



Florida Department of  
**TRANSPORTATION**

## PAVEMENT SURVEY AND EVALUATION REPORT

FINANCIAL PROJECT NUMBER: 433605-1

**STATE ROAD 501 (Clearlake Road)**

From Michigan Avenue to Industry Road


Section #: 70011; MP 2.235 – 3.358

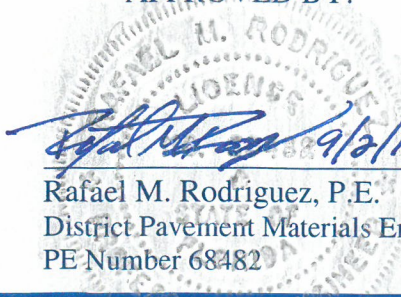
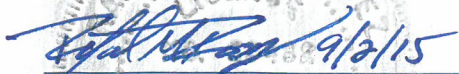
Brevard County

September 2, 2015

PREPARED BY:

APPROVED BY:

  
\_\_\_\_\_  
William A. Wall  
Pavement Assessment Coordinator

  
  
\_\_\_\_\_  
Rafael M. Rodriguez, P.E.  
District Pavement Materials Engineer  
PE Number 68482

## **EXECUTIVE SUMMARY**

FPN 433605-1; SR 501 (Clearlake Road)  
Section # 70011; MP 2.235 – 3.358

### **MILLING AND RECLAMATION RECOMMENDATIONS**

Construction for this project is currently in the Project Development & Environment (PD&E) phase and is being accelerated into design with a production date that is set for March 25, 2019. Currently, the pavement is in fair and serviceable condition with no need of significant rehabilitation or repair in the foreseeable future. The purpose of this report is to provide recommendations for developing reconstruction options for SR 501 from MP 2.235 (Michigan Avenue) to MP 3.358 (Intersection of SR 501 and SR 524/Industry Drive).

It is presumed that a reconstruction into a four lane divided roadway is envisioned. As such, a rehabilitation recommendation would not be necessary. However, salvage milling for the recovery of asphaltic materials for recycling or the reclamation for both the asphaltic and base materials on the project could be recommended.

Understanding that pavement conditions will continue to deteriorate over time, these reconstruction recommendations are based on existing pavement structure information, our current observations and our past experiences. As such, these recommendations should be considered preliminary. The following two options are presented:

#### **OPTION 1: SALVAGE MILLING OF THE EXISTING ASPHALT ROADWAY**

We recommend the following milling depths to recover the asphalt portion of the roadway without encountering the base materials under it.

##### **Northbound Travel Lanes**

Mileposts	Lane	Milling Depth	Mileposts	Lane	Milling Depth
2.235-3.053	R1	3.0	2.235-2.938	R2	3.0
3.053-3.358	R1	1.5	3.347-3.358	R2	1.5

##### **Southbound Travel Lanes**

Mileposts	Lane	Milling Depth	Mileposts	Lane	Milling Depth
2.235-2.866	L1	3.0	2.235-2.432	L2	3.0
2.866-3.053	L1	2.0	3.137-3.347	L2	3.0
3.053-3.347	L1	3.0	3.347-3.358	L2	1.5
3.347-3.358	L1	1.5			

##### **Turn Lanes and Paved Shoulders**

We recommend a milling depth of 2.0 inches to recover the asphalt portion of the roadway without encountering the base materials under it.

#### **OPTION 2: FULL DEPTH RECLAMATION (FDR) OF THE EXISTING ROADWAY**

If it is desired to reclaim the existing material within the project limits to minimize costs and recycle it to build a new roadway base, then the full depth reclamation (FDR) option is recommended. This process will minimize the amount of base material needed to be brought into the project to effect the widening of the roadway, saving time, maintenance of traffic and costs. The pulverized asphalt and base material can be stabilized into a new roadway base with either portland cement and/or bituminous material. This will form a strong base for the new layers of asphalt that are overlaid upon it.

# PAVEMENT SURVEY AND EVALUATION REPORT

## **STATE ROAD 501 (Clearlake Road) From Michigan Avenue to Industry Road**

### **INTRODUCTION**

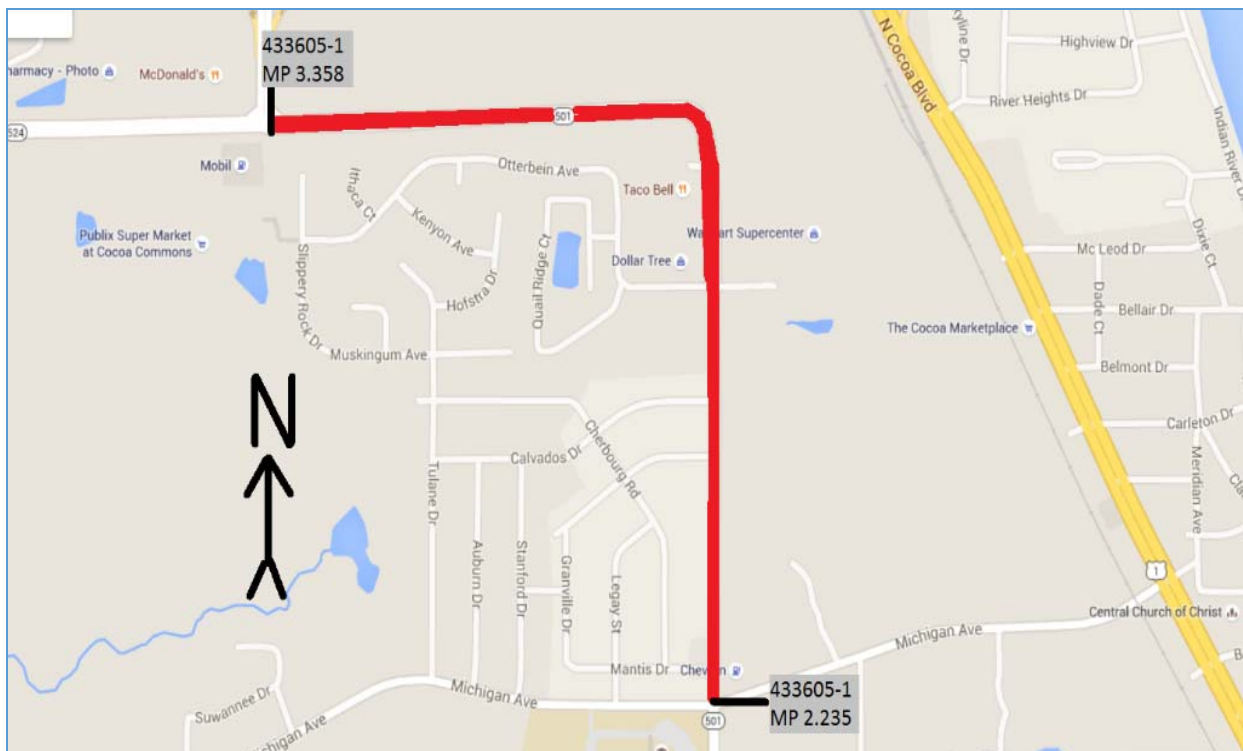
This report presents an analysis of information collected during the above-referenced Pavement Survey and Evaluation (PSE) report. The proposed widening of SR 501, also known as Clearlake Road, starts at the intersection of Michigan Avenue (MP 2.235) and proceeds northward and eastward to the intersection of Industry Road/SR 524 (MP 3.358). This project is located in the city limits of Cocoa in Brevard County.

An exhaustive check of our archival records and as-built plans search has shown no recent resurfacing activity by the Department within the last 20 years of SR 501 from MP 2.235 to MP 3.358. There have been two permit projects within the projects limits that did resurface, widened and add new lanes and outside paved shoulders to SR 501. These projects were:

**Walmart Store Number 174-03, RSC, C-192-SEGR-OR:** This permit project was to perform minimal milling and resurfacing of the existing roadway in areas with FC-9.5 along with limited pavement widening and lane reconstruction in select locations. There was also construction of outside paved shoulders. The project was from Michigan Avenue (MP 2.235) to Industry Road (MP 3.358). The work was performed in 2005 according to the 2015 Pavement Condition Survey and was done during the construction of a new Walmart shopping center at MP 2.671.

**Aldi Food Store Number 75:** This permit project was to construct an outside right turn lane into a new Aldi store from MP 2.603 to MP 2.643. There was also a concrete traffic divider and inside turn lane striping performed in this same location. This work was completed in 2008.

### **LOCATION MAP**



Note: Map is not to scale.

## CORING INFORMATION

Elipsis Engineering & Consulting, LLC performed pavement coring on this project. Due to the lack of information of previous resurfacing projects and our archives, an aggressive coring schedule was performed to obtain relevant information as to the base and asphalt compositions of the existing roadway. The signed and sealed pavement core sheets (dated July 22, 2015) are included in the Appendix. A total of 45 core samples (24 from mainline lanes, 14 from turn lanes and 7 from the outside paved shoulders) were collected from the subject roadway.

The core photo directory is included in the Appendix for further review. The following tables show the types of material, average material thickness, layer thickness ranges, and total average pavement thickness along with a min-max range for the different sections of the subject roadway.

- Of the 14 cores taken from the northbound mainline lanes, 2 (14%) were cracked full depth to the base.
- Of the 10 cores taken from the southbound mainline lanes, 3 (30%) were cracked full depth to the base.
- Of the 14 cores taken from the inside and outside turn lanes, 3 (21%) were cracked full depth to the base.
- Of the 7 cores taken from the outside paved shoulders, none were cracked.

<b><u>Mainline Lanes (L2, L1, R1 and R2)</u></b>		
<b><u>Center/Left Turn Lanes (CTL, LLTL, RRTL)</u></b>		
<b>MP 2.235 to MP 3.358 (Older Pavement and Newer Widening with a Limerock Base)</b>		
Type of Material (by layer)	Avg. Layer Thickness (in.)	Layer Thickness Range (in.)
FC-9.5	1.0	0.9 to 1.3
Type S/SP	2.5	1.0 to 3.9
Limerock Base	11.4	7.0 to 16.7
<b>Pavement Thickness:</b>	<b>3.5</b>	<b>2.0 to 4.9</b>

**Exceptions:**

1) From approximately MP 2.460 to MP 2.600, a portion of SR 501 was noted to have Sand Bituminous Roadway Mix (SBRM) as a base course. Refer to Cores #22, #23, #24, and #44 for details and these were not included in the statistical calculations for the above box.

2) Cores #16 (MP 2.880/L1) #32 (MP 2.880/LLTL) and #30 (MP 3.260/L1) were noted to have a very thick layer of Type S/SP in their compositions. They are considered to be outliers and are not included in statistical calculations.

**Notes:**

3) Cores #27 (MP 3.189/R1) and #28 (MP 3.320/R1) have FC-2 friction course instead of FC-9.5 as a friction course.

4) Cores #33 (MP 2.690/LLTL (IWP)), #34 (MP 2.690/LLTL (OWP)) #42 (MP 2.690/L1 (IWP)) have a layer of Type II below the Type S layer. These are not included in the statistical calculations for the above box.

<b><u>Right Turn Lanes (LRTL and RRTL)</u></b>		
<b>MP 2.235 to MP 3.358</b>		
Type of Material (by layer)	Avg. Layer Thickness (in.)	Layer Thickness Range (in.)
FC-9.5	1.3	0.9 to 2.0
Type S/SP	3.2	1.9 to 4.2
Limerock Base	10.5	7.7 to 12.9
<b>Pavement Thickness:</b>	<b>4.4</b>	<b>2.7 to 5.5</b>

**Notes:**

5) Cores #10 (MP 3.189/RRTL) and #29 (MP 3.320/RLTL) have FC-2 friction course instead of FC-9.5 as a friction course.

