

Alabama Statewide Airport Pavement Management Program Update



Pryor Field Regional Airport (DCU)

Final Report

February 2022



Submitted to

Alabama Aeronautics Bureau

Submitted by



All About Pavements, Inc (API)
www.allaboutpavements.com

Pavement Management – Evaluation – Testing – Design

**ALABAMA STATEWIDE AIRPORT PAVEMENT MANAGEMENT
PROGRAM UPDATE**

Pryor Field Regional Airport (DCU)

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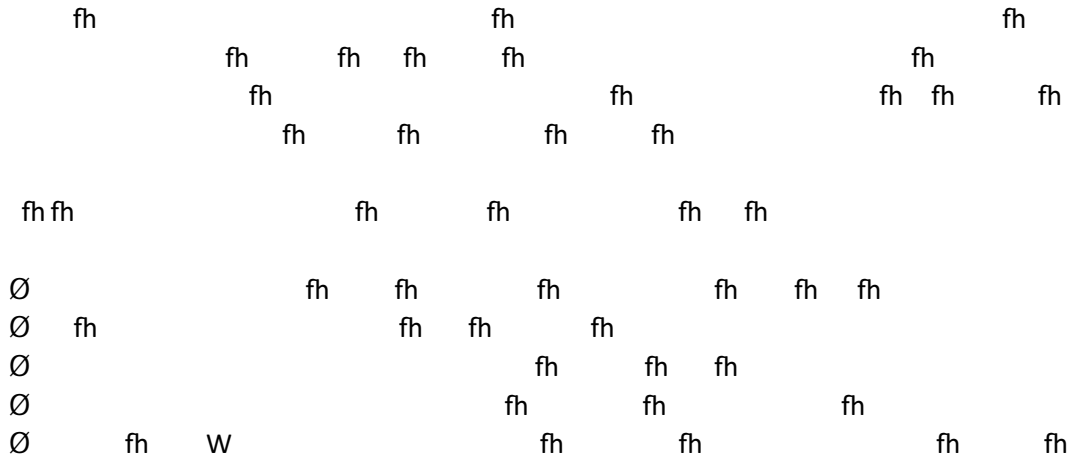
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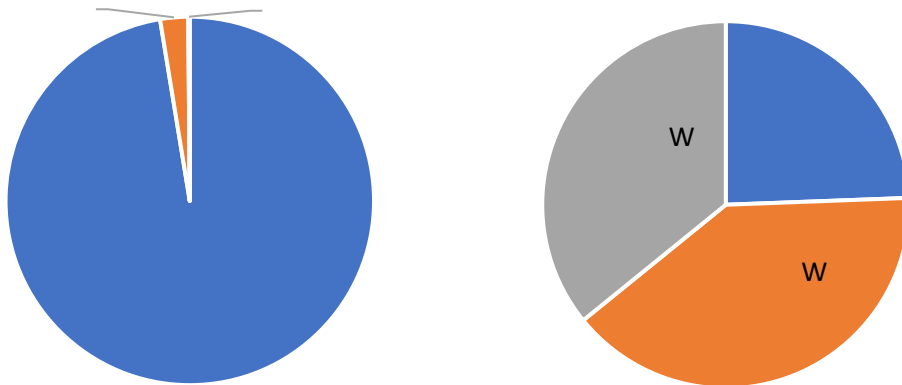
Executive Summary



ES.1 Pavement Inventory



Figure ES-1: Pavement Area (sf) by Surface Type and Branch Use.



ES.2 Pavement Condition

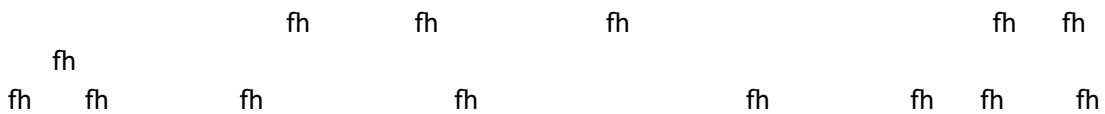


Figure ES-2: M&R Funding Levels.

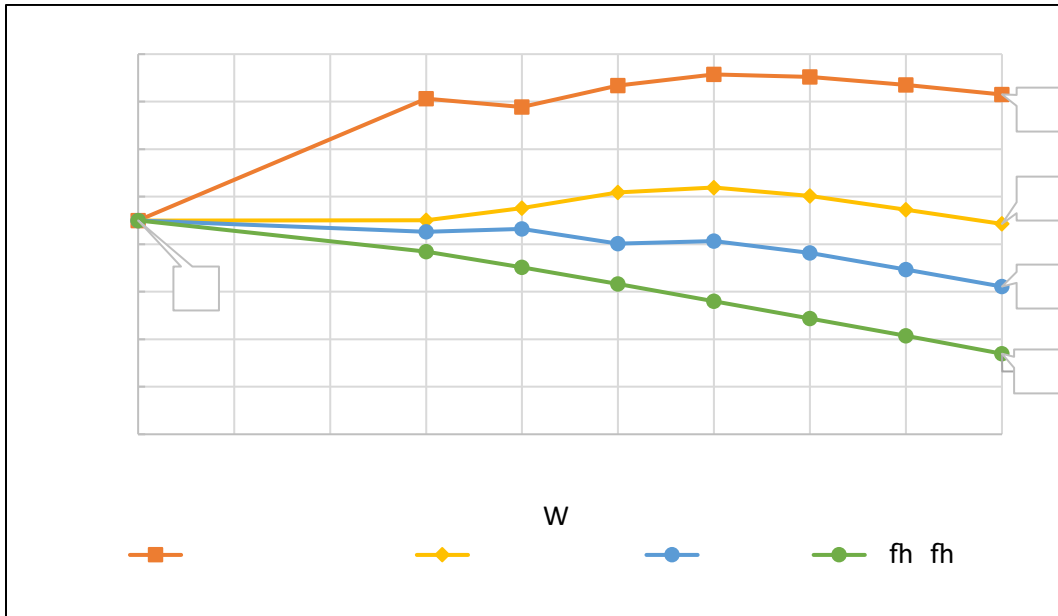


Table ES-2: Summary of Pavement Capital Improvement Program.

fh W	fh	fh	fh	fh fh	fh fh	fh	
	fh	fh	fh				
	fh	fh	fh				
	fh	fh					
			fh				
	fh	fh					
	fh						
	fh	fh	fh				
			fh				
	fh						
	Total			\$10,232,273			

Table ES-3: Summary of Localized Maintenance Plan.

fh	fh	fh	fh	fh	fh fh
				Total	\$108,869

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3 PAVEMENT CONDITION.....3-1

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APPENDICES

Appendix A

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Appendix B

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Appendix C

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Appendix D

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Appendix E

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Appendix F

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Appendix G

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Appendix H

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Appendix I

fh fh

W

Appendix J

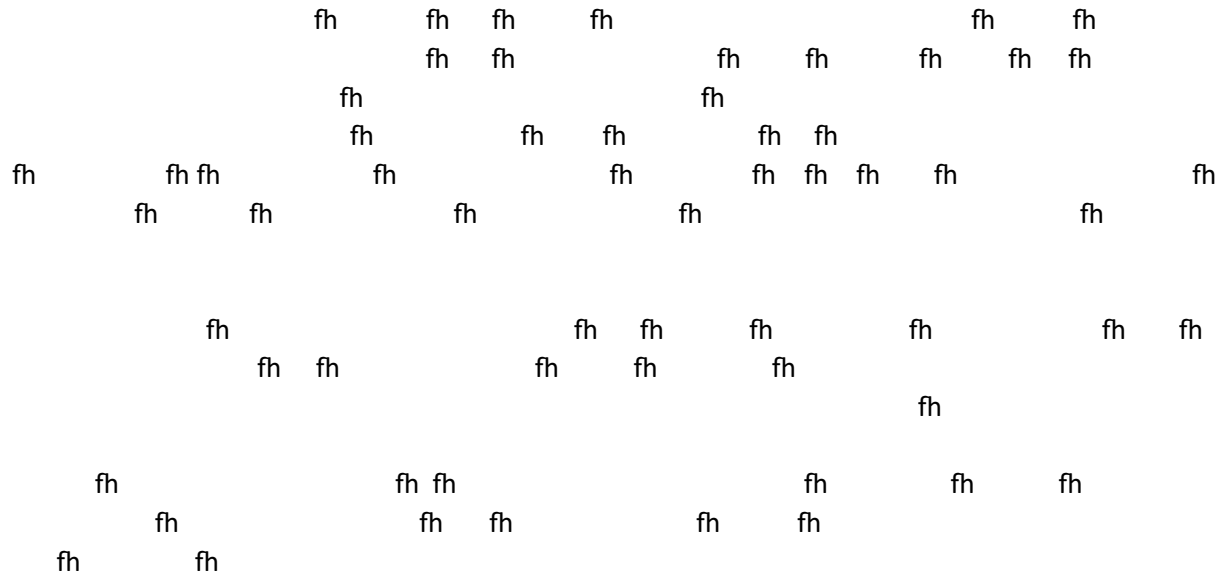
W

- fh fh fh
- fh fhfh

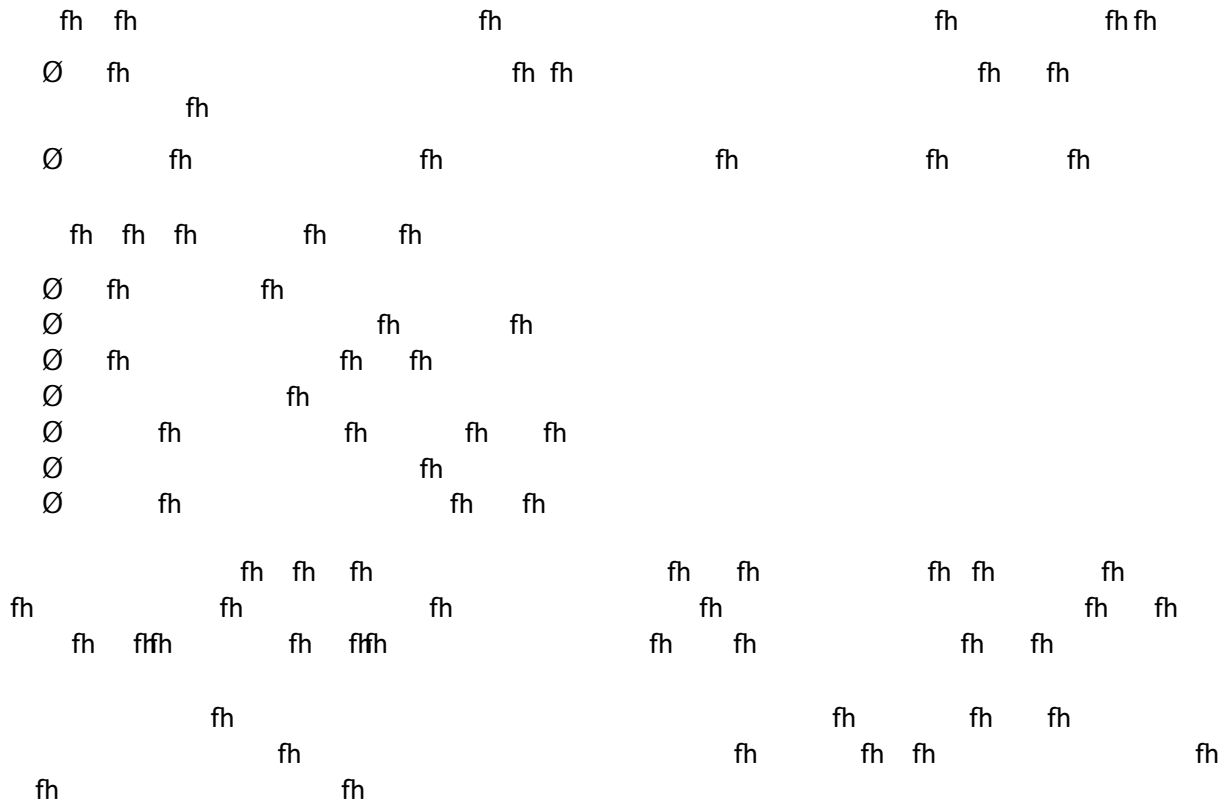
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1 Introduction

