	X		0.9			3.1			4.0	LR	11.5	0.6	Br	I	L	F				

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County: Volusia		Highway Sect. No.:		From: Tymber Creek Road		To: Perrott Street																		
Road No.: SR 40		Begin MP: 25.429		End MP: 30.170		Length: 4.741																		
Core No.	MP	Distance from left edge of lane (ft)	Lane	Wheel Path	Pavement Layer (in.)								Base		Crack				Pavt Cond.	Rut Depth (in)	Cross Slope (%)	Comments		
					FC-5	FC-2	FC-3	FC-9.5	SP-12.5	Type S	ABC	Core Length (in)	Type	Thick-ness (in)	Depth (in)	Type	Class	Extent						
33	26.580	8.0	RRTL				1.5				2.6		4.1	LR	10.0	---	---	---	---	F				
34	26.629	4.0	L2	X			1.3				2.8		4.1	LR	10.0	1.3	Br	I	M	F				
35	26.646	8.5	L1	X			1.0				2.8		3.8	LR	10.0	1.8	Br	I	M	F				
36	26.642	2.5	RLTL	X			0.9				2.4		3.3	LR	11.5	0.3	Br	I	L	F				
37	26.642	3.0	R1	X			1.1				3.1		4.2	LR	10.5	0.2	Br	I	L	F				
38	26.986	7.5	RRTL								3.5	13.5	17.0	ABC	13.5	---	---	---	---	F				
39	27.153	4.0	L2	X			0.9				2.9		3.8	LR	10.0	0.2	Br	I	M	F				
40	27.155	2.0	L1	X			1.0				3.0		4.0	LR	11.0	0.7	Br	I	M	F				
41	27.422	2.0	RLTL	X			1.1				3.5		4.6	LR	9.5	---	---	---	---	F				
42	27.422	2.0	R1	X			0.9				3.8		4.8	LR		0.7	Br	I	L	F				
43	27.420	3.0	R2	X			1.2				3.8		4.0	LR						F				
44	27.421	4.0	RRTL								3.5	8.2	11.7	ABC	8.2		Br	I	L	F				
45	27.785	14.0	L2				1.3				2.4		3.7	LR	8.0	1.4	Br	II	M	F				
46	27.803	2.5	L1	X			0.9				2.7		3.6	LR	11.5	0.6	Br	II	M	F				
47	27.814	1.5	RLTL				1.1				3.9		5.0	LR	11.0	0.9	Br	II	M	F				
48	27.792	5.0	R1				1.0				3.3		4.3	LR	9.5	1.4	Br	I	L	F				

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County: Volusia		Highway Sect. No.:		From: Tymber Creek Road		To: Perrott Street																		
Road No.: SR 40		Begin MP: 25.429		End MP: 30.170		Length: 4.741																		
Core No.	MP	Distance from left edge of lane (ft)	Lane	Wheel Path	Pavement Layer (in.)								Base		Crack				Pavt Cond.	Rut Depth (in)	Cross Slope (%)	Comments		
					FC-5	FC-2	FC-3	FC-9.5	SP-12.5	Type S	ABC	Core Length (in)	Type	Thick-ness (in)	Depth (in)	Type	Class	Extent						
49	27.781	9.0	R2	X			1.2				2.9		4.1	LR	10.0	---	---	---	---	F				
50	27.927	2.0	LLTL 2	X			1.1				3.2		4.3	LR	12.0	1.3	Br	I	L	F				
51	27.927	8.5	LLTL 1	X			1.0				3.3		4.3	LR	10.0	0.6	Br	I	L	F				
52	27.940	6.5	LRTL				1.2				3.2		4.4	LR		---	---	---	---	F				
53	27.963	3.5	R1	X			0.9				3.4		4.3	LR		0.9	Br	I	L	F				
54	27.963	2.5	R2	X			1.0				3.6		4.6	LR		0.3	Br	I	L	F				
55	27.962	5.0	RRTL				1.4				2.8		4.2	LR	10.5	0.4	Br	I	L	F				
56	28.163	2.5	RLTL	X			1.1				2.9		4.0	LR	10.5	0.4	Br	I	L	F				
57	28.243	2.5	L2	X			0.9				3.4		4.3	LR						F				
58	28.253	9.0	L1	X			1.1				2.7		3.8	LR		---	---	---	---	F				
59	28.251	8.0	LLTL				1.3				3.2		4.5	LR	11.5	---	---	---	---	F				
60	28.681	3.5	L2	X			1.1				2.7		3.8	LR	8.5	B	Br	II	L	F				
61	28.665	3.5	L1	X			1.2				3.3		4.5	LR	11.5	1.2	Br	I	L	F				
62	28.704	7.5	R1				0.7				3.4		4.1	LR	14.0	---	---	---	---	F				
63	28.704	3.5	R2	X			1.0				3.2		4.2	LR	14.0	B	Br	I	L	F				
64	28.855	1.5	RLTL 1				1.0				4.0		5.0	LR	11.5	---	---	---	---	F				

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Road No.: SR 40	Begin MP: 25.429	End MP: 30.170	Length: 4.741