<b>Outside Paved Shoulders (OL and OR)</b>		
MP 2.235 to MP 3.358		
Type of Material (by layer)	Avg. Layer Thickness (in.)	Layer Thickness Range (in.)
FC-9.5	1.0	0.6 to 1.4
Type S/SP	3.2	2.3 to 4.4
Limerock Base	11.0	3.2 to 18.9
Pavement Thickness:	4.1	2.9 to 5.5

Notes:

6) Core #11 (MP 3.189/OR) has an FC-2 friction course instead of FC-9.5 friction course.

## **ROADWAY SURFACE CONDITION**

The discussion of the condition of the roadway for this project is broken up into groups for ease of discussion and localization of observed distresses. It has been approximately 10 years since the pavement was last resurfaced and it is currently in fair to good condition.

### **Northbound Roadway**

The northbound roadway was mostly resurfaced, widened, or reconstructed during the construction the Walmart shopping center within the project limits. It is in fair condition. The most significant distresses observed were some transverse pavement depressions across from curb inlet throats from MP 2.300 to MP 2.600. From MP 3.115 to MP 3.358, the northbound R1 lane has an older FC-2 open-graded friction course instead of a dense graded friction course. It is also in fair condition.

### **Southbound Roadway**

The roadway from Michigan Avenue (MP 2.235) to south of the main entrance to Walmart (MP 2.671) is in fair condition with moderate Class I/II block, branch, and longitudinal cracking reflecting from older asphalt layers and the base across the L1 travel lane. It should be noted that Sand Bituminous Roadway Mix (SBRM) exists between MP 2.460 to MP 2.600. This 20 to 22 foot wide SBRM base is from the original construction of the roadway and it is under part of the L1 travel lane and all of the center/left turn lane. See the Roadway Base Diagram in the Appendix for its approximate location within the project limits. The condition of the southbound lane improves from the Walmart Entrance (MP 2.671) to the end of the project at Industry Drive/SR 524 (MP 3.358).

### **Inside and Center Turn Lanes**

From Michigan Avenue (MP 2.235) to the entrance to Walmart (MP 2.671), the center of the roadway is a paved center turn lane striped out for designated turns onto sidestreets. There is some moderate branch and block cracking from the original SBRM roadway base reflecting to the surface of the pavement. From MP 2.590-2.605 and from MP 2.671 - MP 2.780, there is a concrete median separator for the inside turn lanes at those locations. A small area of grass median with curb and gutter is located from MP 2.795 to MP 2.825. From MP 2.825 to MP 2.930 there is a striped paved center turn lane. Inside turn lanes begin again at MP 3.215 leading to the post office at MP 3.230 and the intersection of SR 501 with Industry Drive at the end of the project at MP 3.358. All of these pavement features are in fair condition.

### **Outside Turn Lanes**

The outside turn lanes being of more recent construction than other features within the project limits are in fair to good condition, with few distresses of note.

### **Outside Shoulders**

The outside paved shoulders from MP 2.829 to MP 3.358 are in good condition with no distresses. The outside paved shoulders from MP 2.930 to about MP 3.100 on the mainline lanes is striped to represent a gore area for roadway lane merging from 4 lanes to two lanes.

### **Curb and Gutters**

The curb and gutters within the project limits are in fair condition. There is no asphalt debris or overlays in the gutters.

## RESILIENT MODULUS

The Project Designer will need to coordinate for some geotechnical work (soil sampling) for the determination of design Limerock Bearing Ratio (LBR) for this project.

## PAVEMENT CONDITION SURVEY

Currently, the 2015 Pavement Condition Survey (PCS) notes no deficiencies in cracking. However, the roadway has low ratings for ride and rut from MP 2.372 to MP 2.856. In this segment, the ride rating is a 6.3, while the rut rating is a 7.0. Graphs of the 2015 PCS ratings are in the Appendix for review.

RDWYID	BMP	EMP	RW	SYS	TYP	SPD	DISTRESS	SURVEYED YEAR																
SR	US	G	BMP	G	EMP	LN	%T	AADT	RATINGS	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002		
INTERSECT AT (MP SIDE)									SURFTYPE =====															
ITMSEG-P									W	BMP	W	EMP	RW	FY-P	W	W	W	W	W	W	W	W	W	W
CONTRACTOR (AGE ONE YEAR)									ASTYPE															
ITMSEG-F									W	BMP	W	EMP	RW	FY-F	W	W	W	W	W	W	W	W	W	W
									2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015			
70011000	2.372	2.856	C	1	1	40	CRACKING	9.4	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	8.0	8.0	8.0	8.5		
501			2	3.4	17400	RIDE	6.2*	5.8*	6.7	7.3	7.2	7.1	7.1	7.1	7.2	5.9*	6.0*	6.3*	5.8					
CLEAR LAKE PINES ( 2.5R)						FC125M	RUTTING	9.0	8.0	9.0	9.0	9.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0		
2375671	2.372	3.158	C	2006	0012	CRACKING	8.5	8.5		10.0	10.0	10.0	8.0	9.5	9.5	8.0	8.0	7.0				7.0		
APAC-SOUTHEAST, INC				(2010)		RIDE	5.6	5.4*		6.1	6.8	6.6	6.7	6.4	6.4	6.4	6.3	6.4				6.3		
						RUTTING	8.0	8.0		9.0	9.0	8.0	9.0	8.0	8.0	8.0	8.0	7.0				7.0		
70011000	2.856	3.358	C	1	1	45	CRACKING	9.4	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0		
501			2	3.4	17400	RIDE	7.4	7.1	7.1	8.6	9.0	8.7	8.3	9.0	9.0	8.6	8.7	8.4	8.1					
SIDE ROAD ( 3.1C)						FC125M	RUTTING	8.0	8.0	8.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0		
2375671	2.372	3.158	C	2006	0012	CRACKING	9.5	9.5		10.0	10.0	10.0	9.5	9.5	9.5	9.5	9.5	8.0				7.0		
APAC-SOUTHEAST, INC				(2006)		RIDE	8.2	7.7		7.5	7.8	7.4	7.7	7.3	6.7	7.4	7.3	7.3				7.1		
						RUTTING	10.0	10.0		10.0	10.0	9.0	9.0	10.0	9.0	9.0	9.0	10.0				9.0		

\*\*\* INDICATES PAVEMENT DEFICIENT (ANY RATING <=6); START 2006, RIDE RATING OF 6 NOT CONSIDERED DEFICIENT WHEN SPEED LIMIT < 50 MPH.  
 \*\*\* INDICATES PAVEMENT DEFICIENT (ANY RATING <=6); START 2002, RIDE RATING OF 6 NOT CONSIDERED DEFICIENT WHEN SPEED LIMIT < 45 MPH.

## MILLING AND RECLAMATION RECOMMENDATIONS

Construction for this project is currently in the Project Development & Environment (PD&E) phase and is being accelerated into design with a production date that is set for March 25, 2019. Currently, the pavement is in fair and serviceable condition with no need of significant rehabilitation or repair in the foreseeable future. The purpose of this report is to provide recommendations for developing reconstruction options for SR 501 from MP 2.235 (Michigan Avenue) to MP 3.358 (Intersection of SR 501 and SR 524/Industry Drive).

It is presumed that a reconstruction into a four lane divided roadway is envisioned. As such, a rehabilitation recommendation would not be necessary. However, salvage milling for the recovery of asphaltic materials for recycling or the reclamation for both the asphaltic and base materials on the project could be recommended.

Understanding that pavement conditions will continue to deteriorate over time, these reconstruction recommendations are based on existing pavement structure information, our current observations and our past experiences. As such, these recommendations should be considered preliminary. The following two options are presented:

### OPTION 1: SALVAGE MILLING OF THE EXISTING ASPHALT ROADWAY

We recommend the following milling depths to recover the asphalt portion of the roadway without encountering the base materials under it.

#### Northbound Travel Lanes

Mileposts	Lane	Milling Depth	Mileposts	Lane	Milling Depth
2.235-3.053	R1	3.0	2.235-2.938	R2	3.0
3.053-3.358	R1	1.5	3.347-3.358	R2	1.5

**Southbound Travel Lanes**

Mileposts	Lane	Milling Depth	Mileposts	Lane	Milling Depth
2.235-2.866	L1	3.0	2.235-2.432	L2	3.0
2.866-3.053	L1	2.0	3.137-3.347	L2	3.0
3.053-3.347	L1	3.0	3.347-3.358	L2	1.5
3.347-3.358	L1	1.5			

**Turn Lanes and Paved Shoulders**

We recommend a milling depth of 2.0 inches to recover the asphalt portion of the roadway without encountering the base materials under it.

**OPTION 2: FULL DEPTH RECLAMATION (FDR) OF THE EXISTING ROADWAY**

If it is desired to reclaim the existing material within the project limits to minimize costs and recycle it to build a new roadway base, then the full depth reclamation (FDR) option is recommended. This process will minimize the amount of base material needed to be brought into the project to effect the widening of the roadway, saving time, maintenance of traffic and costs. The pulverized asphalt and base material can be stabilized into a new roadway base with either portland cement and/or bituminous material. This will form a strong base for the new layers of asphalt that are overlaid upon it.

# APPENDIX

- i) Notations for Identifying Lane Types
- ii) Pavement Evaluation & Condition Data (PECD) Sheets  
(dated July 22, 2015) coring by Elipsis Engineering & Consulting, LLC
- iii) Ground Penetrating Radar (GPR) Data from the State Materials Office
- iv) Roadway Base Diagram within the project limits
- v) Pavement Condition Survey Charts
- vi) Core Photo Directory
- vii) Typical Roadway Survey Photographs

## Notations for Identifying Lane Types

### **3-Lane Section with Center Turn Lanes (MP 2.235 to MP 2.856)**

L1	Southbound Passing Lane
CTL	Center Turn Lane
R1	Northbound Passing Lane
R2	Northbound Travel Lane

### **4-Lane Section with Center Turn Lanes (MP 2.856 to MP 3.358)**

OL	Southbound Outside Paved Shoulder
L2	Southbound Travel Lane
L1	Southbound Passing Lane
R1	Northbound Passing Lane
R2	Northbound Travel Lane
OR	Northbound Outside Paved Shoulder

### **Turn Lanes**

LLTL	Southbound Inside Left Turn Lane
LRTL	Southbound Outside Right Turn Lane
RLTL	Northbound Inside Left Turn Lane
RRTL	Northbound Outside Right Turn Lane



# ELIPSIS ENGINEERING & CONSULTING, LLC

July 22, 2015

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

Attention: Mr. Tim Keefe

Reference: Final Pavement Evaluation and Condition Data Report  
SR 501 from Michigan Ave. to Industry Rd.  
Brevard County, Florida  
FPN 433605-1  
Section No: 70 011  
Contract No.: C-9570  
EEC Project No.: 12009-8.14

Dear Mr. Keefe:

Per your request, Elipsis Engineering & Consulting (EEC) has obtained pavement core and other relative information for the above referenced project. Our scope of services was conducted in accordance with your request for proposal dated June 18, 2015.

The pavement core data is presented on the attached Pavement Evaluation and Condition Data (PECD) Sheets 1 through 3. We have also included supplemental data sheets for the requested GPS locations, Cross-slope data for each core location, and core photographs for each core obtained. We have additionally included the roadway condition photo at each core location.

To the best of our knowledge, the information presented in the attachments to this letter is accurate and represents the existing pavement conditions at the locations cored. The pavement cores have been retained in storage pending further instructions from FDOT regarding their disposal.

Please feel free to contact us with any concerns or requests for further information.