1.1. Overview



1.2. Work Scope



1.3. Pavement Management Concept

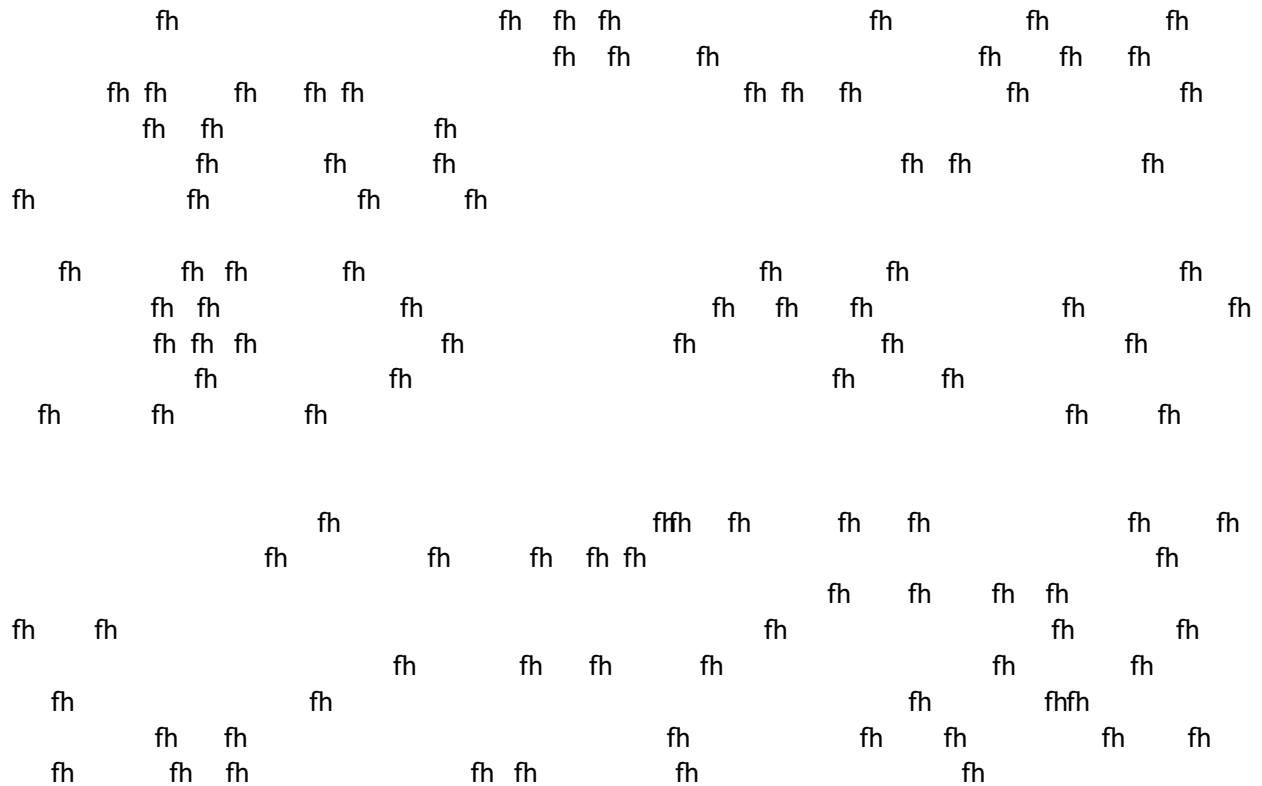
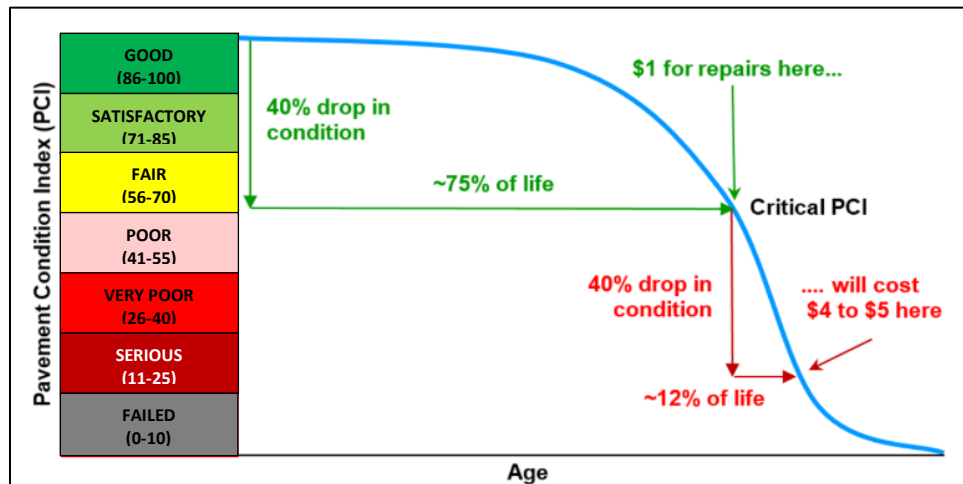


Figure 1.1: Pavement Management Concept.



2 Airfield Pavement Inventory

2.1. Introduction

fh fh fh fh fh fh fh fh fh fh
fh fh fh fh fh fh fh fh fh fh
fh fh fh fh fh fh fh fh fh fh

Figure 2.1: Pryor Field Regional Airport.



(Source: Google Earth)

2.2. Pavement Inventory

fh fh fh fh fh fh fh fh fh fh fh fh fh fh fh
fh fh fh fh fh fh fh fh fh fh fh fh fh fh fh
fh fh fh fh fh fh fh fh fh fh fh fh fh fh fh
fh fh fh fh fh fh fh fh fh fh fh fh fh fh fh
fh fh fh fh fh fh fh fh fh fh fh fh fh fh fh
fh fh fh fh fh fh fh fh fh fh fh fh fh fh fh
fh fh fh fh fh fh fh fh fh fh fh fh fh fh fh

2.3. Climatic Conditions

fh fh fh fh fh fh fh fh fh fh fh fh fh fh fh
fh fh fh fh fh fh fh fh fh fh fh fh fh fh fh
fh fh fh fh fh fh fh fh fh fh fh fh fh fh fh
fh fh fh fh fh fh fh fh fh fh fh fh fh fh fh

Table 2.2: PCI Sampling Rate for AC Surfaces.

fh	fh

2.5. Inventory Summary

fh fh fh fh fh fh fh

Table 2.3: DCU Pavement Branches.

				fh fh
	fh			
	fh			
		W		
		W		
		W		
		W		
		W		
		W		
		W		
	fh fh	W		
	fh fh	W		
Total			1,536,116	16

fh fh fh fh fh

Table 2.4: DCU Pavement Age.

W	fh fh	fh	

fh

fh
fh

fh

Figure 2.2: DCU Pavement Area by Surface Type.

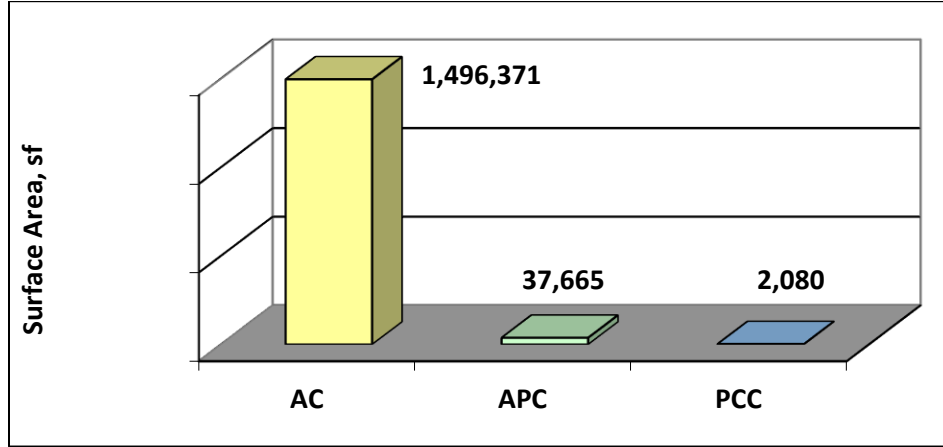
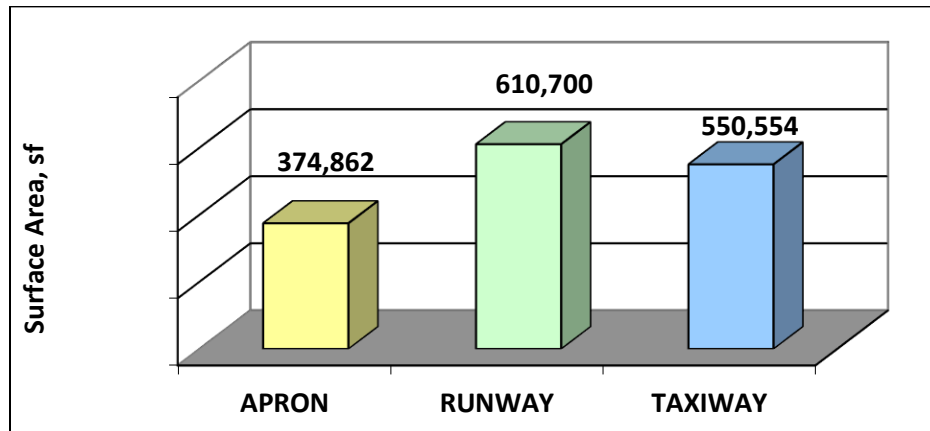
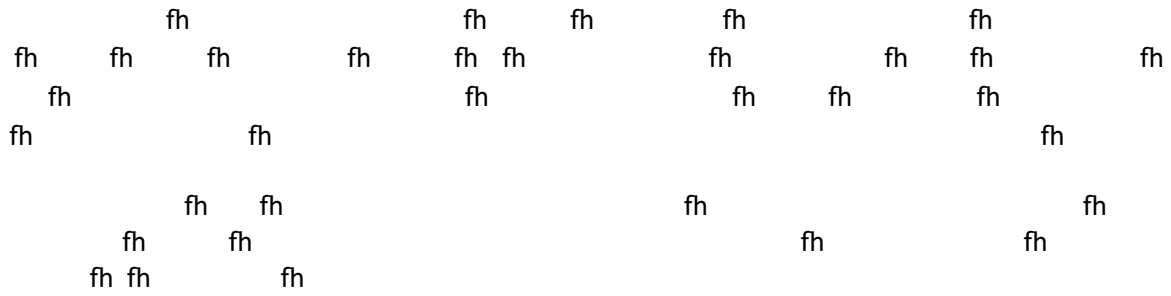


Figure 2.3: DCU Pavement Area by Branch Use.



fh



3.4. Additional PCI-based Indices

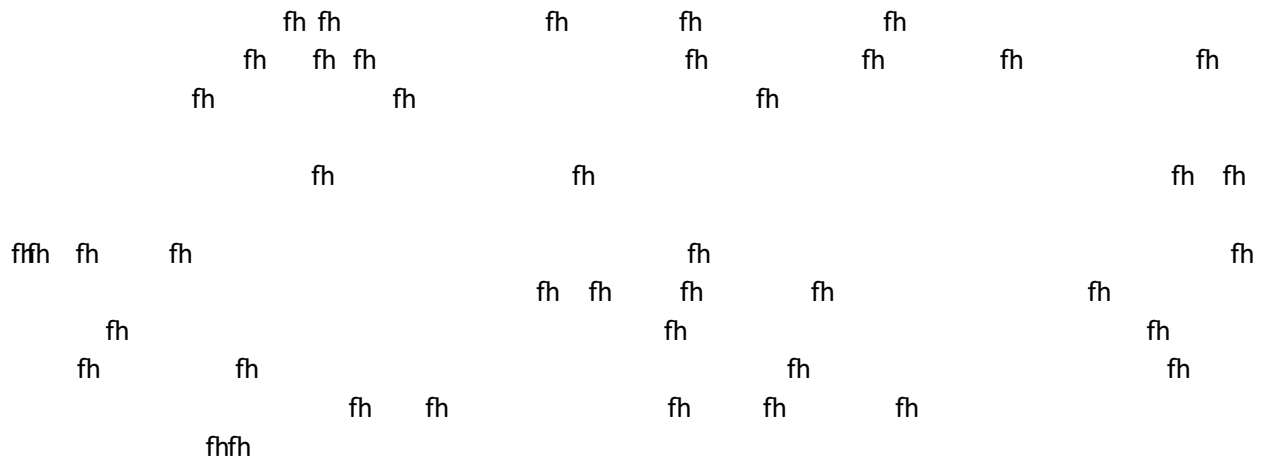


Figure 3.1: FOD Potential Rating Scale.

fh fh fh	
fh fh fh fh fh	ffh
fh fh	
fh fh	
fh	
fh fh fh fh	ffh
fh fh fh fh fh	

3.5. PCI Survey Results

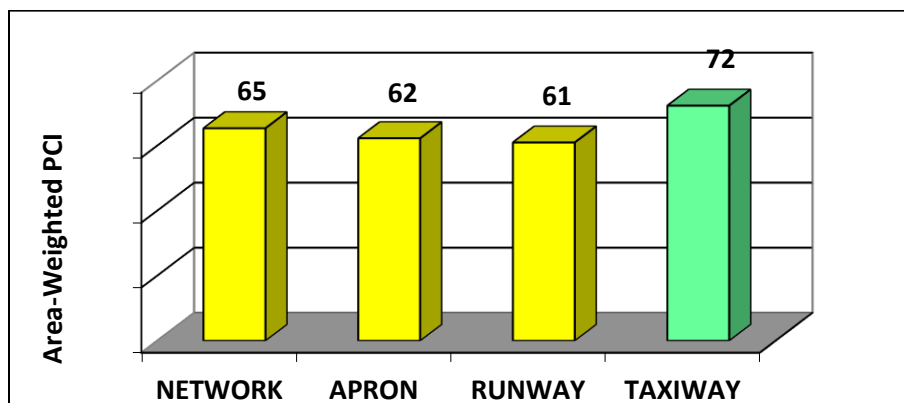
fh

fh fh fh fh fh fh fh fh fh fh

fh

fh fh

Figure 3.2: Pavement Condition by Branch Use.



fh

fh fh fh fh fh fh fh fh fh fh

Figure 3.3: Pavement Condition by Percent of Area.