Core No.	MP	Distance from left edge of lane (ft)	Lane	Wheel Path	Pavement Layer (in.)								Base		Crack				Pavt Cond.	Rut Depth (in)	Cross Slope (%)	Comments
					FC-5	FC-2	FC-3	FC-9.5	SP-12.5	Type S	ABC	Core Length (in)	Type	Thick-ness (in)	Depth (in)	Type	Class	Extent				
65	28.855	2.0	RLTL 2	X			1.2			5.8		7.0	LR	7.0	---	---	---	---	F			
66	28.967	2.0	LLTL 2	X			1.2			3.9		5.1	LR	9.0	---	---	---	---	F			
67	28.968	2.0	LLTL 1	X			1.4			5.3		6.7	LR	9.5	---	---	---	---	F			
68	29.262	8.5	L2	X			1.0			1.5		2.5	LR		2.0	Br	I	L	F			
69	29.273	2.5	L1	X			0.8			1.7		2.5	LR		B	Br	I	L	F			
70	29.313	7.5	R1				0.9			1.9		2.8	LR		B	Br	I	L	F			
71	29.311	8.5	R2	X			1.0			2.2		3.2	LR		B	Br	I	L	F			
72	29.450	2.5	LLTL	X			1.4			1.6		3.0	LR		---	---	---	---	F			
73	29.656	4.0	RLTL				1.5			1.1		2.6	Conc.	7.3	B	Br	II	L	F			Concrete base was badly broken
74	29.826	7.0	L2				1.9			1.3		3.2	LR	9.5	---	---	---	---	F			
75	29.826	7.0	L1				1.8			1.0		2.8	LR	9.5	1.8	Br	II	L	F			
76	29.823	3.5	LLTL	X						2.6		3.2	LR	11.0	---	---	---	---	F			
77	29.822	8.5	R1	X			1.4			1.1		2.5	LR	10.0	0.6	Br	II	L	F			
78	29.824	7.0	R2				1.4			1.3		2.7	LR	11.0	1.4	Br	II	L	F			

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Supplemental Data to PECD

(GPS Coordinates for Each Locations Cored)

SR 40 FPN: 424904-1 County: Volusia

Core #	GPS Coordinates	
1	N 29.253646	W -81.128709
2	N 29.253630	W -81.128701
3	N 29.253598	W -81.128682
4	N 29.253560	W -81.128670
5	N 29.253527	W -81.128652
6	N 29.253387	W -81.128670
7	N 29.253357	W -81.128656
8	N 29.253345	W -81.128646
9	N 29.253619	W -81.127502
10	N 29.254040	W -81.126367
11	N 29.255642	W -81.120193
12	N 29.255505	W -81.121608
13	N 29.255483	W -81.121607
14	N 29.255448	W -81.121613
15	N 29.255316	W -81.121519
16	N 29.255288	W -81.121506
17	N 29.255265	W -81.121497
18	N 29.255830	W -81.120089
19	N 29.256444	W -81.117526
20	N 29.256578	W -81.117389

Core #	GPS Coordinates	
21	N 29.257008	W -81.116036
22	N 29.256974	W -81.116026
23	N 29.257347	W -81.115180
24	N 29.257312	W -81.115161
25	N 29.257283	W -81.115144
26	N 29.257138	W -81.115178
27	N 29.257102	W -81.115143
28	N 29.257083	W -81.115131
29	N 29.258146	W -81.112370
30	N 29.258076	W -81.112240
31	N 29.258058	W -81.112230
32	N 29.258131	W -81.112854
33	N 29.258105	W -81.111834
34	N 29.258630	W -81.111389
35	N 29.258601	W -81.111361
36	N 29.258619	W -81.111192
37	N 29.258590	W -81.111162
38	N 29.262356	W -81.107586
39	N 29.264396	W -81.105731
40	N 29.264230	W -81.105873

Supplemental Data to PECD

(GPS Coordinates for Each Locations Cored)

SR 40 FPN: 424904-1 County: Volusia

Core #	GPS Coordinates	
41	N 29.266896	W -81.102472
42	N 29.266884	W -81.102455
43	N 29.266776	W -81.102505
44	N 29.266773	W -81.102465
45	N 29.270780	W -81.098219
46	N 29.270748	W -81.098144
47	N 29.270902	W -81.097822
48	N 29.270648	W -81.098070
49	N 29.270461	W -81.098195
50	N 29.271981	W -81.096628
51	N 29.271962	W -81.096609
52	N 29.272371	W -81.096351
53	N 29.272380	W -81.096029
54	N 29.272354	W -81.096004
55	N 29.272338	W -81.095961
56	N 29.274507	W -81.093757
57	N 29.275547	W -81.092907
58	N 29.275467	W -81.092951
59	N 29.275430	W -81.092937
60	N 29.278504	W -81.086837

Core #	GPS Coordinates	
61	N 29.278408	W -81.087308
62	N 29.278345	W -81.086376
63	N 29.278312	W -81.086371
64	N 29.278634	W -81.083963
65	N 29.278597	W -81.083961
66	N 29.278781	W -81.082267
67	N 29.278750	W -81.082256
68	N 29.278952	W -81.077253
69	N 29.278898	W -81.077153
70	N 29.278703	W -81.076272
71	N 29.278675	W -81.076301
72	N 29.278683	W -81.074265
73	N 29.279734	W -81.070959
74	N 29.280921	W -81.068395
75	N 29.280886	W -81.068379
76	N 29.280859	W -81.068363
77	N 29.280805	W -81.068348
78	N 29.280768	W -81.068341