Sincerely,

**Elipsis Engineering & Consulting, LLC**  
Certificate of Authorization No. 28455

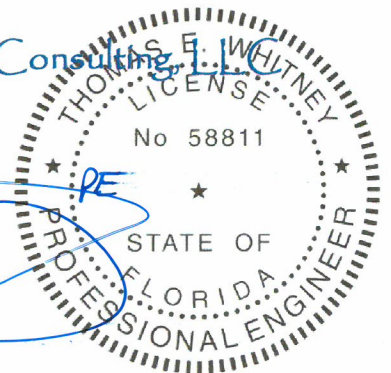
Thomas E. Whitney, PE

Principal Engineer

Signature Date: 7-22-15

**STATE OF FLORIDA**

Registered Professional Engineer No. 58811



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

Project No.:		433605-1		Cored By:		Elipsis Engineering and Consulting		Date:		July 7, 2015		Page No.:		1 of 3		
County:		Brevard		Highway Sect. No.:		70011		From:		Michigan Ave		To:		Industry Rd		
Road No.:		SR 501		Begin MP:		2.235		End MP:		3.358		Length:		1.123		
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-2	FC-9.5	Type/S/S/P	Type II	Surface Treat.						Core Length (in)	Type
1	2.340	9.0	R2	X		1.1	2.5		LR	9.4	-	-	F	0.5	2.4	
2	2.470	2.5	R2	X		1.4	3.3		LR	-	-	-	F	0.3	1.3	IWP
3	2.470	9.5	R2	X		2.0	3.6		LR	-	-	-	F	0.3	1.3	OWP
4	2.639	2.0	RRTL	X		1.6	3.5		LR	12.9	-	-	F	0.4	1.9	Entrance to Walmart Core fractured during extraction
5	2.690	2.5	R2	X		1.2	4.1		LR	-	-	-	F	0.3	1.4	IWP
6	2.690	9.5	R2	X		0.7	5.5		LR	11.8	-	-	F	0.2	1.9	OWP
7	2.800	8.5	RRTL	X		1.2	4.1		LR	11.7	-	-	F	0.1	2.6	Entrance to Walmart
8	2.919	2.5	R2	X		0.9	3.9		LR	16.7	-	-	F	0.3	3.0	Just Before R2 Starts to Merge Core fractured during extraction
9	2.919	2.0	OR			0.6	3.7		LR	3.2	-	-	F	0.0	8.7	
10	3.189	9.5	RRTL	X	0.7		2.6		LR	7.7	-	-	F	0.2	1.8	To Post Office/Older Pavement
11	3.189	2.0	OR		0.6		2.3		LR	6.9	-	-	F	0.0	2.7	To Post Office/Older Pavement
12	3.260	2.5	L2	X		1.1	3.7		LR	16.2	-	-	F	0.2	2.2	
13	3.260	1.5	OL			1.4	2.3		LR	18.9	-	-	F	0.0	5.8	
14	2.921	11.0	LRTL			0.9	3.6		LR	9.5	-	-	F	0.1	2.1	To Gas Station: Some Rippling
15	2.921	3.0	OL			1.0	2.4		LR	6.1	-	-	F	0.0	6.7	To Gas Station
16	2.880	2.5	L1	X		1.3	8.0		LR	3.2	-	-	F	0.3	4.4	RH Curve; Core fractured during extraction

**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; BI= Block; Br= Branch  
 SL= Single Longitudinal; ST= Single Transverse; R= Reflective; J= Joint; OGFC= Open-Graded FC Stress Crack  
 Base Types: LR= Limerock; COQ= Coquina; SC= Soil Cement; ABC= Asphalt Base; SAHM= Sand Asphalt Hot Mix; NB= No Base

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

<b>Project No.:</b> 433605-1		<b>Cored By:</b> Elipsis Engineering and Consulting		<b>Date:</b> July 7, 2015		<b>Page No.:</b> 2 of 3												
<b>County:</b> Brevard		<b>Highway Sect. No:</b> 70011		<b>From:</b> Michigan Ave		<b>To:</b> Industry Rd												
<b>Road No.:</b> SR 501		<b>Begin MP:</b> 2.235		<b>End MP:</b> 3.358		<b>Length:</b> 1.123												
Core No.	MP	Distance from left edge of lane (ft)	Lane	Wheel Path	Pavement Layer (in.)				Base	Core Length (in)	Surface Treat.	Crack			Rut Depth (in)	Pavt Cond.	Cross Slope (%)	Comments
					FC-2	FC-9.5	Type I/S/P	Type II				Thickness (in)	Depth (in)	Type				
17A	2.692	7.0	LRTL		1.0	3.5		LR	10.0	B	SL	II	S	F	0.2	2.4	To Otterbein Avenue; 17A = L1 Side	
17B	2.692	7.0	LRTL		1.3	4.2		LR	12.0	B	SL	II	S	F	0.2	2.5	To Otterbein Avenue; 17B = OL Side	
18	2.692	2.0	OL		1.1	4.4		LR	13.7	-	-	-	-	F	0.0	4.7	To Otterbein Avenue	
19	2.340	20.5	LRTL		2.0	1.9		LR	11.1	-	-	-	-	F	0.0	2.0	Older Pavement	
20	2.340	9.0	R1	X	0.8	2.2		LR	-	B	Br	I	M	F	0.2	2.4		
21	2.340	7.0	CTL		1.6	1.5		LR	-	-	-	-	-	F	0.0	-1.8	Crown Positive Slope to R2	
22	2.471	2.5	R1	X	0.9	5.4	2.3	0.7	SBRM	5.7	-	-	-	F	0.4	1.5	Negative Slope to L1	
23	2.560	3.0	LLTL	X	1.3		0.9	0.3	SBRM	7.5	B	ST	II	M	0.2	2.5	To Clear Lake Pines	
24	2.595	1.5	CTL		1.0		1.4	0.9	SBRM	6.2	-	-	-	F	0.0	-2.0		
25	2.691	2.0	R1	X	1.1	4.1		LR	15.8	-	-	-	-	F	0.4	2.4		
26	2.920	2.5	R1	X	1.0	3.0		LR	13.6	-	-	-	-	F	0.3	2.8		
27	3.189	3.0	R1	X	0.7	2.3		LR	7.0	B	ST	I	L	F	0.1	-0.7	Older Pavement	
28	3.320	3.0	R1	X	0.6	1.9		LR	8.5	-	-	-	-	F	0.3	1.3	Older Pavement	
29	3.320	8.0	RLTL	X	0.5	2.2		LR	9.3	-	-	-	-	P	0.1	-1.5	To Shopping Center	
30A	3.260	3.0	L1	X	0.9	2.6		LR	9.0	B	SL	I	M	F	0.2	2.9	30A = LLTL Side	
30B	3.260	3.0	L1	X	0.9	7.7		LR	3.9	B	SL	I	M	F	0.2	2.9	30B = L2 Side	

**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  
 Base Types: LR= Limerock; COQ= Coquina; SC= Soil Cement; ABC= Asphalt Base; SAHM= Sand Asphalt Hot Mix; NB= No Base

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

<b>Project No.:</b> 433605-1		<b>Cored By:</b> Elipsis Engineering and Consulting		<b>Date:</b> July 7, 2015		<b>Page No.:</b> 3 of 3													
<b>County:</b> Brevard		<b>Highway Sect. No.:</b> 70011		<b>From:</b> Michigan Ave		<b>To:</b> Industry Rd													
<b>Road No.:</b> SR 501		<b>Begin MP:</b> 2.235		<b>End MP:</b> 3.358		<b>Length:</b> 1.123													
Core No.	MP	Distance from left edge of lane (ft)	Lane	Wheel Path	Pavement Layer (in.)			Core Length (in)	Base	Crack				Rut Depth (in)	Pavt Cond.	Cross Slope (%)	Comments		
					FC-2	FC-2.5	Type SSP			Type II	Surface Treat.	Thickness (in)	Type					Class	Extent
31	3.260	9.0	LLTL	X		0.8	1.3			LR	9.8	-	-	-	F	0.1	2.7	To Post Office	
32	2.880	2.5	LLTL	X		1.3	8.2			LR	7.3	-	-	-	F	0.3	2.2	To Walmart: RH Curve	
33	2.690	2.0	LLTL	X		1.2	3.8	1.1		LR	-	-	-	-	F	0.3	2.4	IWP	
34	2.690	9.0	LLTL	X		1.1	3.8	1.0		LR	-	B	ST	M	F	0.0	2.4	OWP	
35	2.340	2.5	L1	X		1.5	2.1			LR	17.4	-	-	-	F	0.1	2.3	Older Pavement	
36	3.028	3.0	R1	X		1.0	1.0			LR	-	-	-	-	F	0.0	-1.0	Crown: Positive Slopes to OR Negative Slopes to LI; IWP	
37	3.028	10.5	R1			1.3	3.6			LR	11.1	-	-	-	F	0.1	-1.0	Crown: Positive Slopes to OR Negative Slopes to LI; OWP	
38	3.028	4.0	OR			0.8	3.4			LR	14.3	-	-	-	F	0.0	1.3	"Striped Out" Shoulder	
39	3.028	2.0	L1	X		0.9	1.5			LR	-	-	-	-	F	0.1	2.4	IWP	
40	3.028	9.5	L1	X		1.2	1.7			LR	9.1	-	-	-	F	0.2	2.4	OWP	
41	3.028	5.0	OL			0.9	3.9			LR	14.2	-	-	-	F	0.0	1.2	"Striped Out" Shoulder	
42	2.690	2.0	L1	X		1.3	3.6	0.9		LR	-	-	-	-	F	0.3	2.5	IWP	
43	2.690	10.0	L1	X		1.1	2.9			LR	12.0	-	-	-	F	0.3	2.2	OWP	
44	2.469	2.0	L1	X		0.7	1.6	0.9	0.3	SBRM	7.0	B	Br	I	S	P	0.3	3.2	IWP
45	2.469	8.5	L1	X		1.1	5.0			LR	9.9	B	Br	I	S	P	0.4	3.2	OWP

**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  
**Base Types:** LR= Limerock; COQ= Coquina; SC= Soil Cement; ABC= Asphalt Base; SAHM= Sand Asphalt Hot Mix; NB= No Base

# Supplemental Data to PECD

(GPS Coordinates for Each Locations Cored)

SR 501

FIN: 433605-1

County: Brevard

Core #	GPS Coordinates
1	28.389787 ° -80.754965 °
2	28.391684 ° -80.754994 °
3	28.391685 ° -80.754998 °
4	28.394153 ° -80.754969 °
5	28.394779 ° -80.755019 °
6	28.394779 ° -80.755019 °
7	28.396375 ° -80.755038 °
8	28.397143 ° -80.756358 °
9	28.397143 ° -80.756358 °
10	28.397008 ° -80.760783 °
11	28.397008 ° -80.760783 °
12	28.396841 ° -80.761993 °
13	28.396837 ° -80.761995 °
14	28.397042 ° -80.756398 °
15	28.397039 ° -80.756396 °
16	28.397079 ° -80.755737 °
17	28.394796 ° -80.755147 °
18	28.394796 ° -80.755148 °
19	28.389772 ° -80.755124 °
20	28.389774 ° -80.755029 °

Core #	GPS Coordinates
21	28.389774 ° -80.755029 °
22	28.391665 ° -80.755043 °
23	28.392982 ° -80.755064 °
24	28.393483 ° -80.755047 °
25	28.394763 ° -80.755027 °
26	28.397115 ° -80.75636 °
27	28.397004 ° -80.760762 °
28	28.396943 ° -80.762949 °
29	28.396943 ° -80.762949 °
30	28.396891 ° -80.762018 °
31	28.39689 ° -80.76202 °
32	28.397102 ° -80.75576 °
33	28.394798 ° -80.755098 °
34	28.394798 ° -80.755098 °
35	28.389769 ° -80.755057 °
36	28.397096 ° -80.758144 °
37	28.397092 ° -80.758146 °
38	28.397092 ° -80.758146 °
39	28.397024 ° -80.758149 °
40	28.397024 ° -80.758149 °



## Supplemental Data to PECD

(Cross-Slope Data for Each Locations Cored)