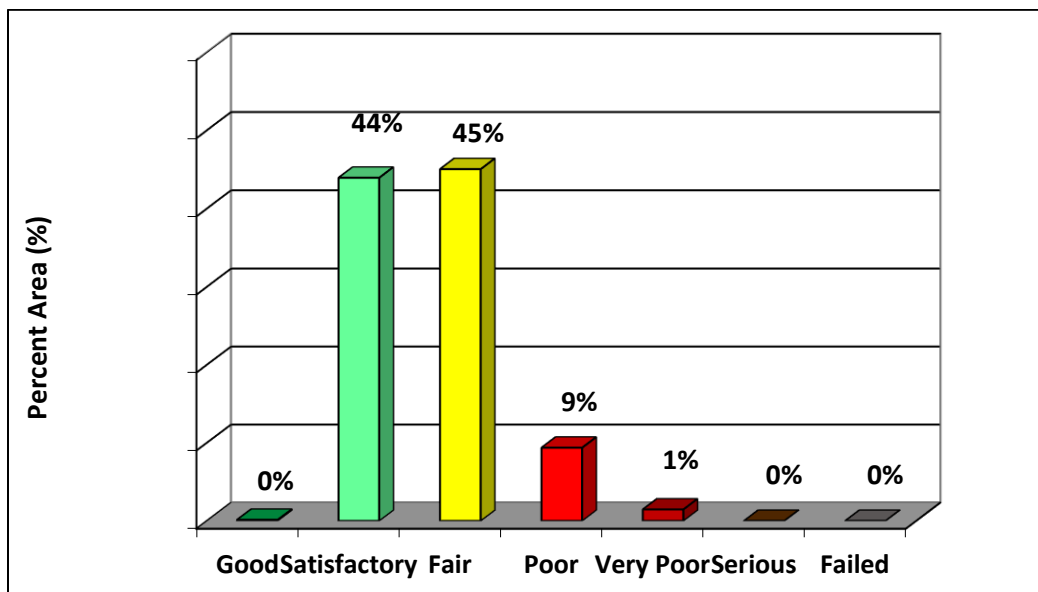


Figure 3.4: PCC Apron Condition Rating.

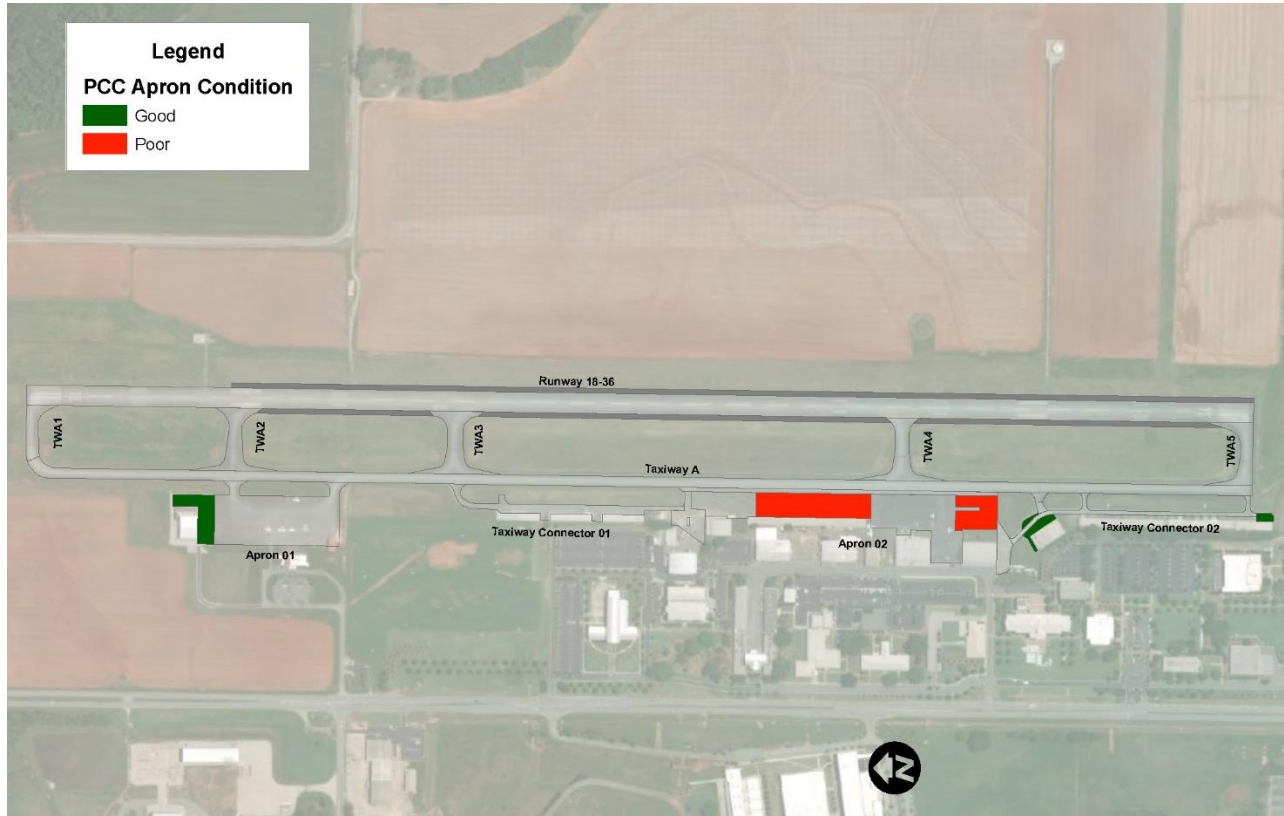


Figure 4.1: PCI Forecasting.

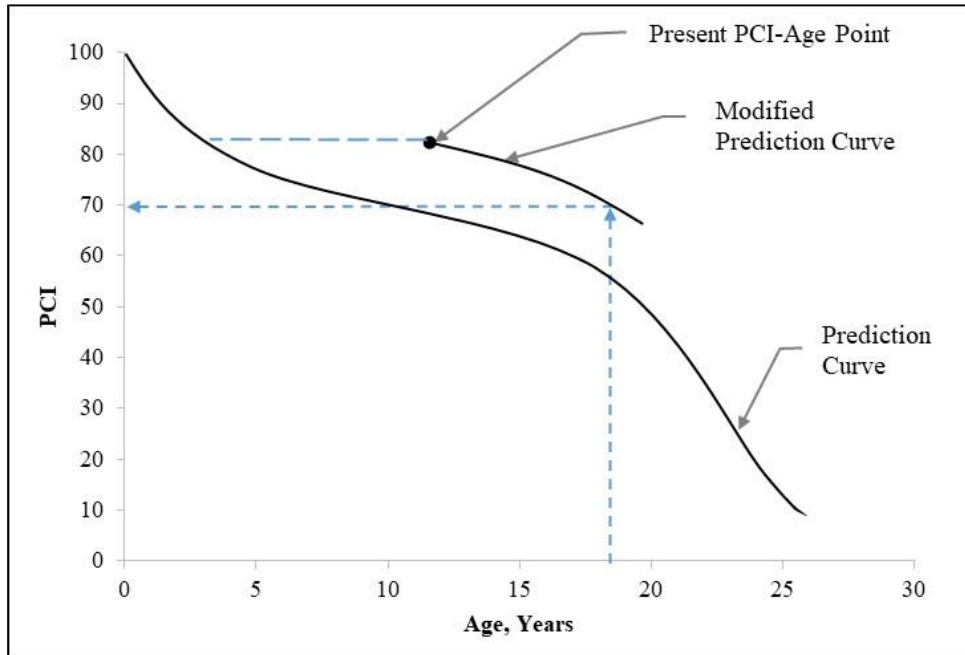
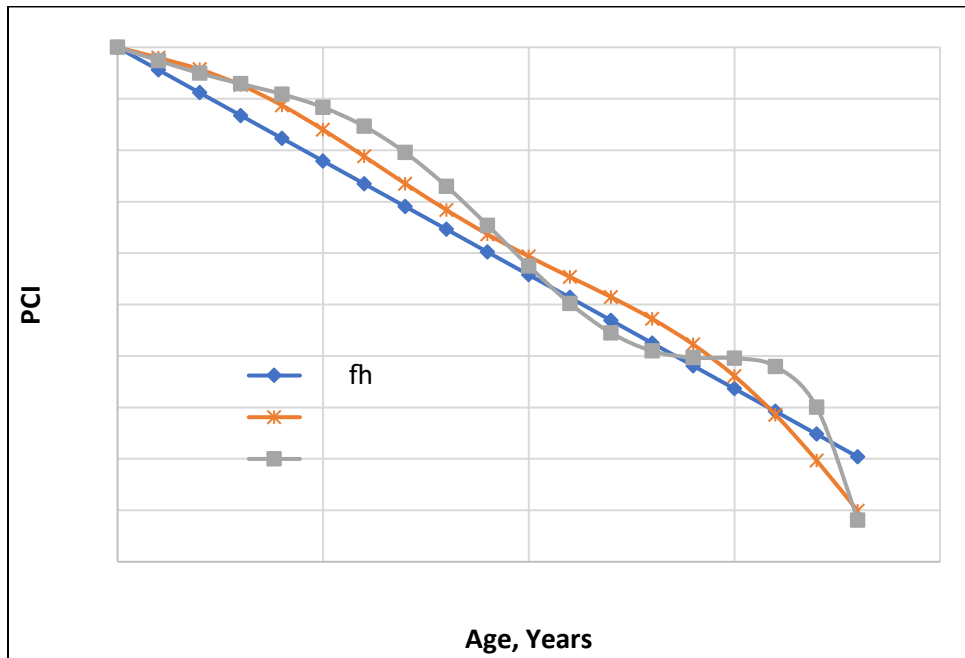
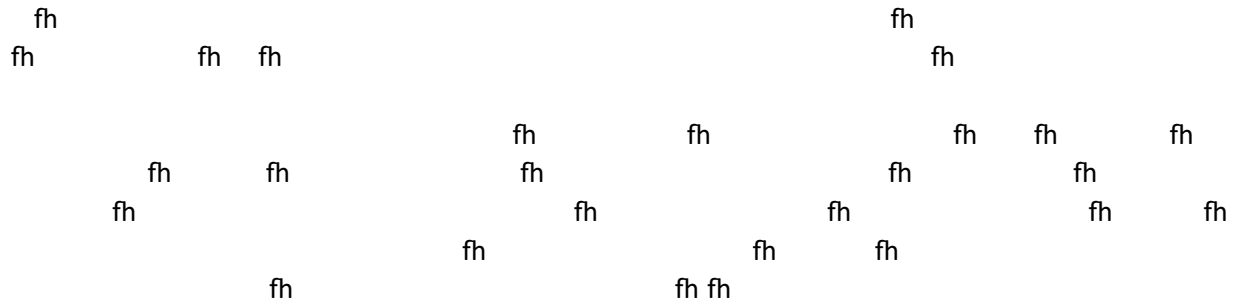


Figure 4.2: Family Curves.



4.3. Critical PCI Values

the PCI value at which the rate of PCI loss increases with time, or the cost of applying localized preventive maintenance increases significantly



4.4. M&R Policies and Unit Costs

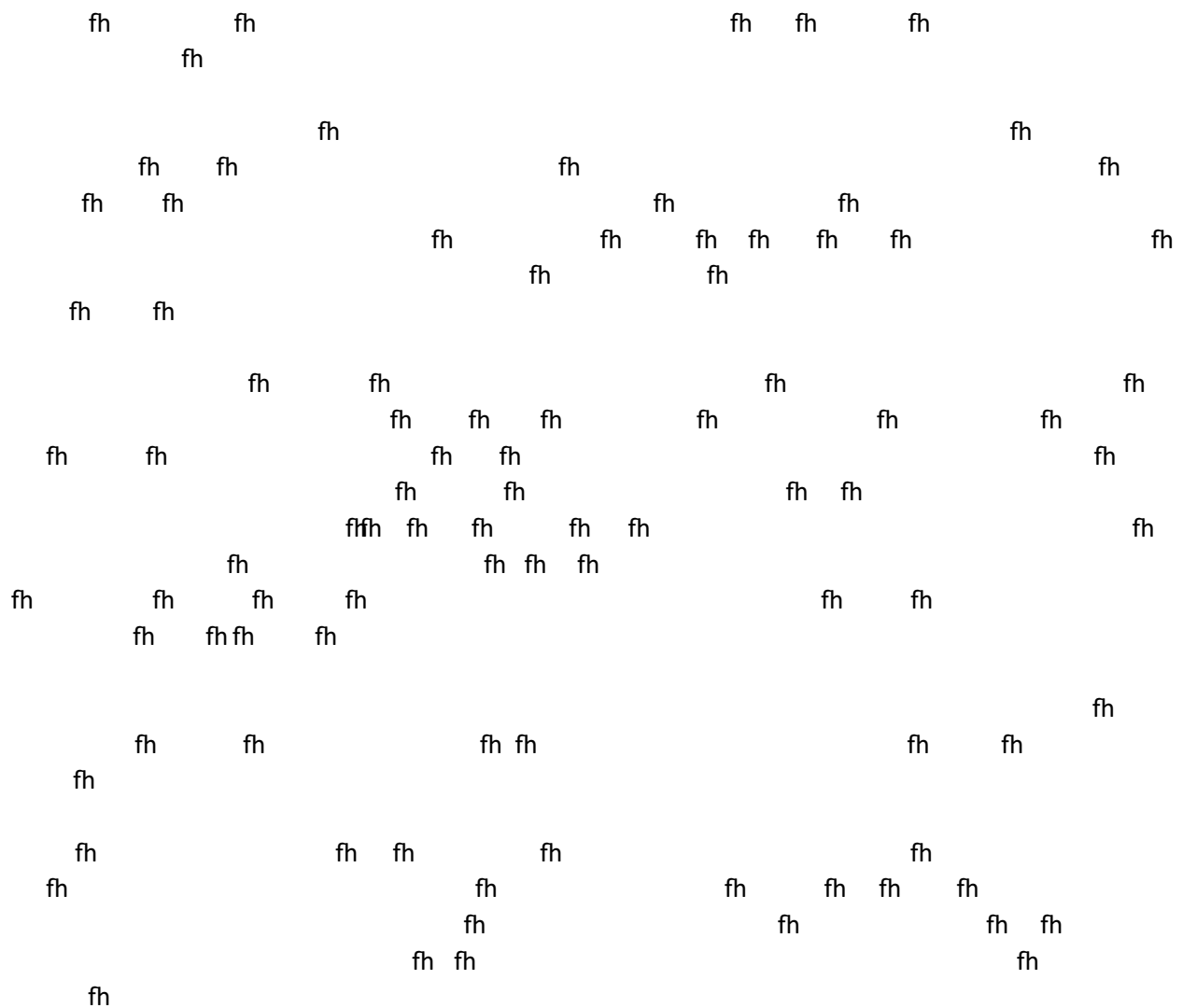


Table 4.1: M&R Activities and Unit Costs.

				fh
	fh			
fh			fh	
fh				
fh				
fh	fh		fh fh	

fh
fh fh

4.5. Pavement CIP Development

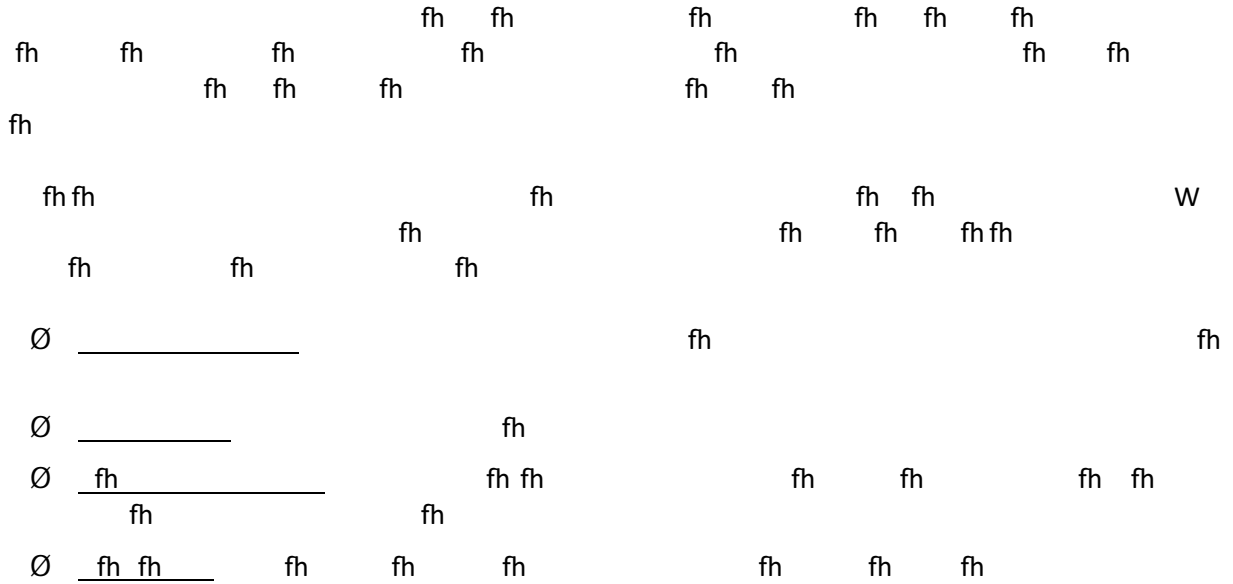


Figure 4.3: Budget Analysis Process.

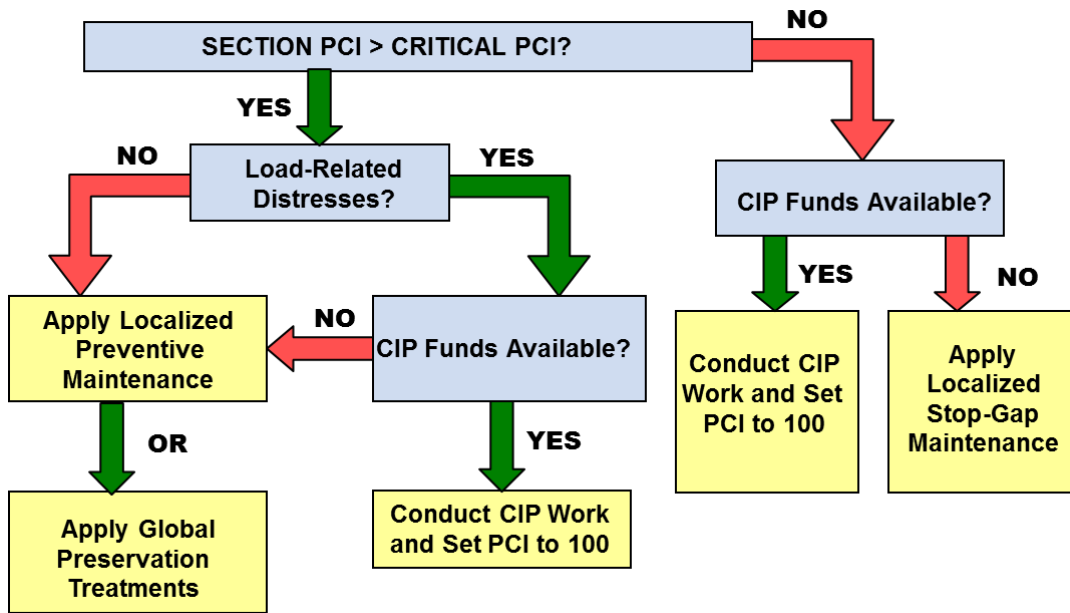
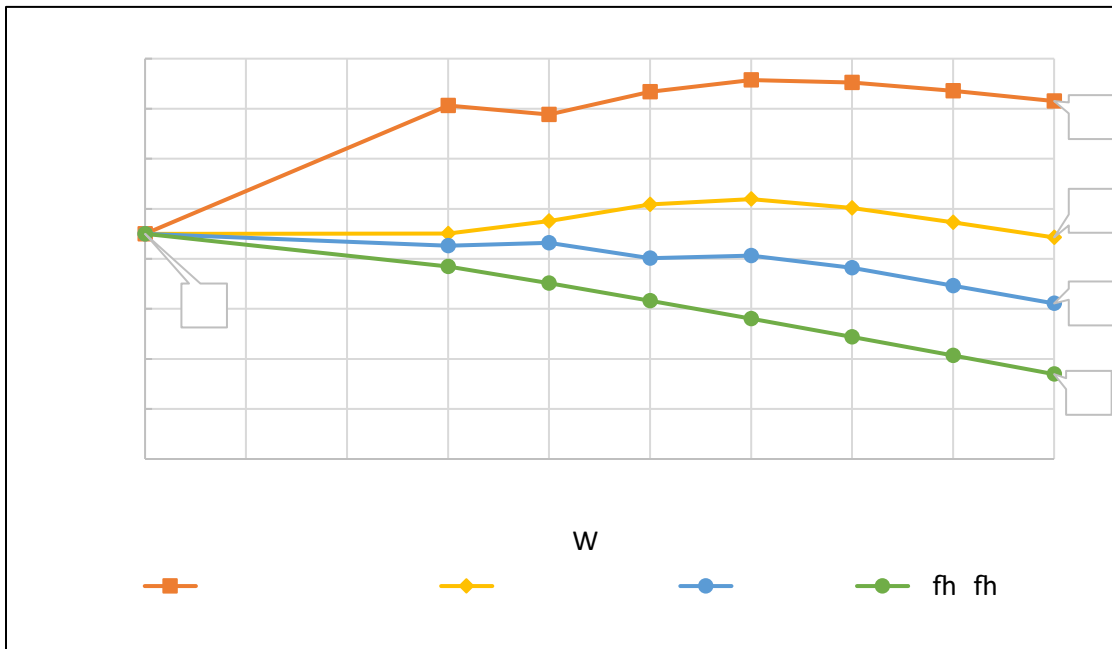


Figure 4.4: M&R Funding Levels.



fh fh fh fh fh fh fh fh fh fh

fh fh fh fh fh fh fh fh fh fh

fh fh fh fh fh fh fh fh fh fh

Table 4.5: Summary of Year-1 Maintenance Plan.

fh	fh	fh	fh	fh	fh	fh
					Total	\$108,869

APPENDIX A
INVENTORY



Appendix A
Pavement Inventory Report
Pryor Field Regional Airport (DCU)

Branch ID	Name	Branch Use	Section ID	Rank ¹	Length (ft)	Width (ft)	Area (sf)	LCD ²	Surface ³
A01	Apron 01	APRON	01	S	620	246	161,903	1/1/1942	AC
A02	Apron 02	APRON	05	S	325	120	37,665	7/23/1997	APC
A02	Apron 02	APRON	02	S	70	160	14,700	1/1/1942	AC
A02	Apron 02	APRON	04	S	440	176	106,502	1/1/1942	AC
A02	Apron 02	APRON	03	S	1,314	20	31,628	1/1/1942	AC
A02	Apron 02	APRON	01	S	180	124	22,464	1/1/1942	AC
R1836	Runway 18-36	RUNWAY	01	P	6,107	100	610,700	1/1/1942	AC
TA	Taxiway A	TAXIWAY	01	P	6,670	50	306,431	1/1/1942	AC
TA1	Taxiway A1	TAXIWAY	01	S	275	55	19,017	1/1/1942	AC
TA2	Taxiway A2	TAXIWAY	01	S	312	70	36,082	1/1/1942	AC
TA3	Taxiway A3	TAXIWAY	01	S	312	70	40,177	1/1/1942	AC
TA4	Taxiway A4	TAXIWAY	01	S	312	70	34,096	1/1/1942	AC
TA5	Taxiway A5	TAXIWAY	01	S	310	60	28,772	1/1/1942	AC
TC01	Taxiway Connector 01	TAXIWAY	01	S	1,155	45	51,233	1/1/1990	AC
TC02	Taxiway Connector 02	TAXIWAY	01	S	1,300	20	32,666	1/1/1989	AC
TC02	Taxiway Connector 02	TAXIWAY	02	S	55	38	2,080	10/21/2018	PCC

¹ P = Primary pavement, S = Secondary pavement, T = Tertiary pavement

² LCD = Last construction date. The date of the last major pavement rehabilitation (e.g. AC overlay)

³ AC = Asphalt Cement Concrete, AAC = Asphalt Overlay AC, PCC = Portland cement Concrete, APC = Asphalt Overlay PCC

APPENDIX B

PMP Maps

B1: Inventory Maps

B1A: Branch Identification

B1B: Section Identification

B1C: Sample Unit Layout

B1D: Pavement Type

B1E: Branch Use

B1F: Pavement Age

B2: Surface Condition Maps

B2A: 7-Color PCI

B2B: 3-Color PCI

B2C: FOD Rating

B2D: Survey Photo Locations




B3: Pavement Capital Improvement Plan (PCIP) Maps

B3A: 2027 Forecasted PCI without PCIP












B3B: M&R Needs

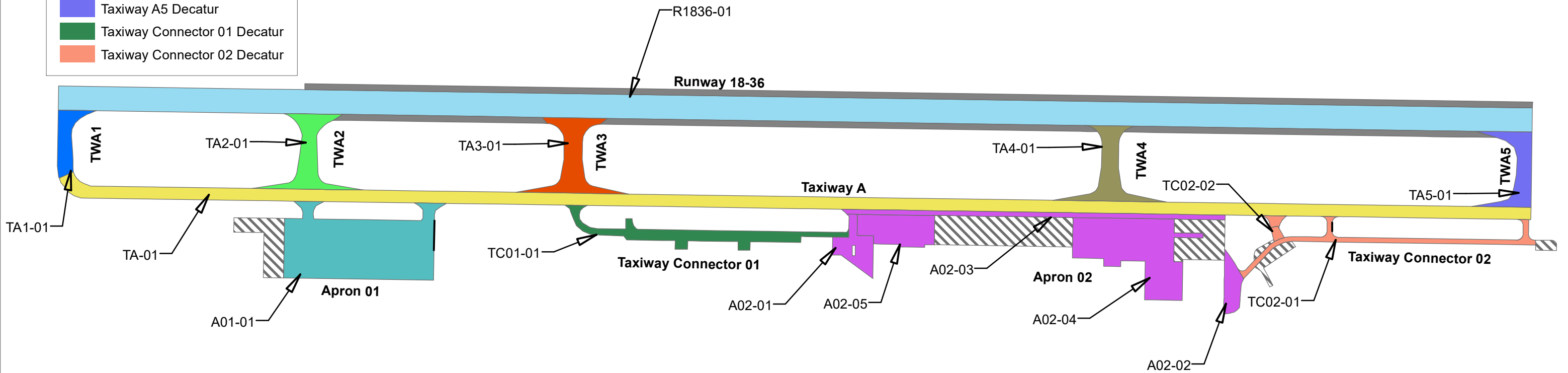
B3C: PCIP Recommendations

Legend

-  Section Boundary
-  PCC Aprons
-  Shoulder or Other

Branch Identification

-  Apron 01 Decatur
-  Apron 02 Decatur
-  Runway 18-36 Decatur
-  Taxiway A Decatur
-  Taxiway A1 Decatur
-  Taxiway A2 Decatur
-  Taxiway A3 Decatur
-  Taxiway A4 Decatur
-  Taxiway A5 Decatur
-  Taxiway Connector 01 Decatur
-  Taxiway Connector 02 Decatur