SR 501

FIN: 433605-1

County: Brevard

Core #	MP	Lane	0 to 6 feet	6 to 12 feet
1	2.340	R2	2.2	2.5
2	2.470	R2	1.0	1.6
3	2.470	R2	1.0	1.6
4	2.639	RRTL	1.7	2.1
5	2.690	R2	1.4	2.3
6	2.690	R2	1.4	2.3
7	2.800	RRTL	2.7	2.4
8	2.919	R2	2.8	3.2
9	2.919	OR	8.7	
10	3.189	RRTL	1.9	1.7
11	3.189	OR	2.7	
12	3.260	L2	1.9	2.5
13	3.260	OL	5.8	
14	2.921	LRTL	1.2	2.9
15	2.921	OL	6.7	
16	2.880	L1	4.0	4.8
17A	2.692	LRTL	2.4	2.6
17B	2.692	LRTL	2.4	2.6
18	2.692	OL	4.7	
19	2.340	LRTL	2.2	1.8

Core #	MP	Lane	0 to 6 feet	6 to 12 feet
20	2.340	R1	2.5	2.3
21	2.340	CTL	-1.8	1.5
22	2.471	R1	0.5	1.3
23	2.560	LLTL	2.9	2.1
24	2.595	CTL	-2.0	
25	2.691	R1	1.9	2.8
26	2.920	R1	2.6	2.9
27	3.189	R1	-0.7	-0.6
28	3.320	R1	1.4	1.1
29	3.320	RLTL	-1.8	-1.1
30A	3.260	L1	3.3	2.4
30B	3.260	L1	3.3	2.4
31	3.260	LLTL	2.6	2.7
32	2.880	LLTL	2.1	2.3
33	2.690	LLTL	2.5	2.2
34	2.690	LLTL	2.5	2.2
35	2.340	L1	2.3	2.3
36	3.028	R1	-1.0	0.8
37	3.028	R1	-1.0	0.8
38	3.028	OR	1.3	



GPR Information for FPN 433605-1, SR 501

L2 HMA Thickness (in.)	L1 HMA Thickness (in.)	Milepost	R1 HMA Thickness (in.)	R2 HMA Thickness (in.)
3.6	3.3	2.235	4.3	4.5
3.7	3.9	2.237	4.0	4.7
3.8	4.0	2.239	4.0	4.1
4.2	3.5	2.241	3.5	3.6
3.5	3.5	2.243	3.5	4.1
3.2	3.8	2.244	4.5	3.6
3.3	3.5	2.246	4.3	3.8
3.8	3.4	2.248	3.7	4.3
3.9	3.4	2.250	3.5	4.4
4.0	3.7	2.252	4.0	4.2
4.1	3.8	2.254	3.4	4.7
4.1	3.7	2.256	3.2	4.4
3.9	3.6	2.258	3.8	3.5
4.1	3.5	2.260	3.7	3.6
3.2	3.0	2.262	3.2	4.1
3.5	3.3	2.263	3.3	3.8
3.3	3.2	2.265	3.2	3.7
3.6	3.2	2.267	3.7	3.7
3.6	3.6	2.269	3.6	3.7
3.5	3.4	2.271	3.6	3.4
3.8	3.5	2.273	3.3	3.4
4.4	3.8	2.275	3.6	3.3
4.2	4.1	2.277	3.5	4.1
4.6	3.9	2.279	3.8	5.4
4.8	3.5	2.280	3.8	4.5
4.6	3.6	2.282	3.9	3.4
4.4	3.9	2.284	4.0	3.6
4.6	3.9	2.286	3.8	3.4
4.8	3.6	2.288	3.4	3.5
4.2	3.6	2.290	3.3	3.8
4.1	3.6	2.292	3.5	3.5
4.2	3.6	2.294	4.0	3.8
4.2	3.9	2.296	3.7	3.6
4.3	3.8	2.298	3.4	3.4
4.4	3.6	2.299	4.2	4.0
4.3	3.8	2.301	4.2	4.5
4.0	3.5	2.303	3.6	3.7
4.1	3.5	2.305	4.0	3.9
3.8	3.5	2.307	4.0	3.9
4.1	3.3	2.309	4.0	3.6
4.2	3.4	2.311	4.0	3.6

GPR Information for FPN 433605-1, SR 501

L2 HMA Thickness (in.)	L1 HMA Thickness (in.)	Milepost	R1 HMA Thickness (in.)	R2 HMA Thickness (in.)
3.8	3.6	2.313	4.3	3.3
4.6	3.1	2.315	3.9	3.4
4.0	2.9	2.316	3.9	3.9
4.2	3.1	2.318	4.3	4.4
3.9	3.2	2.320	5.2	4.9
3.9	3.3	2.322	4.1	5.5
3.8	3.4	2.324	4.2	5.7
3.8	3.3	2.326	4.6	3.9
4.1	3.3	2.328	4.5	4.0
3.8	3.0	2.330	4.3	4.0
3.9	3.3	2.332	4.6	3.6
3.9	3.9	2.333	4.1	3.6
4.0	4.1	2.335	4.3	3.7
4.2	4.1	2.337	4.1	3.8
3.9	4.0	2.339	3.9	3.0
4.5	4.2	2.341	3.5	3.8
4.5	4.2	2.343	3.3	4.0
4.6	4.3	2.345	3.3	3.7
4.5	4.1	2.347	3.5	3.8
4.5	3.2	2.349	3.5	3.6
3.9	3.3	2.351	3.5	3.8
4.2	3.3	2.352	3.2	3.6
3.9	3.3	2.354	2.9	3.7
3.6	3.3	2.356	3.4	
3.6	3.5	2.358	4.1	5.6
3.6	3.5	2.360	4.4	7.1
4.0	3.5	2.362	4.4	10.9
4.1	3.8	2.364	4.2	14.0
4.1	3.7	2.366		13.6
4.1	3.6	2.368	4.7	15.7
3.5	3.6	2.369	3.9	15.6
3.6	3.5	2.371	4.0	14.2
3.7	3.7	2.373	4.2	14.5
3.6	3.4	2.375	4.5	11.5
3.8	3.4	2.377	4.7	11.4
3.3	3.2	2.379	5.3	12.1
3.7	3.6	2.381	5.1	11.6
3.2	3.6	2.383	4.6	10.7
3.4	4.0	2.385	4.2	9.5
3.7	3.9	2.387	4.3	8.3
4.2	3.8	2.388	3.5	7.7

GPR Information for FPN 433605-1, SR 501

L2 HMA Thickness (in.)	L1 HMA Thickness (in.)	Milepost	R1 HMA Thickness (in.)	R2 HMA Thickness (in.)
4.3	4.2	2.390	4.1	7.5
4.0	4.2	2.392	3.0	5.4
3.7	4.3	2.394	2.4	4.5
3.6	4.1	2.396	2.6	4.9
3.7	4.3	2.398	3.0	4.6
3.8	4.9	2.400	3.5	4.5
4.8	4.4	2.402	4.3	4.7
4.5	4.1	2.404	4.5	4.4
4.4	3.9	2.405	4.8	4.7
4.4	3.0	2.407	5.2	4.5
4.8	3.5	2.409	4.4	5.0
4.7	3.0	2.411	4.6	5.0
3.7	1.4	2.413	4.8	4.8
2.1	2.0	2.415	4.8	4.2
1.6	3.2	2.417	3.6	4.2
3.2	3.6	2.419	4.0	4.8
3.2	4.3	2.421	4.1	5.1
3.8	4.3	2.423	4.5	5.4
4.0	4.5	2.424	5.0	4.8
4.2	4.6	2.426	5.0	4.8
4.6	4.7	2.428	5.1	4.5
4.3	4.6	2.430	5.4	4.7
4.9	4.7	2.432	5.9	4.8
	4.7	2.434	5.7	4.6
	4.9	2.436	6.0	4.6
	5.5	2.438	6.6	4.7
	5.3	2.440	6.7	4.9
	5.3	2.441	6.8	5.1
	5.6	2.443	6.5	4.8
	5.0	2.445	6.3	4.9
	5.8	2.447	6.6	5.0
	5.1	2.449	6.2	4.8
	5.2	2.451	6.0	4.6
	4.6	2.453	5.8	4.2
	4.4	2.455	5.9	4.6
	4.5	2.457	5.6	5.2
	4.5	2.458	4.9	5.0
	4.2	2.460	5.5	4.9
	4.3	2.462	5.4	5.0
	4.5	2.464	5.2	4.7
	4.8	2.466	5.4	4.8

GPR Information for FPN 433605-1, SR 501

L2 HMA Thickness (in.)	L1 HMA Thickness (in.)	Milepost	R1 HMA Thickness (in.)	R2 HMA Thickness (in.)
	4.7	2.468	5.6	4.9
	5.0	2.470	5.6	4.7
	4.4	2.472	6.1	4.7
	4.0	2.474	6.5	5.1
	3.5	2.476	6.2	5.3
	3.4	2.477	6.5	5.1
	3.8	2.479	6.3	5.0
	3.6	2.481	7.0	4.9
	2.5	2.483	6.8	5.1
	2.3	2.485	7.1	4.6
	2.4	2.487	6.6	4.9
	2.6	2.489	5.6	4.9
	2.5	2.491	6.0	5.0
	2.9	2.493	6.0	5.4
	3.6	2.494	5.7	5.0
	5.0	2.496	5.6	4.9
	5.6	2.498	5.7	5.0
	5.3	2.500	5.2	4.9
	4.2	2.502	5.8	5.1
	4.3	2.504	5.5	5.5
	4.4	2.506	5.4	5.1
	4.5	2.508	5.4	5.0
	3.7	2.510	5.5	4.9
	4.1	2.512	5.3	5.0
	4.4	2.513	5.5	5.1
	3.8	2.515	5.7	5.0
	3.6	2.517	6.0	4.6
	3.6	2.519	5.0	5.0
	3.8	2.521	5.2	4.9
	4.1	2.523	5.0	5.1
	4.4	2.525	5.0	5.1
	4.6	2.527	5.0	5.0
	4.2	2.529	5.2	5.0
	4.2	2.530	5.3	4.4
	3.5	2.532	5.0	4.5
	2.6	2.534	4.8	4.4
	2.3	2.536	4.7	4.6
	2.9	2.538	4.6	4.5
	2.9	2.540	4.5	4.7
	3.5	2.542	4.4	4.8
	3.6	2.544	4.6	5.0

GPR Information for FPN 433605-1, SR 501

L2 HMA Thickness (in.)	L1 HMA Thickness (in.)	Milepost	R1 HMA Thickness (in.)	R2 HMA Thickness (in.)
	3.5	2.546	4.9	5.2
	3.7	2.548	4.8	5.0
	3.5	2.549	5.2	5.2
	4.4	2.551	5.4	5.2
	4.2	2.553	5.5	4.9
	4.8	2.555	5.0	4.8
	4.0	2.557	4.8	5.0
	3.2	2.559	4.8	5.0
	3.6	2.561	4.9	4.7
	2.9	2.563	4.3	4.8
	2.5	2.565	4.5	5.0
	2.7	2.566	4.0	4.8
	2.7	2.568	4.2	4.8
	2.4	2.570	4.2	4.9
	2.4	2.572	4.2	4.8
	2.5	2.574	4.5	4.8
	3.5	2.576	4.6	5.2
	4.1	2.578	4.6	5.0
	4.5	2.580	4.8	5.0
	4.6	2.582	4.8	5.0
	4.8	2.583	4.8	5.1
	3.1	2.585	4.9	4.8
	2.9	2.587	4.6	4.9
	2.6	2.589	4.8	5.7
	2.1	2.591	4.8	5.3
	2.2	2.593	4.7	5.0
	1.9	2.595	4.6	5.0
	2.2	2.597	4.3	4.9
	2.1	2.599	4.4	5.2
	2.1	2.601	4.1	5.0
	2.3	2.602	4.1	4.9
	2.5	2.604	4.1	4.7
	4.0	2.606	4.5	4.6
	4.7	2.608	4.7	4.5
	5.3	2.610	4.9	4.9
	4.5	2.612	4.7	4.9
	4.3	2.614	4.5	4.8
		2.616	3.7	4.2
	9.4	2.618	4.3	4.5
	10.6	2.619	4.4	4.8
	9.9	2.621	4.3	4.7