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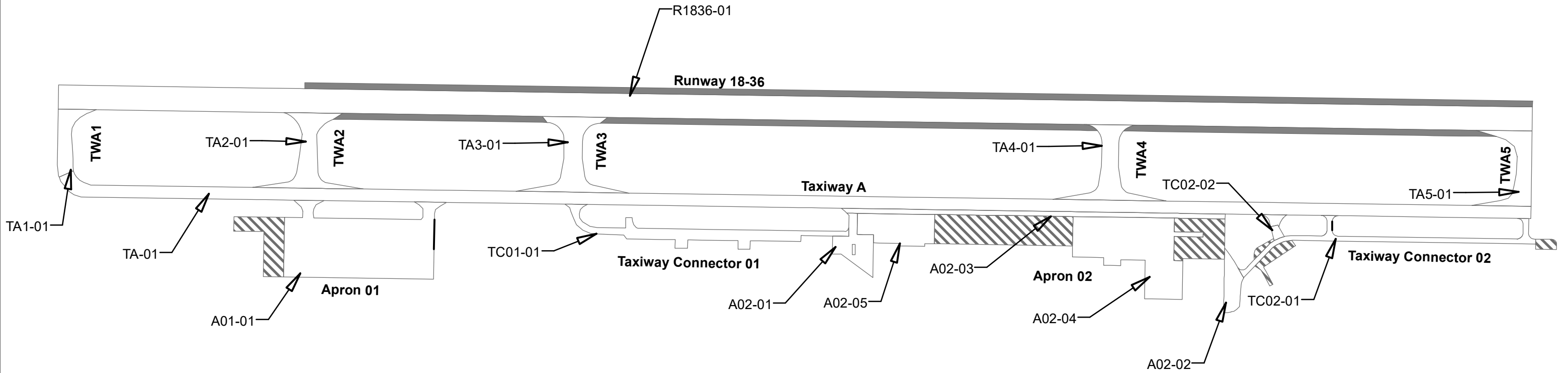
Figure B1A

Branch Identification

<p>All About Pavements, Inc. (API) <small>www.allaboutpavements.com Telephone: 217-586-2765 FAX: 217-586-1967</small></p>	ENGINEER	DATE	MAP NUMBER
	KP/MR	May 2021	Page 1
	REVISED	SCALE	
	JMA	1 in = 400 ft	FINAL

Legend

- Section Boundary
- PCC Aprons
- Shoulder or Other






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Figure B1B



Section Identification

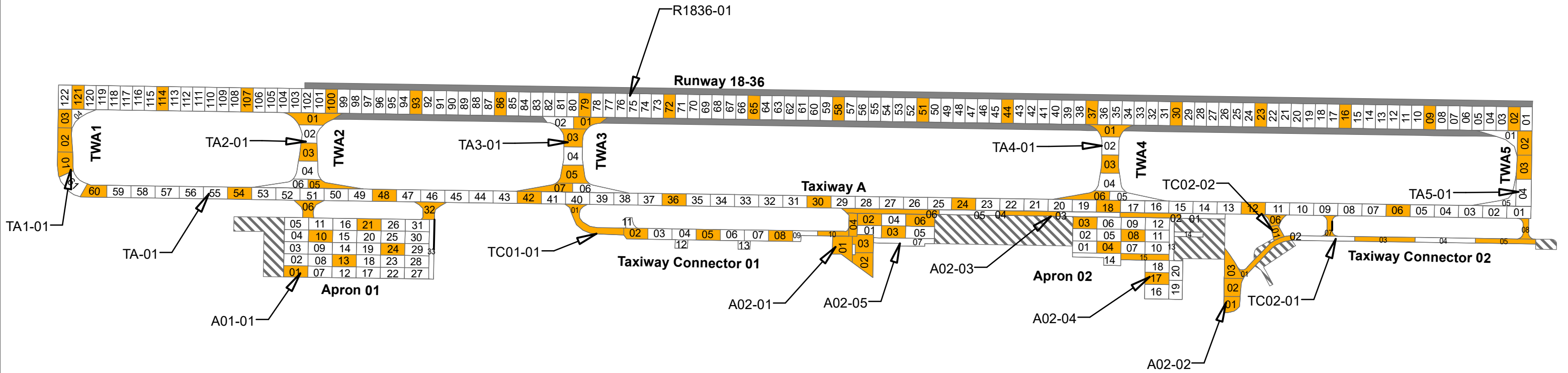
<p>All About Pavements, Inc. (API) <small>www.allaboutpavements.com Telephone: 217-586-2765 FAX: 217-586-1967</small></p>	ENGINEER	DATE	MAP NUMBER
	KP/MR	May 2021	Page 2
	REVISOR	SCALE	
	JMA	1 in = 400 ft	FINAL

Legend

-  Section Boundary
-  PCC Aprons
-  Shoulder or Other

Sample Unit Layout

-  SU Boundary
-  Inspected






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Figure B1C **Sample Unit Layout**

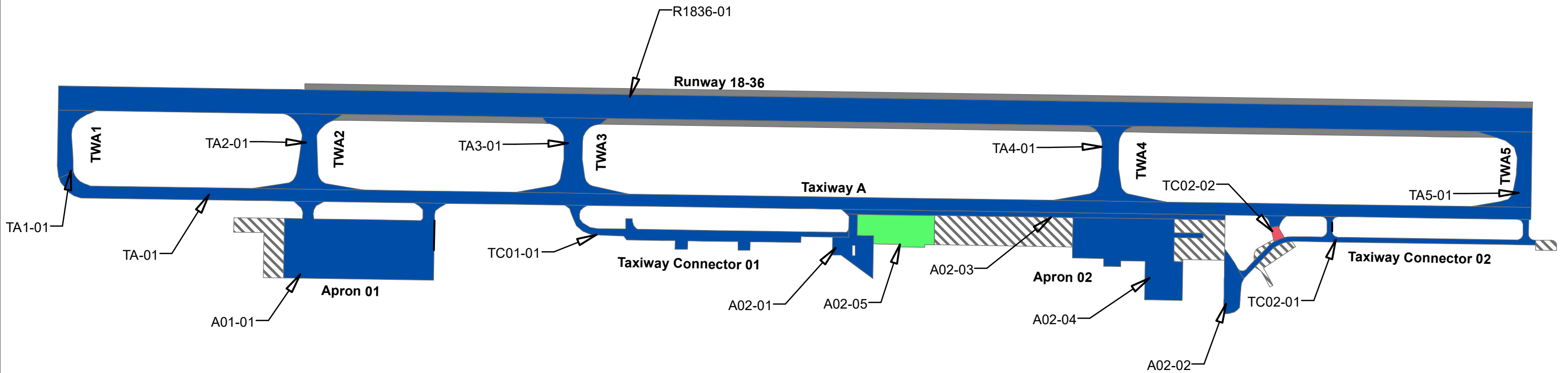
<p>All About Pavements, Inc. (API) <small>www.allaboutpavements.com Telephone: 217-586-2765 FAX: 217-586-1967</small></p>	ENGINEER	DATE	MAP NUMBER
	KP/MR	May 2021	Page 3
	REVISOR	SCALE	
	JMA	1 in = 400 ft	FINAL

Legend

-  Section Boundary
-  PCC Aprons
-  Shoulder or Other

Pavement Type

-  Asphalt Concrete (AC)
-  Asphalt Overlay Over PCC (APC)
-  Portland Cement Concrete (PCC)



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Figure B1D

Pavement Type		
ENGINEER KP/MR	DATE May 2021	MAP NUMBER Page 4
REVISED JMA	SCALE 1 in = 400 ft	FINAL

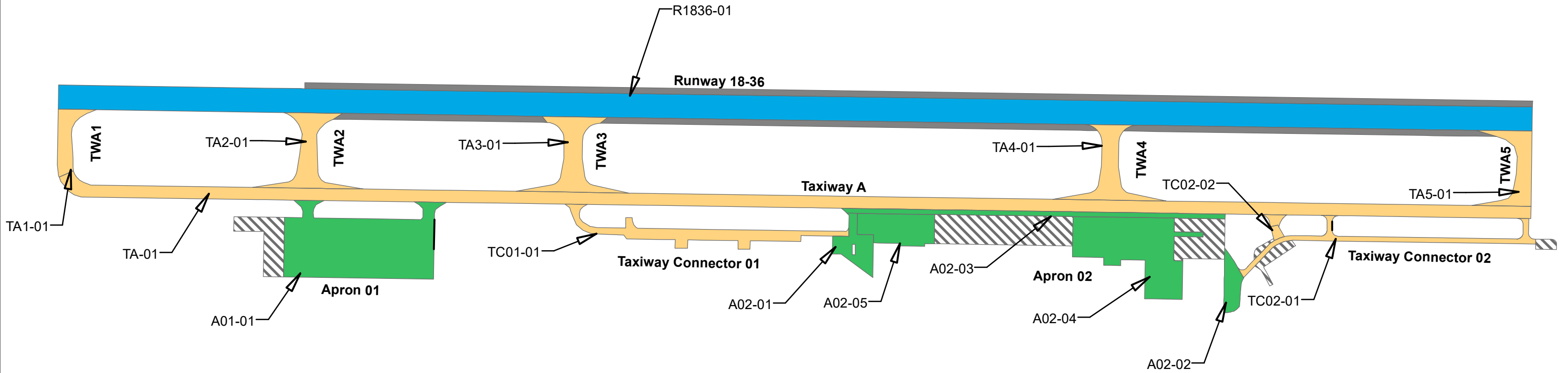
All About
Pavements, Inc. (API)
www.allaboutpavements.com
Telephone: 217-586-2765 FAX: 217-586-1967

Legend

- Section Boundary
- PCC Aprons
- Shoulder or Other

Branch Use

- APRON
- RUNWAY
- TAXIWAY






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Figure B1E






Branch Use		
ENGINEER KP/MR	DATE May 2021	MAP NUMBER Page 5
REVISED JMA	SCALE 1 in = 400 ft	FINAL

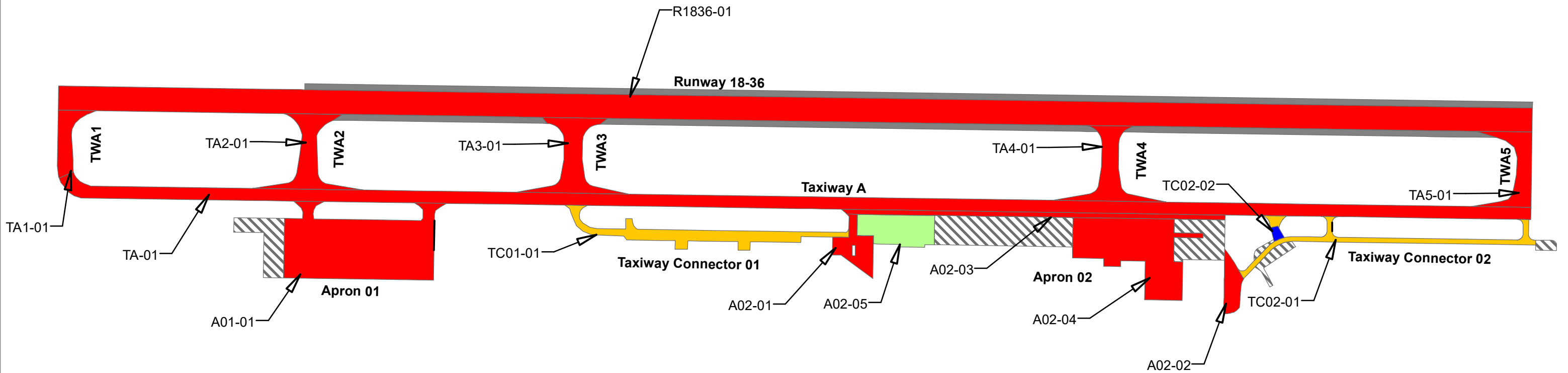
All About
Pavements, Inc. (API)
www.allaboutpavements.com
Telephone: 217-586-2765 FAX: 217-586-1967

Legend

-  Section Boundary
-  PCC Aprons
-  Shoulder or Other

Pavement Age (Yrs)

-  0 - 10
-  11 - 15
-  16 - 25
-  26 - 50
-  >50






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Figure B1F








Pavement Age

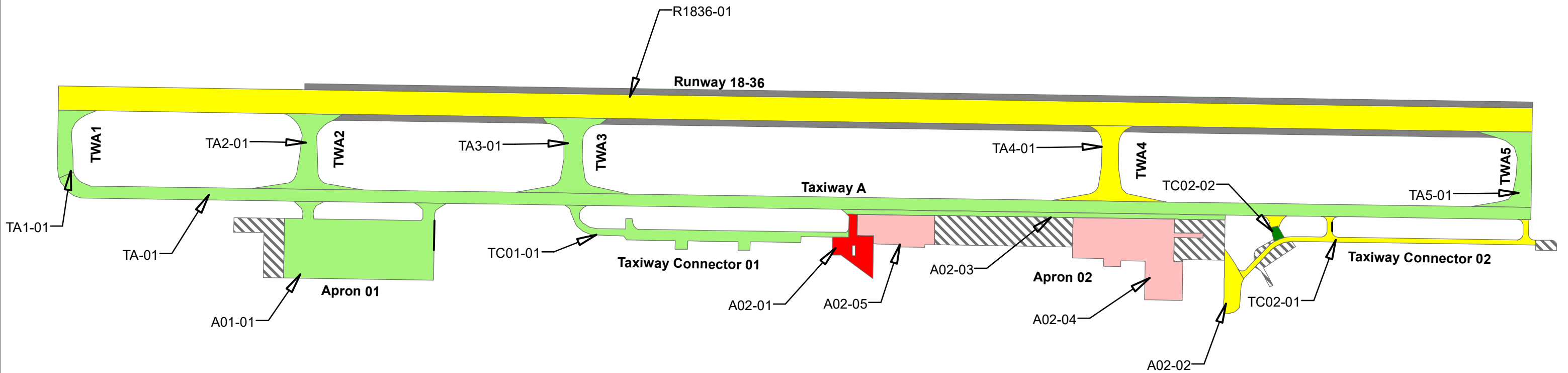
<p>All About Pavements, Inc. (API) <small>www.allaboutpavements.com Telephone: 217-586-2765 FAX: 217-586-1967</small></p>	ENGINEER	DATE	MAP NUMBER
	KP/MR	May 2021	Page 6
	REVISOR	SCALE	
	JMA	1 in = 400 ft	FINAL