GPR Information for FPN 433605-1, SR 501

L2 HMA Thickness (in.)	L1 HMA Thickness (in.)	Milepost	R1 HMA Thickness (in.)	R2 HMA Thickness (in.)
	8.6	2.623	4.6	5.0
	7.5	2.625	4.8	5.1
	6.6	2.627	3.7	4.8
	6.8	2.629	3.8	5.0
	7.7	2.631	4.1	4.9
	7.3	2.633	4.1	4.8
	7.1	2.635	4.0	5.1
	5.9	2.637	4.0	4.6
	4.8	2.638	4.1	4.9
	4.6	2.640	3.7	4.6
	4.4	2.642	4.0	4.5
	5.1	2.644	4.0	4.5
	4.4	2.646	4.4	4.9
	4.6	2.648	4.3	4.9
	4.4	2.650	4.4	4.9
	5.0	2.652	3.9	4.9
	4.9	2.654	4.0	4.2
	4.8	2.655	4.4	4.4
	4.9	2.657	4.6	4.6
	4.1	2.659	4.5	4.5
	3.9	2.661	4.1	4.7
	3.7	2.663	4.2	4.7
	3.5	2.665	4.1	4.8
	3.7	2.667	4.2	4.9
	3.3	2.669	4.2	5.0
	3.4	2.671	3.9	4.4
	3.5	2.673	3.8	4.6
	3.9	2.674	3.7	4.7
	4.1	2.676	4.0	4.5
	4.0	2.678	4.2	4.8
	4.1	2.680	4.6	5.0
	4.4	2.682	4.7	5.1
	4.4	2.684	4.8	5.2
	4.5	2.686	4.6	5.0
	4.3	2.688	4.7	4.9
	4.5	2.690	4.9	5.0
	4.4	2.691	5.0	5.5
	4.2	2.693	5.0	5.9
	4.2	2.695	5.0	5.9
	4.2	2.697	4.9	4.6
	3.8	2.699	5.0	4.4

GPR Information for FPN 433605-1, SR 501

L2 HMA Thickness (in.)	L1 HMA Thickness (in.)	Milepost	R1 HMA Thickness (in.)	R2 HMA Thickness (in.)
	3.8	2.701	4.9	4.8
	3.3	2.703	4.6	4.7
	3.9	2.705	4.7	4.9
	3.5	2.707	4.6	4.6
	4.3	2.708	4.6	4.4
	4.4	2.710	4.6	4.5
	4.6	2.712	4.7	4.9
	5.4	2.714	4.9	5.1
	5.3	2.716	4.9	4.8
	5.2	2.718	4.7	5.1
	5.1	2.720	4.8	5.4
	5.2	2.722	4.5	4.6
	4.7	2.724	4.7	4.5
	4.6	2.726	5.1	4.6
	4.1	2.727	4.7	4.8
	3.7	2.729	4.7	4.9
	4.6	2.731		4.9
	6.2	2.733	4.6	4.9
	6.5	2.735	4.6	5.1
	5.8	2.737	4.3	4.9
	5.1	2.739	4.6	5.4
	4.6	2.741	4.5	4.9
	4.8	2.743	4.3	5.1
	4.8	2.744	4.3	5.2
	4.5	2.746	4.6	5.4
	4.5	2.748	4.8	5.3
	4.3	2.750	4.6	5.5
	4.2	2.752	4.8	4.9
	4.4	2.754	4.8	5.3
	4.2	2.756	4.9	5.7
	4.6	2.758	4.9	5.3
	4.6	2.760	5.1	5.4
	4.4	2.762	4.9	5.6
	4.4	2.763	4.8	5.6
	4.2	2.765	5.1	4.8
	4.5	2.767	5.3	4.8
	4.7	2.769	5.1	5.0
	4.8	2.771	4.6	5.0
	4.6	2.773	4.4	5.4
	4.6	2.775	4.5	4.6
	4.3	2.777	4.7	5.1

GPR Information for FPN 433605-1, SR 501

L2 HMA Thickness (in.)	L1 HMA Thickness (in.)	Milepost	R1 HMA Thickness (in.)	R2 HMA Thickness (in.)
	4.1	2.779	4.5	4.9
	4.5	2.780	4.5	4.9
	4.6	2.782	4.5	4.4
	4.6	2.784	4.4	4.6
	4.2	2.786	4.9	4.7
	4.4	2.788	5.2	4.9
	4.5	2.790	5.1	5.2
	4.5	2.792	5.2	5.3
	7.1	2.794	5.0	5.5
	9.2	2.796	5.1	4.9
	9.6	2.798	4.8	4.6
	9.3	2.799	4.8	4.5
	10.0	2.801	4.8	4.9
	10.9	2.803	4.6	4.6
	11.3	2.805	4.1	4.6
	11.4	2.807	4.1	4.4
	11.1	2.809	4.6	4.2
	11.2	2.811	5.5	4.7
	11.1	2.813	4.4	4.5
	11.9	2.815	4.2	4.2
	12.6	2.816	3.9	3.6
	12.3	2.818	3.9	4.1
	10.3	2.820	4.3	3.9
	11.1	2.822	4.4	4.0
	10.7	2.824	4.4	3.9
	11.0	2.826	4.2	3.7
	8.8	2.828	4.2	4.1
	9.3	2.830	4.1	3.8
	8.9	2.832	3.9	3.7
	6.5	2.833	4.3	3.9
	7.1	2.835	4.4	3.7
	7.2	2.837	4.4	4.0
	8.1	2.839	4.2	4.0
	8.3	2.841	4.5	4.2
	8.0	2.843	4.6	4.5
	7.5	2.845	4.4	4.8
	7.3	2.847	4.6	4.7
	6.9	2.849	4.8	4.0
	6.6	2.851	4.6	4.1
	6.9	2.852	4.7	4.1
	6.7	2.854	4.7	4.1

GPR Information for FPN 433605-1, SR 501

L2 HMA Thickness (in.)	L1 HMA Thickness (in.)	Milepost	R1 HMA Thickness (in.)	R2 HMA Thickness (in.)
	6.9	2.856	4.6	4.5
	7.2	2.858	4.8	4.5
	7.1	2.860	4.8	4.4
	7.3	2.862	5.0	4.2
	6.2	2.864	4.8	3.9
	5.6	2.866	5.1	4.4
	3.9	2.868	5.1	4.5
	2.9	2.869	5.1	4.5
	2.8	2.871	4.8	4.7
	2.8	2.873	4.5	4.3
	2.7	2.875	4.3	4.5
	2.8	2.877	4.6	4.1
	3.8	2.879	4.7	4.0
	3.3	2.881	5.1	4.0
	2.8	2.883	5.0	4.3
	3.3	2.885	5.1	4.4
	3.2	2.887	5.0	4.4
	3.2	2.888	4.9	4.4
	3.2	2.890	4.9	4.8
	2.9	2.892	4.6	4.5
	3.0	2.894	4.8	4.3
	3.2	2.896	4.5	4.6
	3.2	2.898	4.5	4.3
	3.3	2.900	4.7	4.2
	3.1	2.902	4.8	4.0
	3.1	2.904	4.7	4.3
	3.3	2.905	4.5	4.1
	3.2	2.907	4.5	4.1
	2.8	2.909	4.4	4.0
	2.3	2.911	4.2	4.4
	2.3	2.913	4.2	4.5
	2.8	2.915	4.1	4.5
	2.4	2.917	4.3	4.1
	2.5	2.919	5.0	4.1
	2.8	2.921	4.9	4.2
	2.8	2.923	4.9	4.6
	2.5	2.924	4.6	5.4
	2.6	2.926	4.7	4.1
	2.6	2.928	4.8	4.5
	2.8	2.930	4.5	5.4
	2.6	2.932	4.4	4.6

GPR Information for FPN 433605-1, SR 501

L2 HMA Thickness (in.)	L1 HMA Thickness (in.)	Milepost	R1 HMA Thickness (in.)	R2 HMA Thickness (in.)
	2.8	2.934	4.6	4.8
	2.4	2.936	4.6	4.9
	2.7	2.938	4.5	4.7
	2.8	2.940	4.6	
	2.6	2.941	4.8	
	2.6	2.943	4.6	
	2.3	2.945	4.7	
	2.1	2.947	4.6	
	2.5	2.949	4.9	
	2.6	2.951	4.7	
	2.3	2.953	4.4	
	2.5	2.955	4.7	
	2.7	2.957	4.2	
	2.7	2.958	4.5	
	2.6	2.960	4.7	
	2.7	2.962	4.3	
	2.9	2.964	4.3	
	2.9	2.966	4.2	
	2.8	2.968	4.2	
	2.5	2.970	4.3	
	2.6	2.972	4.6	
	2.6	2.974	4.6	
	2.6	2.976	4.3	
	2.6	2.977	4.4	
	2.6	2.979	4.2	
	2.5	2.981	3.3	
	2.4	2.983	3.3	
	2.4	2.985	3.6	
	2.5	2.987	3.6	
	2.6	2.989	3.8	
	2.6	2.991	3.5	
	2.7	2.993	3.4	
	2.6	2.994	3.2	
	2.3	2.996	3.2	
	2.2	2.998	3.0	
	2.3	3.000	3.2	
	2.2	3.002	3.3	
	2.6	3.004	3.5	
	2.6	3.006	3.5	
	2.6	3.008	3.3	
	2.7	3.010	3.2	

GPR Information for FPN 433605-1, SR 501

L2 HMA Thickness (in.)	L1 HMA Thickness (in.)	Milepost	R1 HMA Thickness (in.)	R2 HMA Thickness (in.)
	2.8	3.012	3.3	
	2.9	3.013	3.4	
	2.5	3.015	3.3	
	2.7	3.017	3.4	
	2.6	3.019	3.4	
	2.4	3.021	3.4	
	2.5	3.023	3.3	
	2.6	3.025	3.3	
	2.5	3.027	3.3	
	2.5	3.029	3.0	
	2.4	3.030	3.1	
	2.4	3.032	3.2	
	2.4	3.034	3.5	
	2.7	3.036	3.7	
	2.8	3.038	4.0	
	2.7	3.040	3.8	
	2.6	3.042	3.7	
	2.6	3.044	3.5	
	2.9	3.046	3.5	
	2.8	3.048	3.4	
	2.9	3.049	3.2	
	2.7	3.051	2.8	
	2.7	3.053	3.0	
	3.5	3.055	2.9	
	3.7	3.057	3.0	
	3.2	3.059	2.8	
	3.3	3.061	3.0	
	3.2	3.063	1.9	
	3.2	3.065	1.7	
	3.3	3.066	2.0	
	3.2	3.068	2.1	
	3.3	3.070	2.1	
	3.3	3.072	2.3	
	3.6	3.074	2.4	
	3.9	3.076	2.2	
	3.7	3.078	2.1	
	3.8	3.080	2.2	
	3.8	3.082	2.4	
	3.8	3.083	2.8	
	3.9	3.085	2.6	
	3.8	3.087	2.5	

GPR Information for FPN 433605-1, SR 501

L2 HMA Thickness (in.)	L1 HMA Thickness (in.)	Milepost	R1 HMA Thickness (in.)	R2 HMA Thickness (in.)
	3.8	3.089	2.5	
	3.9	3.091	2.5	
	3.9	3.093	2.8	
	3.7	3.095	2.5	
	3.6	3.097	2.6	
	3.7	3.099	2.5	
	3.6	3.101	2.6	
	3.8	3.102	2.1	
	3.7	3.104	2.4	
	3.3	3.106	2.4	
	3.2	3.108	2.6	
	3.3	3.110	2.4	
	3.2	3.112	2.6	
	3.4	3.114	2.9	
	3.6	3.116	2.3	
	4.7	3.118	2.3	
	5.0	3.119	2.4	
	5.9	3.121	2.5	
	5.4	3.123	2.6	
	5.3	3.125	2.5	
	5.4	3.127	2.6	
	5.0	3.129	2.6	
	4.9	3.131	2.5	
	5.1	3.133	2.4	
	5.5	3.135	2.5	
	5.1	3.137	2.7	
4.8	4.9	3.138	2.7	
4.5	4.5	3.140	2.6	
4.2	4.8	3.142	2.7	
4.2	4.7	3.144	2.6	
4.5	4.7	3.146	2.7	
4.5	4.9	3.148	2.7	
4.7	4.9	3.150	2.7	
5.1	4.6	3.152	2.6	
4.7	4.3	3.154	2.5	
4.6	4.4	3.155	2.6	
4.6	4.4	3.157	2.4	
4.7	4.7	3.159	2.3	
4.7	4.8	3.161	2.2	
4.3	4.6	3.163	2.0	
3.9	4.3	3.165	2.3	

GPR Information for FPN 433605-1, SR 501

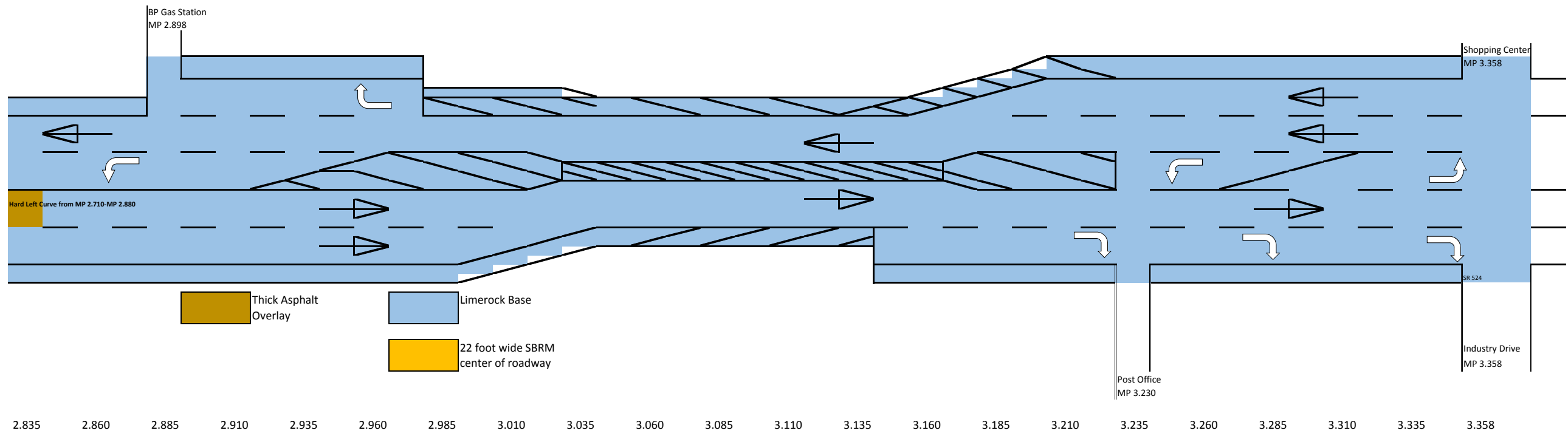
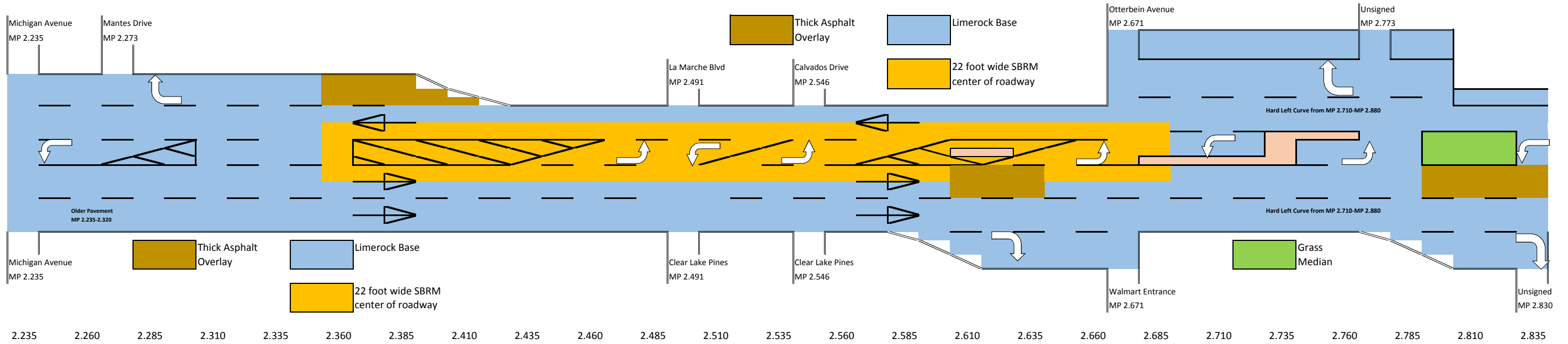
L2 HMA Thickness (in.)	L1 HMA Thickness (in.)	Milepost	R1 HMA Thickness (in.)	R2 HMA Thickness (in.)
4.2	4.2	3.167	2.5	
4.2	4.0	3.169	2.6	
4.5	3.8	3.171	2.7	
4.5	3.9	3.173	2.7	
4.7	3.8	3.174	2.6	
4.7	4.1	3.176	2.5	
	4.2	3.178	2.7	
4.6	4.1	3.180	2.7	
4.6	4.4	3.182	2.9	
4.3	4.2	3.184	3.0	
4.0	4.3	3.186	2.8	
4.4	4.2	3.188	2.7	
4.7	3.9	3.190	2.6	
4.5	4.1	3.191	2.4	
4.3	4.2	3.193	2.6	
4.6	4.6	3.195	2.7	
4.7	4.5	3.197	2.7	
4.6	4.4	3.199	2.8	
4.7	4.1	3.201	2.7	
4.3	4.1	3.203	2.7	
4.4	4.7	3.205	2.7	
4.5	4.6	3.207	2.3	
4.3	4.4	3.208	2.0	
4.2	4.3	3.210	2.3	
4.3	4.5	3.212	2.8	
4.4	4.5	3.214	2.7	
4.5	4.3	3.216	2.8	
4.6	3.9	3.218	2.9	
4.3	3.9	3.220	2.8	
4.2	4.1	3.222	2.8	
4.4	4.4	3.224	3.1	
4.3	4.6	3.226	3.0	
4.2	4.5	3.227	2.9	
4.2	4.6	3.229	3.2	
4.3	4.6	3.231	3.3	
4.2	4.3	3.233	3.4	
4.2	4.3	3.235	3.1	
4.6	4.5	3.237	2.8	
4.4	4.8	3.239	2.4	
4.4	4.6	3.241	2.3	
4.4	4.5	3.243	2.4	

GPR Information for FPN 433605-1, SR 501

L2 HMA Thickness (in.)	L1 HMA Thickness (in.)	Milepost	R1 HMA Thickness (in.)	R2 HMA Thickness (in.)
4.5	4.8	3.244	2.1	
4.3	4.0	3.246	2.8	
4.1	3.9	3.248	3.2	
4.3	4.2	3.250	3.1	
4.2	4.4	3.252	3.0	
4.2	4.4	3.254	2.9	
4.2	4.4	3.256	2.7	
4.3	4.3	3.258	2.5	
4.2	4.4	3.260	2.2	
4.2	4.2	3.262	1.7	
4.2	3.9	3.263	2.2	
4.0	4.2	3.265	2.4	
4.0	4.1	3.267	2.0	
4.2	3.5	3.269	2.3	
4.1	3.6	3.271	2.2	
4.1	3.4	3.273	2.9	
4.1	4.0	3.275	2.8	
4.1	4.2	3.277	2.9	
4.5	4.4	3.279	2.9	
4.5	4.0	3.280	3.0	
4.3	4.2	3.282	3.0	
4.2	4.8	3.284	2.8	
4.3	4.8	3.286	2.7	
4.3	4.7	3.288	2.7	
4.2	4.7	3.290	2.7	
4.3	4.5	3.292	2.7	
4.5	4.9	3.294	2.8	
4.4	4.4	3.296	2.9	
4.3	4.9	3.298	2.7	
4.1	5.4	3.299	2.9	
4.3	4.4	3.301	2.8	
4.3	4.6	3.303	2.8	
4.3	4.8	3.305	2.7	
4.7	4.7	3.307	2.4	
4.8	4.3	3.309	2.5	
4.5	4.3	3.311	2.4	
4.3	4.3	3.313	2.7	
4.5	4.2	3.315	2.9	
4.4	4.0	3.316	3.1	
4.0	4.5	3.318	3.2	
3.7	4.0	3.320	3.2	

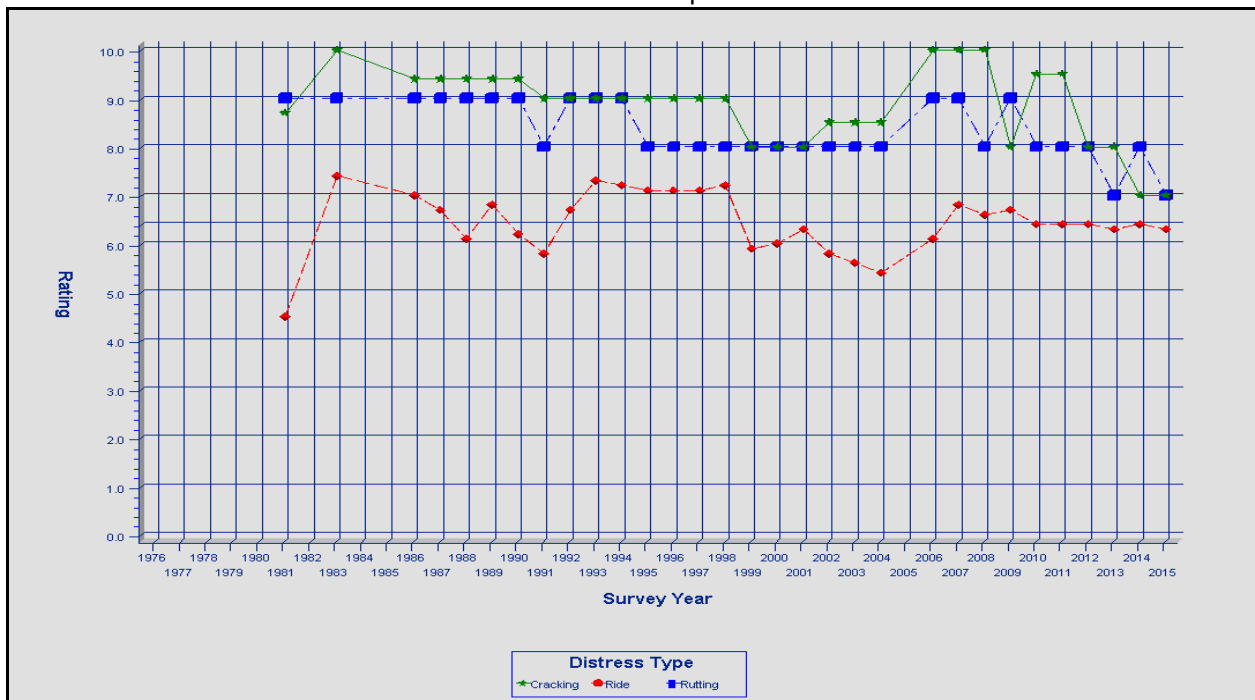
GPR Information for FPN 433605-1, SR 501

L2 HMA Thickness (in.)	L1 HMA Thickness (in.)	Milepost	R1 HMA Thickness (in.)	R2 HMA Thickness (in.)
3.7	3.8	3.322	3.0	
4.9	4.1	3.324	2.7	
4.9	4.0	3.326	2.7	
3.6	4.3	3.328	2.7	
4.8	3.7	3.330	2.7	
4.7	3.5	3.332	2.9	
5.2	3.4	3.333	3.0	
5.6	3.6	3.335	3.0	
6.3	3.7	3.337	3.0	
5.6	3.2	3.339	2.9	
5.6	4.0	3.341	2.7	
5.2	3.5	3.343	3.1	
4.6	3.2	3.345	2.8	
4.4	2.1	3.347	2.5	
	1.9	3.349	2.1	
	1.9	3.351	1.9	
	2.1	3.352	2.0	
	1.8	3.354	2.0	
	1.8	3.356	1.9	
	1.9	3.358	2.1	