Legend

-  Section Boundary
-  PCC Aprons
-  Shoulder or Other

PCI (7 Color)

-  Good (86-100)
-  Satisfactory (71-85)
-  Fair (56-70)
-  Poor (41-55)
-  Very Poor (26-40)
-  Serious (11-25)
-  Failed (0-10)






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Figure B2A




7-Color PCI

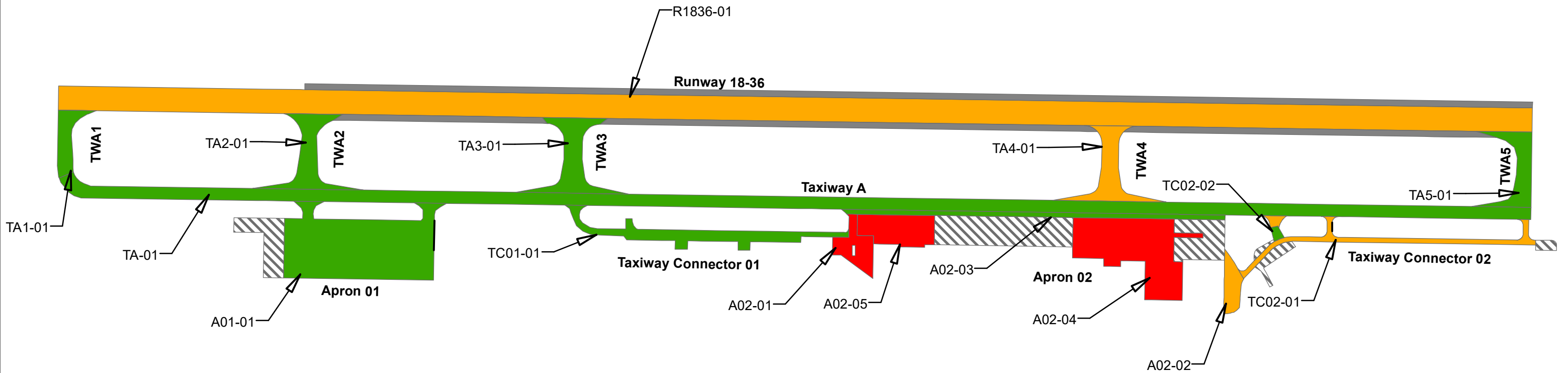
<p>All About Pavements, Inc. (API) <small>www.allaboutpavements.com Telephone: 217-586-2765 FAX: 217-586-1967</small></p>	ENGINEER	DATE	MAP NUMBER
	KP/MR	May 2021	Page 7
	REVISED	SCALE	
	JMA	1 in = 400 ft	FINAL

Legend

-  Section Boundary
-  PCC Aprons
-  Shoulder or Other

PCI (3 Color)

-  Good (71-100)
-  Fair (56-70)
-  Poor (0-55)






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Figure B2B




3-Color PCI

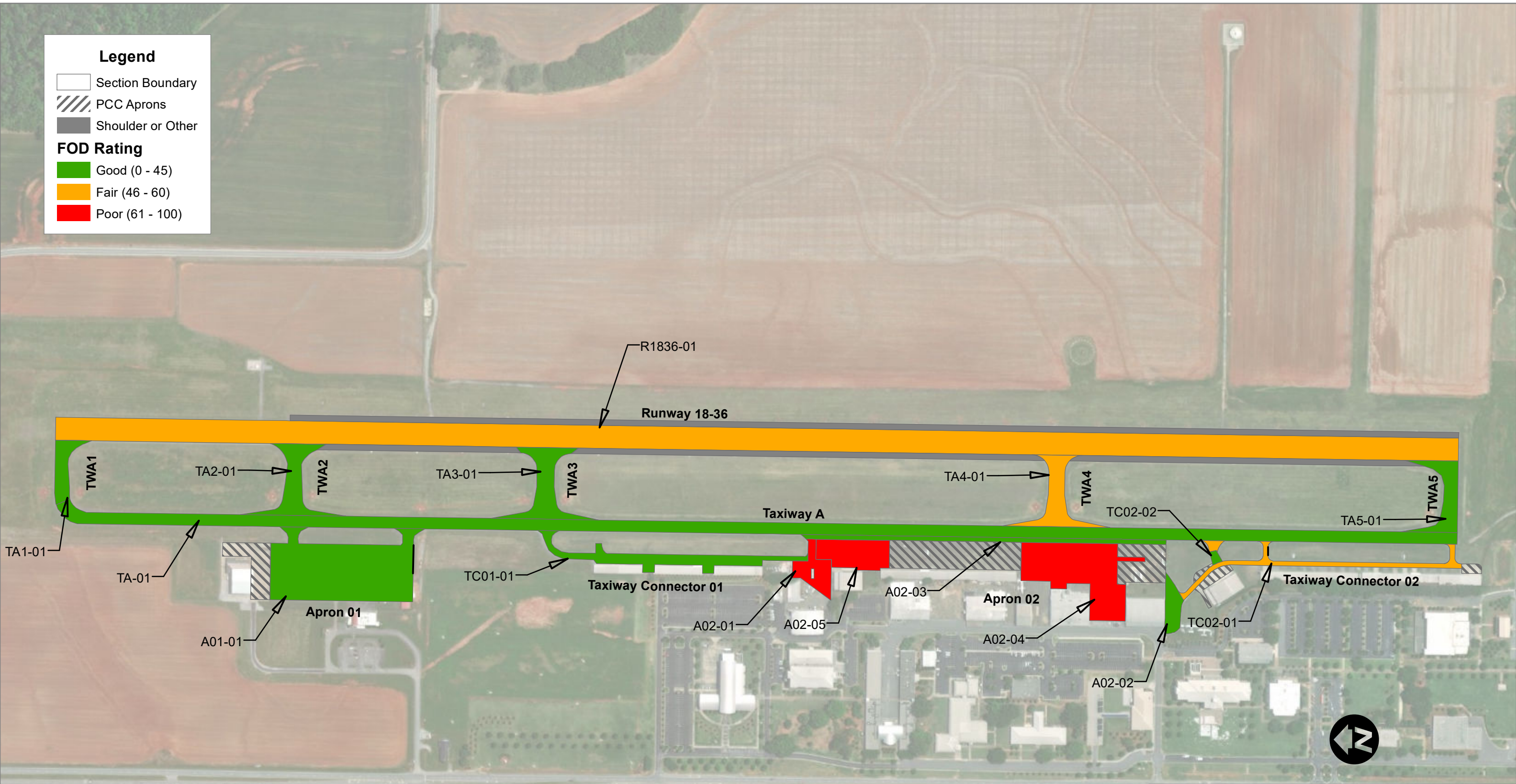
<p>All About Pavements, Inc. (API) <small>www.allaboutpavements.com Telephone: 217-586-2765 FAX: 217-586-1967</small></p>	ENGINEER	DATE	MAP NUMBER
	KP/MR	May 2021	Page 8
	REVISOR	SCALE	
JMA	1 in = 400 ft	FINAL	

Legend

-  Section Boundary
-  PCC Aprons
-  Shoulder or Other

FOD Rating

-  Good (0 - 45)
-  Fair (46 - 60)
-  Poor (61 - 100)




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Figure B2C

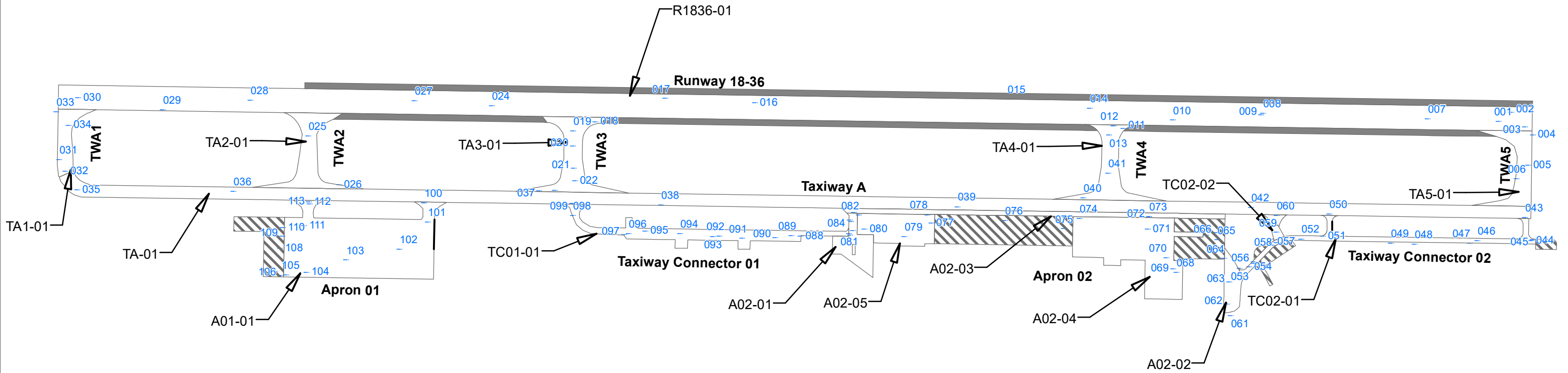
FOD Rating		
ENGINEER KP/MR	DATE May 2021	MAP NUMBER Page 9
REVISED JMA	SCALE 1 in = 400 ft	FINAL




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 Telephone: 217-586-2765 FAX: 217-586-1967

Legend

- Section Boundary
- PCC Aprons
- Shoulder or Other
- Survey Photo Locations






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Figure B2D








Survey Photo Locations

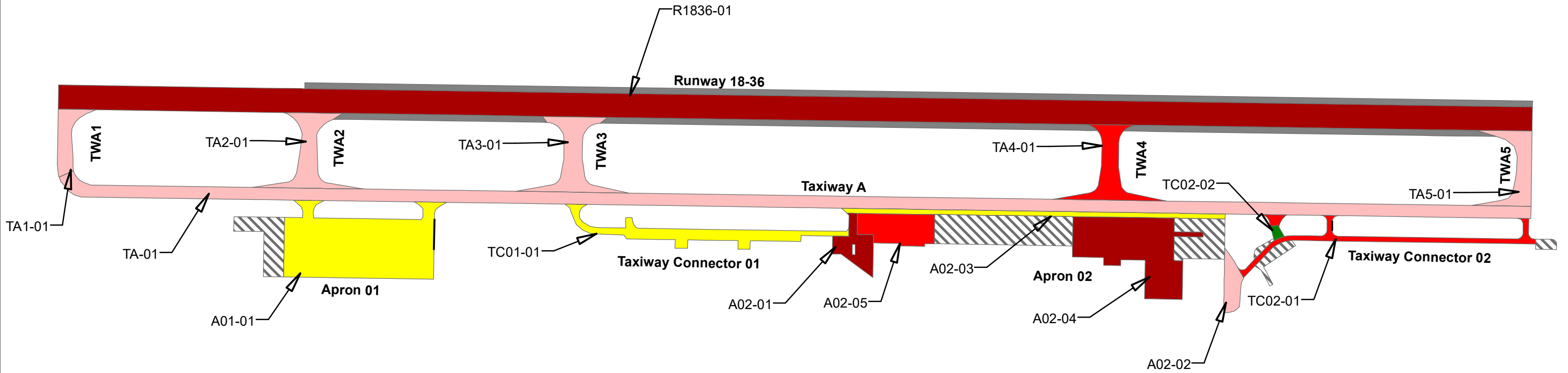
All About Pavements, Inc. (API) <small>www.allaboutpavements.com Telephone: 217-586-2765 FAX: 217-586-1967</small>	ENGINEER	DATE	MAP NUMBER
	KP/MR	May 2021	Page 10
REVISED	SCALE	FINAL	
JMA	1 in = 400 ft		

Legend

-  Section Boundary
-  PCC Aprons
-  Shoulder or Other

Forecasted PCI without PCIP

-  Good (86-100)
-  Satisfactory (71-85)
-  Fair (56-70)
-  Poor (41-55)
-  Very Poor (26-40)
-  Serious (11-25)
-  Failed (0-10)



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Figure B3A

2027 Forecasted PCI without PCIP

<p>All About Pavements, Inc. (API) <small>www.allaboutpavements.com Telephone: 217-586-2765 FAX: 217-586-1967</small></p>	ENGINEER KP/MR	DATE May 2021	MAP NUMBER Page 11
	REVISED JMA	SCALE 1 in = 400 ft	FINAL

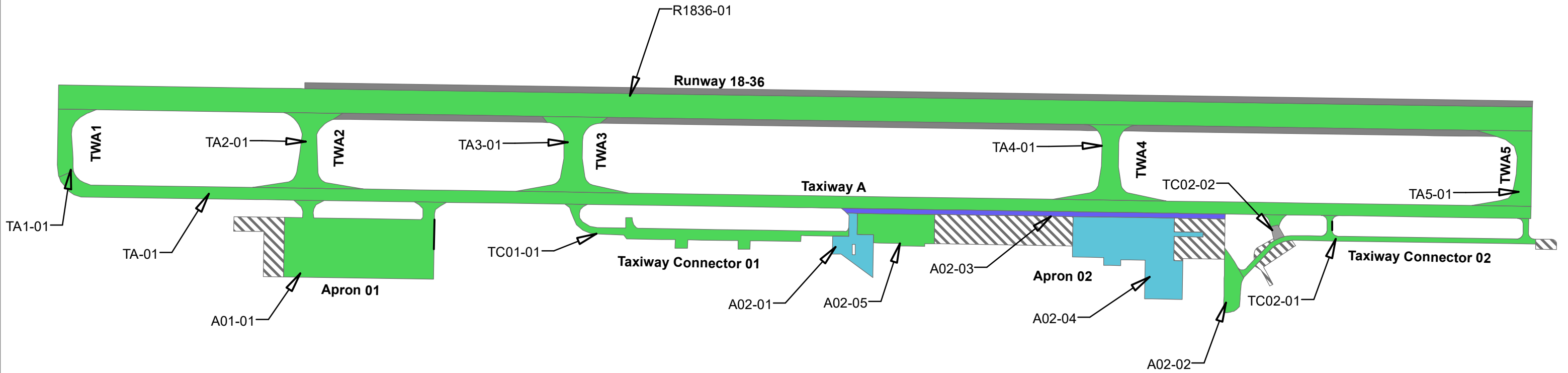
All sections recommended for Rehabilitation or Reconstruction between 2021 and 2024 also receive Surface Treatment in the 3rd year of paving.

Legend

- Section Boundary
- PCC Aprons
- Shoulder or Other

Repair Type

- No Activity
- Preservation
- Reconstruction
- Rehabilitation



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Decatur, AL**

Figure B3B

<p>All About Pavements, Inc. (API) <small>www.allaboutpavements.com Telephone: 217-586-2765 FAX: 217-586-1967</small></p>		Repair Type	
		ENGINEER KP/MR	DATE May 2021	MAP NUMBER Page 12
REVISED JMA	SCALE 1 in = 400 ft	FINAL	

All sections recommended for Mill & AC Overlay or AC Reconstruction between 2021 and 2024 also receive Surface Treatment in the 3rd year of paving

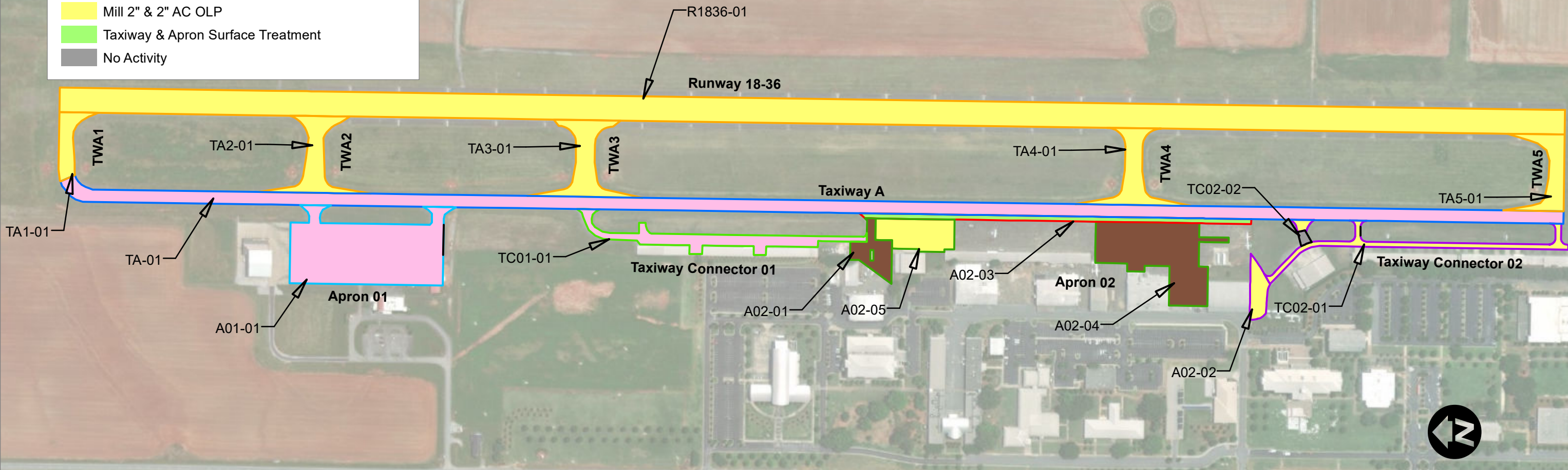
Legend

Project Name

- DCU_21-01_Taxiway Connector 01 Preservation
- DCU_22-01_Apron 02 Reconstruction
- DCU_24-01_Apron 01 Rehabilitation
- DCU_25-01_Runway 18-36 Rehabilitation
- DCU_25-02_Connector Taxiway 02 Rehabilitation
- DCU_26-01_Taxiway Connector 01 Rehabilitation
- DCU_26-02_Taxiway A Rehabilitation
- No Project

M&R Activity

- AC Reconstruction
- Mill 2" & 2" AC OL
- Mill 2" & 2" AC OLP
- Taxiway & Apron Surface Treatment
- No Activity



**Alabama Statewide
Pavement Management Program Update
Pryor Field Regional (DCU) Airport
Decatur, AL**

Figure B3C

PCIP Recommendations

All About Pavements, Inc. (API) <small>www.allaboutpavements.com Telephone: 217-586-2765 FAX: 217-586-1967</small>	ENGINEER	DATE	MAP NUMBER
	KP/MR	February 2022	Page 13
	REVISED	SCALE	
	JMA	1 in = 400 ft	FINAL

APPENDIX C

OVERVIEW OF PAVEMENT DISTRESSES



% 5~|| Ucf7fUWb| f57L

5~|| UcfVUWb| lgUg|YgcZ|HfVbBb| VUWgUgXvZ|| iYZ|ifYcZHY
Ug|UHfUWYg|fWk\YfYhg|Yg|Yg|Ug|Ug|g\|| \Ygi bWk\Y~cUg'HY
VUWgdcd|UfYc|hYg|fW|b|U|n|g|Ug|Ygc|Z|f|U|Y|VUWg'5ZfYUW
HfZ|WcU|h| hYVUWgVbWZ|fa| |'a|Ung|XZg|Uf|U| |'X|d|W|g|h|U|Y|Y|cd
Ud|U|b|n|g|a|V| |W|W|b|k| |Y|c|f|h|Y|g| |b|c|Z|U| || Ucf"HYd|Wg|U|Y|Y|g|h|U|&
Z|Y|h| |'c|h|Y|c| |Y|g|X"5~|| UcfVUWb| |c|W|g|c|b|n| |b|U|f|g|h|U|f|Y|g|V|U|X|c|'
f|Y|U|W|X|H|Z|W|c|U| |Z|g|W|g|k\Y' |d|h|g|Z|U|X|g|W|g|X|Y|X|U|a|U|c|f|g| |V|U|X|g|Y|g|'

Gj Yf|ng

- ◆ @k! aUWi dcZ|bz\Uf' | YUWg|i|b| |'d|f|U|Y|c| X|W|c|h|Y|k| |h| b|b|Y
c|f|c|b|n|U|Z|k| |H|f|V|b|B|b| |VUWg'HYVUWg|U|f|b|c|g|U|Y|X'
- ◆ A Y|a !: i|f|h|Y|X|Y|Y|c|d|a|Y|h|Z| | |H|U| |UcfVUWb| | |b|c|Ud|U|b|n|b|c|f
b|k|c|f| |c|Z|U|W|g|h|U|a|U|h|Y| | |h|g|U|Y|X|A|Y|a|!|g|j|Y| |h|U| |UcfVUWb|'
|g|X|b|X|v|U|k|Y|!|X|b|X|d|U|b|c|Z|H|f|V|b|B|b| |VUWg|k\Y|Y|U|'d|W|g|
U|Y|g|U|f|Y|m|Y|X| |b|d|U|W| |c|X|U| | |f| |U|Y| |h|c|W|W|k|Y|b|d|W|g|/
- ◆ <|| \! \Ug|d| |f|g|X|g| |h|U|h|Y|d|W|g|U|f|Y|k|Y|X|b|X|U|X|g|U|Y|X|U|h|Y|X|Y|g|'
G|a|Y|c|Z|h|Y|d|W|g|a|U|h|c|W|i|b|X|f|Z|W|b|X|a|U|h|U|g|: CS'd|b|U|'

FYU|fcd|cbg

- ◆ @k! BcU|b|z|g|f|W|g|U|c|f|g|Y|U|h|Z|f~ck|g|j|Y| |h|U|g|Y|g|/
- ◆ A Y|a ! d|f|U|c|Z ~X|h|d|U|W|g|Y|U|h|c|f|W|b|g| |W
- ◆ <|| \! d|f|U|c|Z ~X|h|d|U|W|g|Y|U|h|c|f|W|b|g| |W



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6 YXh | gU4 a cZVlia | bci ga UMj U' dbh Ydj Ya Vhg fAWh UANUg Ug | bñ
['Ug] YfZNM | g fAWhUi g U mVWA Ygi | Yg | Mh 6 YXh | gU gXVn
Y Wg | YUa ci bgc Zgd U | WWA Yhcf Rfg | bh Ya | | 'c`dk! Ufj c | XWbñ bñcf Vch"
-hcWAgk \ YUg | UH | gh Yj c | Xg Zh Ya | | Xfb | \ dk Yh YU Xh Yb Y d b Xg ci h
cbe h Yg fAWc Zh Ydj Ya Yh Qb W h Y V YXh | dc Wg | g b d i y Yg V Y X f | | W X
k Y h Y Zgd U hcf Rfk | ~ U W ai U Ycb h Yg fAW

**Gj Y | Hg Bc X | fYgc Zgj Y | hñ fY X | b X 6 YXh | 'g ci XW b d Xk \ Y | hg
Y | Hg | Y | hci [\ | c f X Wg | X | Hg | U W**

**FYUFD | Mg `Sc bch | | / g b X V d h Y X g | Hg X | f U h | d h | | \ U | H X c ~ `g b X
| b e h Y U f | g U Z N X | h V Y X | | z f a c j Y h Y | W g a U M | U / d U W**



3" 6cW7fUWb| 157L

6cWVWgUfY|bWbNEXWVghUfYj |XhYdj Ya YH|bc fWVH i UfgUdX
d|Wg" HYVcVga UfU| Y|bgrZca %An?Zc|c %6Vn?6ZVf'6cWVWVh| '
|gW|gXa U|bn|ng|fb U|YcZhYUg|U|H|WVYU|X|g|bd|c|U|K|g|c|V|W|X|H|Y
c|W|f|b|W|c|Z|c|W|V|W|V|h| i|g|U|n|b|X|U|V|g|h|U|h|Y|U|g|U|H|U|g|U|X|b|X|g|j|b|Z|U|h|f|'
6cWVWVh| b|c|a|U|n|c|W|V|g|j|Y|U|U|f|Y|d|c|d|f|b|c|Z|h|Y|d|j|Y|a|Y|H|f|N|Z|V|h|k|j|''
g|a|Y|a|Y|c|W|f|c|b|n|b|h|Y|c|b|l|Z|Z|W|V|Y|g|'

GjYf|ng

- ◆ @ck! X|b|X|V|n|W|V|g|h|U|f|Y|U|a|c|g|i| |h|n|g|U|Y|Z|V|h|g|h| b|c|Z|f|N| |b|c|V|N|E
X|a|U|Y|E|C|S|E|d|h|U|' |h|Z|' X|W|V|g|U|j|Y|?| |b|W|c|' Y|g|a| Y|b|k|X|h|Z|U|X
Z|' X|W|V|g|U|j|Y|Z|' Y|f|b|g|U|g|U|W|f|n|W|V|h|c|b|/
- ◆ A Y|a ! X|b|X|V|n|W|V|g|h|U|f|Y|a|c|X|U|Y|n|g|U|Y|X|g|a|Y: C|S|'d|h|U|E|Z
i|h|Z|' X|W|V|g|h|U|f|Y|U|a|c|g|i| |h|n|g|U|Y|Z|V|h|g|h|Y|U|a|Y|b|k|X|h| |f|U|f|
h|U|?| |b|W|c|Z|' X|W|V|g|h|U|f|Y|U|a|c|g|i| |h|n|g|U|Y|X|V|h|g|h|Y|Z|' Y|f|b|'
i|h|g|U|g|U|W|f|n|W|V|h|c|b|/
- ◆ <| | \ ! X|b|X|V|n|W|V|g|h|U|f|Y|g|j|Y|f|n|g|U|Y|Z|V|h|g|h| U|X|b|h|Y: C|S|'
d|h|U|U|'

FYUfD:V|ng

- ◆ @ck! B|c|U|f|c|b|/
- ◆ A Y|a ! g|U|W|V|g|U|d|h|n|f|Y|j|Y|U|c|Z|f|W|V|g|j|Z|W|c|f| Y|f|g|U|f|Z|h|U|X
c|j|Y|U|h|
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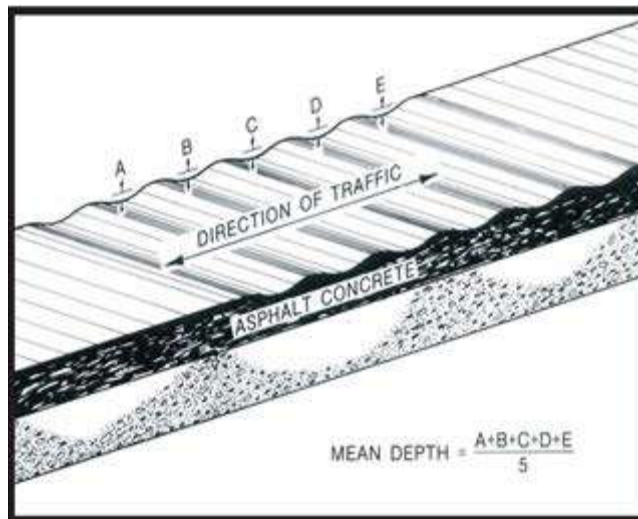
Corrugation

Description

Corrugation is a series of closely spaced ridges and valleys (ripples) occurring at fairly regular intervals, usually less than 5 feet (1.5 meters) along the pavement. The ridges are perpendicular to the traffic direction. Traffic action combined with an unstable pavement surface or base usually causes this type of distress.