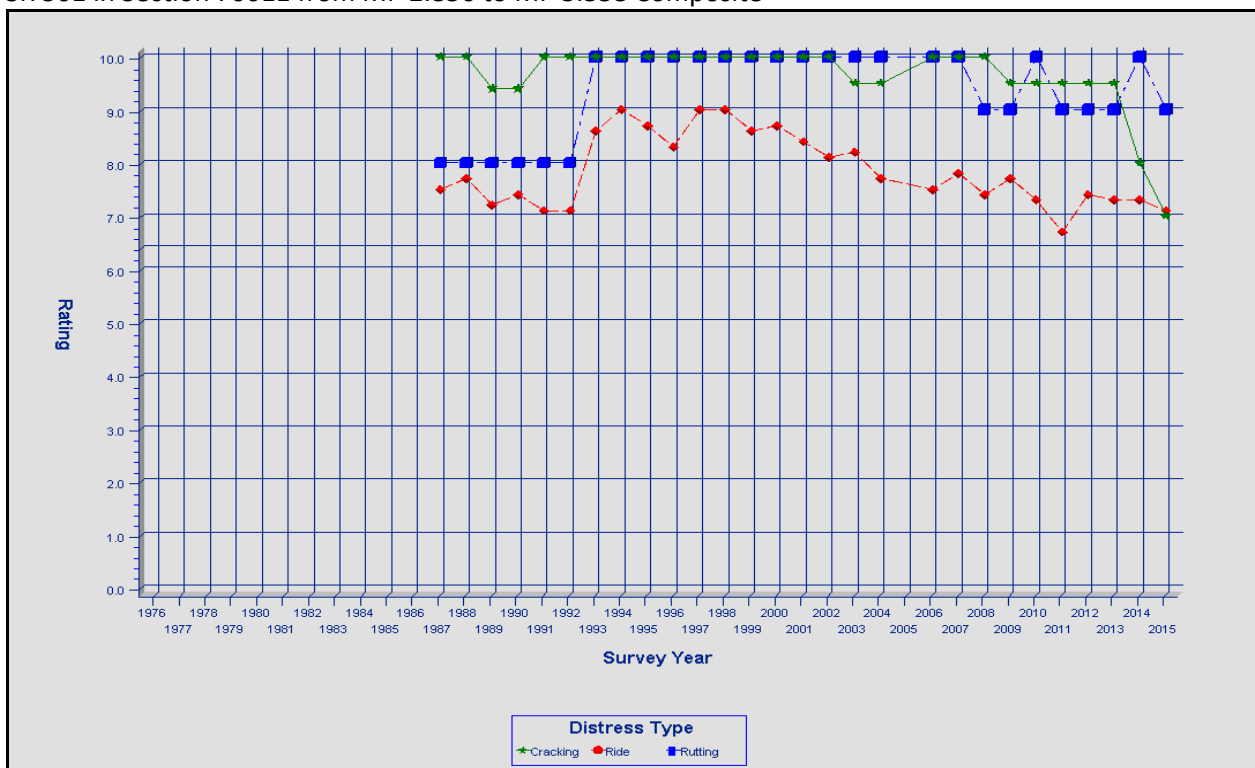


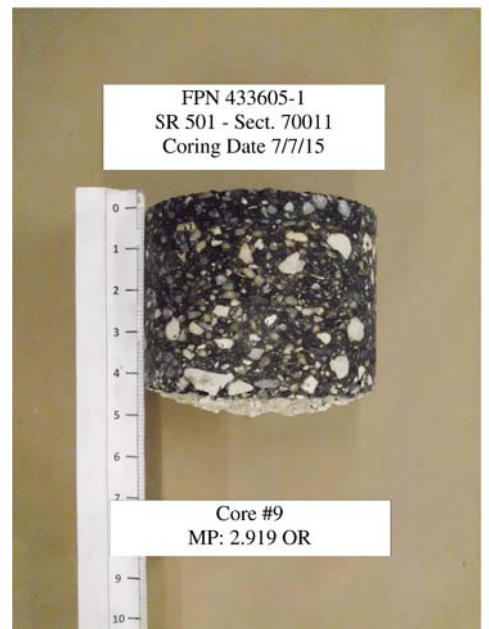
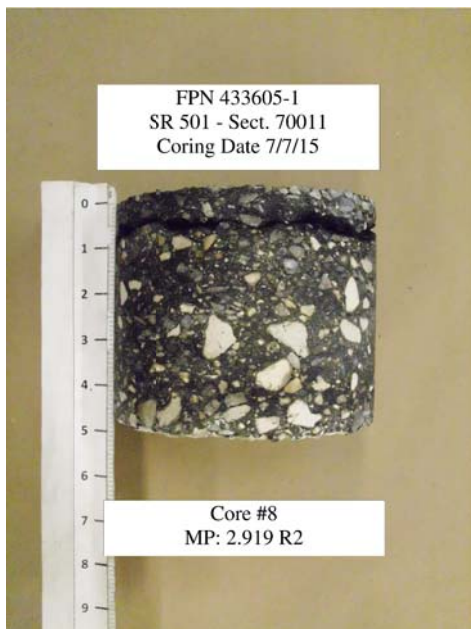
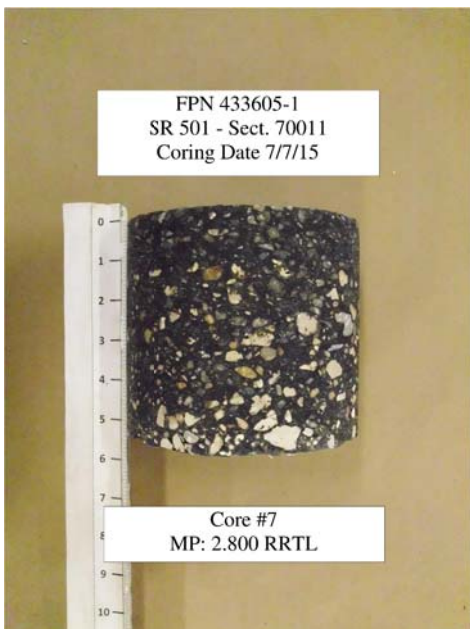
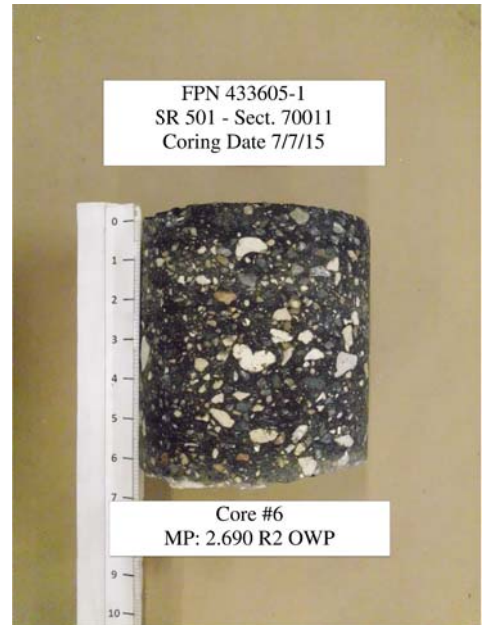
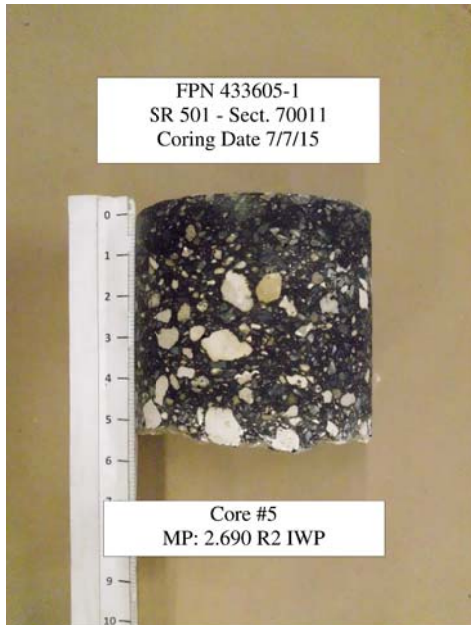
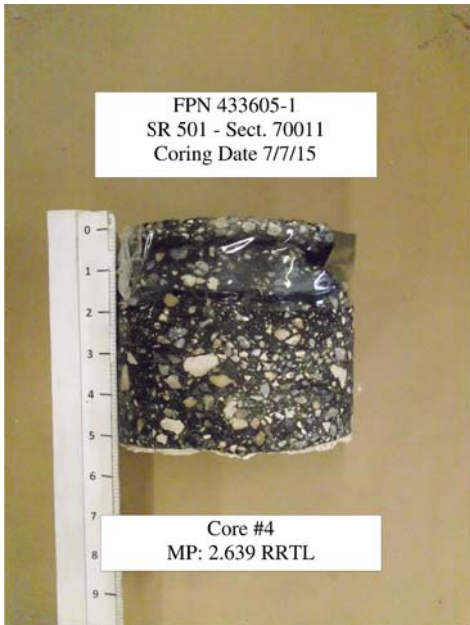
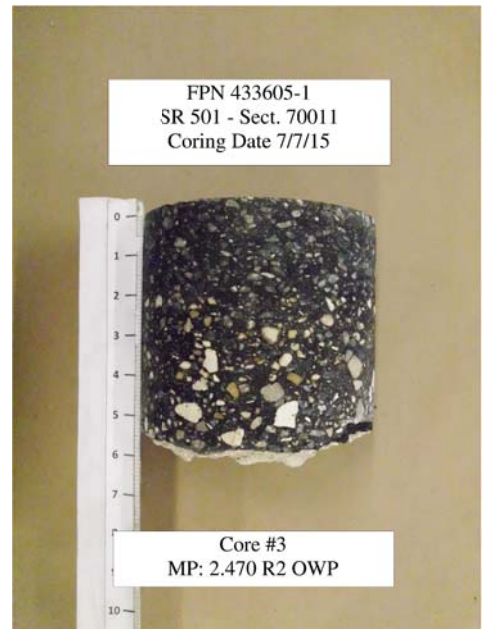
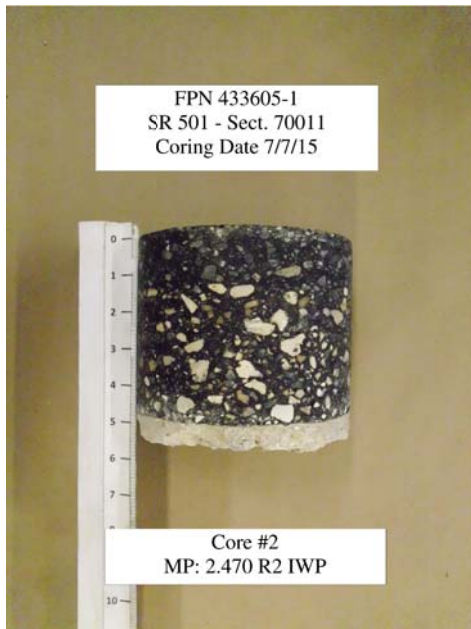
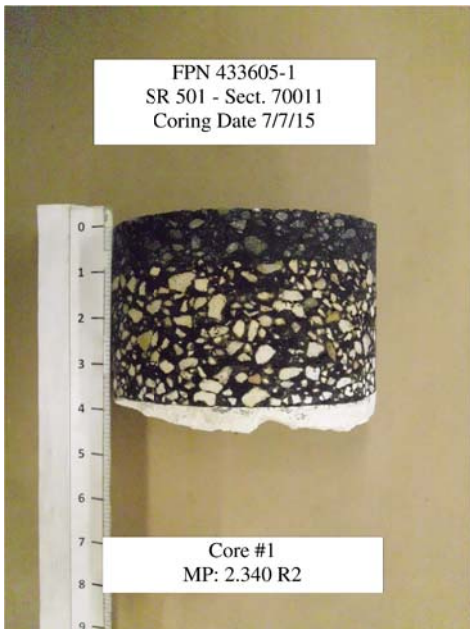
# Pavement Condition Survey (PCS) Charts for 433605-1

SR 501 in Section 70011 from MP 2.372 to MP 2.856 Composite



SR 501 in Section 70011 from MP 2.856 to MP 3.358 Composite





FPN 433605-1  
SR 501 - Sect. 70011  
Coring Date 7/7/15



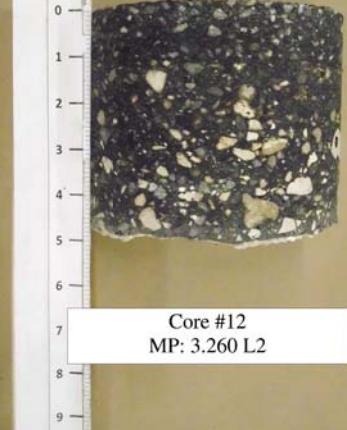
Core #10  
MP: 3.189 RRTL

FPN 433605-1  
SR 501 - Sect. 70011  
Coring Date 7/7/15



Core #11  
MP: 3.189 OR

FPN 433605-1  
SR 501 - Sect. 70011  
Coring Date 7/7/15



Core #12  
MP: 3.260 L2

FPN 433605-1  
SR 501 - Sect. 70011  
Coring Date 7/7/15



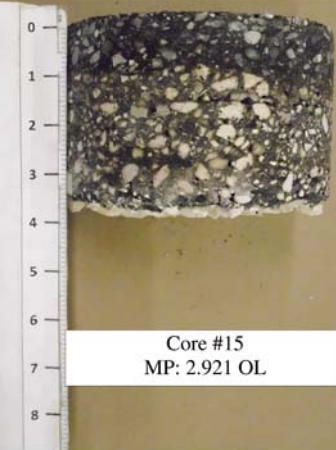
Core #13  
MP: 3.260 OL

FPN 433605-1  
SR 501 - Sect. 70011  
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Core #14  
MP: 2.921 LRTL

FPN 433605-1  
SR 501 - Sect. 70011  
Coring Date 7/7/15



Core #15  
MP: 2.921 OL

FPN 433605-1  
SR 501 - Sect. 70011  
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Core #16  
MP: 2.880 L1

FPN 433605-1  
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Core #17A  
MP: 2.692 LRTL

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Core #17B  
MP: 2.692 LRTL

FPN 433605-1  
SR 501 - Sect. 70011  
Coring Date 7/7/15



Core #18  
MP: 2.692 OL

FPN 433605-1  
SR 501 - Sect. 70011  
Coring Date 7/7/15



Core #19  
MP: 2.340 LRTL

FPN 433605-1  
SR 501 - Sect. 70011  
Coring Date 7/7/15



Core #20  
MP: 2.340 R1

FPN 433605-1  
SR 501 - Sect. 70011  
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Core #21  
MP: 2.340 CTL

FPN 433605-1  
SR 501 - Sect. 70011  
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Core #22  
MP: 2.471 R1

FPN 433605-1  
SR 501 - Sect. 70011  
Coring Date 7/7/15



Core #23  
MP: 2.560 LLTL

FPN 433605-1  
SR 501 - Sect. 70011  
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Core #24  
MP: 2.595 CTL

FPN 433605-1  
SR 501 - Sect. 70011  
Coring Date 7/7/15



Core #25  
MP: 2.691 R1

FPN 433605-1  
SR 501 - Sect. 70011  
Coring Date 7/7/15



Core #26  
MP: 2.920 R1

FPN 433605-1  
SR 501 - Sect. 70011  
Coring Date 7/7/15



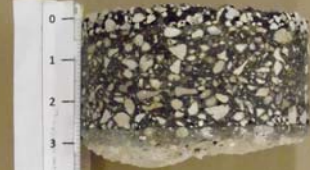
Core #27  
MP: 3.189 R1

FPN 433605-1  
SR 501 - Sect. 70011  
Coring Date 7/7/15



Core #28  
MP: 3.320 R1

FPN 433605-1  
SR 501 - Sect. 70011  
Coring Date 7/7/15



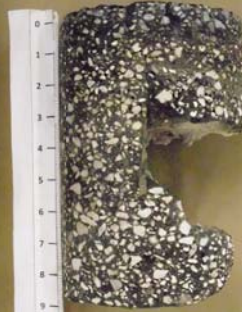
Core #29  
MP: 3.320 RLTL

FPN 433605-1  
SR 501 - Sect. 70011  
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Core #30A  
MP: 3.260 L1

FPN 433605-1  
SR 501 - Sect. 70011  
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Core #30B  
MP: 3.260 L1

FPN 433605-1  
SR 501 - Sect. 70011  
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Core #31  
MP: 3.260 LLTL

FPN 433605-1  
SR 501 - Sect. 70011  
Coring Date 7/7/15



Core #32  
MP: 2.880 LLTL

FPN 433605-1  
SR 501 - Sect. 70011  
Coring Date 7/7/15



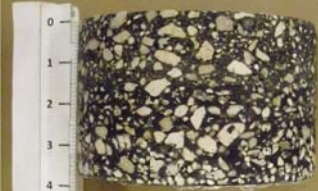
Core #33  
MP: 2.690 LLTL IWP

FPN 433605-1  
SR 501 - Sect. 70011  
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Core #34  
MP: 2.690 LLTL OWP

FPN 433605-1  
SR 501 - Sect. 70011  
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Core #35  
MP: 2.340 L1

FPN 433605-1  
SR 501 - Sect. 70011  
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Core #36  
MP: 3.028 R1 IWP

FPN 433605-1  
SR 501 - Sect. 70011  
Coring Date 7/7/15



Core #37  
MP: 3.028 R1 OWP

FPN 433605-1  
SR 501 - Sect. 70011  
Coring Date 7/7/15



Core #38  
MP: 3.028 OR

FPN 433605-1  
SR 501 - Sect. 70011  
Coring Date 7/7/15



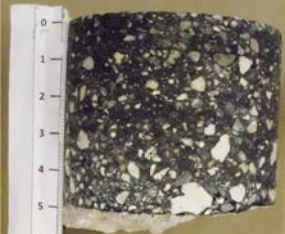
Core #39  
MP: 3.028 L1 IWP

FPN 433605-1  
SR 501 - Sect. 70011  
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Core #40  
MP: 3.028 L1 OWP

FPN 433605-1  
SR 501 - Sect. 70011  
Coring Date 7/7/15



Core #41  
MP: 3.028 OL

FPN 433605-1  
SR 501 - Sect. 70011  
Coring Date 7/7/15



Core #42  
MP: 2.690 L1 IWP

FPN 433605-1  
SR 501 - Sect. 70011  
Coring Date 7/7/15



Core #43  
MP: 2.690 L1 OWP

FPN 433605-1  
SR 501 - Sect. 70011  
Coring Date 7/7/15



Core #44  
MP: 2.469 L1 IWP

FPN 433605-1  
SR 501 - Sect. 70011  
Coring Date 7/7/15



Core #45  
MP: 2.690 L1 OWP



Photo 1: SR 501 southbound near MP 2.283. The pavement surface at the beginning of the project is an older friction course. It is in fair condition with minor cracking distress.



Photo 2: SR 501 northbound near MP 2.395. The pavement from MP 2.355 to MP 3.115 in the northbound lane was performed under a permit when the Walmart shopping center at MP 2.708 was constructed in 2005.



Photo 3: SR 501 southbound near MP 2.468. The center turn lane and southbound L1 travel lane is the original alignment with Sand Bituminous Roadway Mix (SBRM) as a base instead of Limerock.



Photo 4: SR 501 southbound near MP 2.650. This is an example of the reflective cracking from the SBRM base of the original roadway base coming to the surface. The outside portion of the lane is widening and has a Limerock base.



Photo 5: SR 501 northbound near MP 2.655. This is an area of visible rutting in the roadway. Note the asphalt patch at the stop bar. This is at the intersection of Otterbein Avenue.

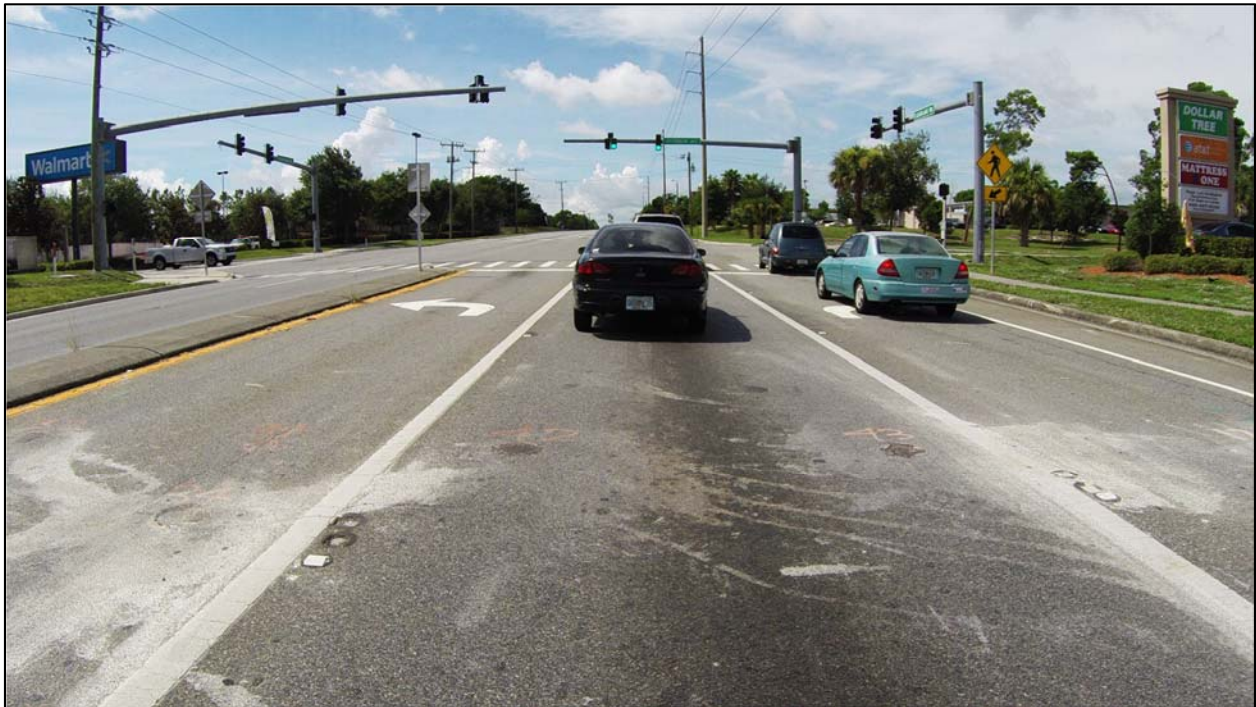


Photo 6: SR 501 southbound near MP 2.708. This was at a location where profile coring was performed to determine cross-slope, composition of the asphalt and base thickness.



Photo 7: SR 501 northbound near MP 2.970. This is in the merge area where the roadway narrows from a four lane divided roadway to a two lane roadway.



Photo 8: SR 501 southbound near MP 3.263. There are continuous minor longitudinal cracks where pavement joints exist from the last asphalt work on the roadway in 2005.



Photo 9: SR 501 northbound near MP 3.295. From MP 3.115 to MP 3.358, the surface course of the northbound R1 lane, outside right turn lane and outside paved shoulder has an open-graded friction course (OGFC) of FC-2 instead of the dense-graded friction found elsewhere on the project.