Severity Levels

- @** Corrugation is a series of closely spaced ridges and valleys (ripples) occurring at fairly regular intervals, usually less than 5 feet (1.5 meters) along the pavement. The ridges are perpendicular to the traffic direction. Traffic action combined with an unstable pavement surface or base usually causes this type of distress.
- A** Corrugation is a series of closely spaced ridges and valleys (ripples) occurring at fairly regular intervals, usually less than 5 feet (1.5 meters) along the pavement. The ridges are perpendicular to the traffic direction. Traffic action combined with an unstable pavement surface or base usually causes this type of distress.
- <** Corrugation is a series of closely spaced ridges and valleys (ripples) occurring at fairly regular intervals, usually less than 5 feet (1.5 meters) along the pavement. The ridges are perpendicular to the traffic direction. Traffic action combined with an unstable pavement surface or base usually causes this type of distress.



)" SYFYgcbf57L

SYFYgcbfY'cW/nXdj Ya YHj fZWMfG'Uj H Yy Uhdgg|| \hmckYfhU' hcgYcZhYgffci bNj 'dj Ya YH-ba UnjhgUBWg' || \hSYFYgcbfYfch bclMVYi bH UZFUUbZk\ YdbbNj kUF'WUng'VEXUHI UNg'VIhY XfYgcbgWbUg' Y'cWPKjnci hfU'VWU'g'ZgU'g'WU'XVndbNj 'cZ kUF'SYFYgcbgWbVWU'g'XVng'Nia Ya YH'ZHYZi bNj'dbg'] cfWbVWU']h Xfj] Wbg' Vdb'SYFYgcbgWU'g'fci [\bg'U'Zk\ YZ' Yk'jh kUF'cZ g'Z'V'f'h'z'h'z'w' XW'g'\n'fcdUbj] cZU'V'Z'f'

GjYfng

- ◆ @k! SYFYgcbWbVcVg'j Y'c'c'W'X'V'ng'U'j'X'U'f'ng'cb'ng' || \hm U'X'V'gd'j Ya YH'f'Nj 'ei U'j'm'U'X'a'U'n'U'g'\n'fcdUbj 'd'f'N'U'd'b' fi'k'U'g'AU'jaia X'h'%' l'c'%'&'b'W'Z'f'fi'k'U'g'%'&'l'c'%'&'b'W'Z'f'U'j'k'U'g' U'X'U'd'f'g'
- ◆ A'W'ia! H'Y'X'f'Y'g'c'b'W'b'V'c'V'g'j Y'z'c'X'U'Y'n'Z'W'gd'j Ya YH'f'Nj ' ei U'j'm'U'X'W'g'g'\n'fcdUbj 'd'f'N'U'd'b'fi'k'U'g'AU'jaia X'h'%'&'l'c'%'&'b'W'Z'f'fi'k'U'g'%'&'l'c'%'&'b'W'Z'f'U'j'k'U'g'U'X'U'd'f'g'
- ◆ <|| \! H'Y'X'f'Y'g'c'b'W'b'V'f'N'j'nc'V'g'j Y'z'g'j Y'Y'n'Z'W'gd'j Ya YH'f'Nj ' ei U'j'm'U'X'W'g'g'X'U'j'Y'\n'fcdUbj 'd'f'N'U'/S'Y'h' [f'U'f'h'U'%'&'b'W'Z'f' fi'k'U'g'] f'U'f'h'U'%'&'b'W'Z'f'U'j'k'U'g'U'X'U'd'f'g'

FYUfDe'Vg

- ◆ @k! BcU'f'cb/
- ◆ A'W'ia! G'U'ck'z'd'f'U'f'Z'~'X'h'd'U'W'
- ◆ <|| \! G'U'ck'z'd'f'U'f'Z'~'X'h'd'U'W'



*" >Yi6Uj57L

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>Yi/UgMfgcbWigXf_YbXifNgcbhYdjYaYhijfZVMk\YbVhaJbcigVbXf
\UgVbVifbXcfWVchX~cUjXVi fbXifNg Uij UfjbXh i dle'
Uhd jaUYn%&|bWf%a|`jaYfg!

GjYfhi@jYg

BcXifYgZejYfhiYXfX-fggjZMfHcJbXUfhiYiYUgMfgcbYlg'



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8YgAd]cb

HlgYgYgcWAgdbnibbdj Ya Ylg\Uj]d UbUg\UicfRf g fAWcj YUD7'gU'
HlgWV] cfmKYgch]bWXYZMcbVWVh] Zca UnichYfhdYcZUgM] YZ
Va YhgW]hXZ]a YgW]hXZ]g WAWWgUY]gYX]g'ch]hX]bU'UXM]hg YgY
VWg'>chFYZMcbVWVh] 'lgU]gXa Ub'nina g] Ya YhcZhYD7'gU'Vb]h'
hY57'g fAWWV]gYcZhYa U'UXac]g]fYWU] Yg]h]gch]cUXFYUX'<ckY YZ
hZ]WcU]h] 'a U'U]gYU'fYXkbcZhY57b]f]hYVWV]f]g] h]]bgU]h] U'X
: CS'dd]h]U'=-ZhYdj Ya YhgZU]a YfXUd] U'WVzhYVW]g]j]X]e VY
gU'Y'5'_bck Y]YcZgU'Xa Yg]dgVb]h hY57'g fAWk]''\Ydle]X]h]n
hYgVWg'

GjY]h]@jYg

@ 7UWg\Uj Ycb]m] \h]gU]h] f]h]Yc]fbc: CS'dd]h]U'c]fbc'gU]h] U'XU'BY
Z'Y'cf]bch]Z'Y' =Zch]Z'Y'zhYVWg'\Uj YUa Ybk]h]cZ'f]]bWf]'
a]]a Y]g]c]f'Yg':]'YXW]g]f]YcZ]b]k]h]z]i]h]Y]f]Z'Y'a U]f]U]g]b'
g]h]g]W]f]m]b]h]b]'

A C]YcZhYZ`ck]h] Vb]h]dgY]lgg f]E]W]g]f]YacX]M]Y]ngU'Y]h]g]a Y: CS'
d]h]h]U'U'X]W]V]Y]h]Y]Z'Y'cf]bch]Z'Y'cZ]b]k]h]/h]E]Z'Y'X]W]g]f]Ybch]
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bch]Z'Y'X]W]g]f]Ybch]gU'Y'cf]Y]cb]m] \h]ngU'Y'X]V]h]h]Ya Y]b V]W
k]h]]g]f]U]h]h]U'f]]bWf]'a]]a Y]g]c]f]f]E] \h]f]U'Xa V]W]h] Y]lgg
b]f]h]YVW]c]f]U]h]YVb]f]cZ]h]g]W]h] V]Wg'

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'UxkbXfWfcb' H Yna UhVYU gXVm %UdcbmWbgs VxXdj |h "Uy'chz&
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WigXVmMWgVbUh hYg fAWXi fg' HUbj YgVWgY HbXUWghY
dj Ya YHbWHF|bYcf 'UxkbXfWfcbzUxa UhY
WigXVm|Yag&cf' EiggHxUvj Y'HYgHndgcZMWgUfYbchi gUmçX
fYUX

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- ◆ @k! \GjYfngYfa|bcfgU|h'cfbcgU|h"HYWUgVbVZ'Xcfih
Z'X'U'bz'XWUg\jYUaYbk|X'cZ%|bWcf'Yg': |'XWUgUfY
Ubk|X v|hYfZ'Y|g|b|g|g|UWfm|X|cb/
- ◆ A Wia ! dYcZhyZ`ck|h| Wb|hdgY|gg'%EMWgUfYacXUym
gdUYXUxUvVYhYfZ'XcfibZ'XczUbk|X/'&Z'XWUgUfYbchi
gdUYXcfdbm||\hngUYXZihYfZ'Y|g|b|g|g|UWfm|X|cb' Eih
Z'XWUgUfYbchiU'Xcfdbm||\hngUYXZihYUWk|X YWUg
%|bWcf(E||\HUXa WU|h| Y|g|b|g|g|UWfm|X|cb'zhY
HfG|h| WUg/
- ◆ <||\! gjYfngUYXk|h UX|h|H: C7d|h|U"HYmUvVYhYfZ'X
cfibZ'X'

FYUFD:MG

- ◆ @k! BcU|cb/
- ◆ A Wia ! gUWUg/
- ◆ <||\! gUWUgcfmZfa UZ'X'h'dUW'



9" Cj Gd UYB7L

Cj'gd'U Ylgh YXWjcdUj bcf gZbHj 'cZh Ydj Ya Yhg fZWWj gXVnhY
gd' H 'cZj ZYzcf ch Yfg'j Ylg'

Gj YlNg Bc Xj fYg'Zgj Yl mif YXWj bX' Hgg ZVbHc j bYUyhUic' gd' UY
Ylg'

FYUFD' MNg

- ◆ Scbchj /
- ◆ DffU'cfZ' Xh'dUW'



%8' DUWb]

FYUfDUWb] UXi f]mWidUWb]]gWbg]NYXUXZUWf]UfXYgcZckkY']h
dMzfa gcfk]gWbg]i WXX

Gj YfING

- ◆ @ck!]b[ccXWb]]cbUx]gdMzfa]h]g]h]g]m
- ◆ A Y]i a !]gga Yk\ UfNYf]cfUfXUfXUfZUfWf]]h]ei U]]m]c' ga Yf]f]h
- ◆ <]] \ !]gUfXm]]h]cfUfXUfXUfZUfWf]]h]ei U]]m]g]]h]f]h]m]cf\]g\] \ '
: C8'd]h]]U'

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- ◆ @ck! BcUf]cb/
- ◆ A Y]i a !]gUfWf]g]f]h]YX]g]f]g]g]]bh]YdUWcf]f]m]Uf]h]YdUW
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YHbXh]UvjYhYUg\UhgYhYjYnigaU'cfhYfYfbc'fi[\cfU]i'U
U[[fY\UYd]f]Wgle'dfj]X]ccXg]XfYg]bW'9]g]bWcZ]g]h]cZ]g]Yg]g
Ug]b]X]W]X]k\Yb]h]Y]i]a]V]f]cb]U]g]X]f]g]b]W]f]U]h]f]g]g]c]k]c]f]\U]X]c]d]X
g]h]b]Z]U]h]n]z]c]a]d]f]j]c]i]g]f]U]h]g'

GjY]h]e]y]Yg

BcX]f]Y]g]c]z]g]Y]h]n]f]Y]X]b]X]c]k]y]Y]z]h]Y]X]f]Y]c]z]c'lg]h]g]c]i]X]Y
g]h]b]Z]U]h]n]z]c]a]d]f]j]c]i]g]f]U]h]g]b]W]X]X]b]h]Y]W]b]h]c]b]g]f]j]Y]h]b]X]f]U]X]g]U]X]W]U



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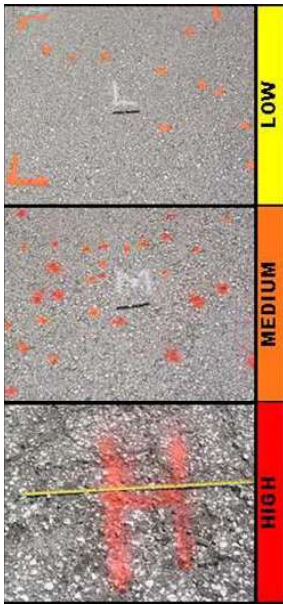
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d]W]ga]gg]"-ZbXi ViVi HUg] Y]m]YzhfYfYg]h] YfNgZ%gi UY
nFX]gi UYa YfLWg]ci XYYUa]bX]bXhYbi aVfcZa]gg] WUGY
U[fUUYdUfMw]bX'

@ck'gj Y]m]cW]g]Z]b]c]b]Yc]z]h]Yg]W]b]N]h]dg]Y] lgh fE:bUgi UYnFX]gi UY
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@ WkYb) Ux&'fEA]gg] U[fUUYWg]g]g]Yg]h]b]&M]V]h]c]z]h]Y
YUa]b]X]g]i UYnFX]gi UYa YfLWg]-b'ck'gj Y]m]j]Y]h]zh]Y]g]]h]Ycf
bc: CS'd]h]j]U'

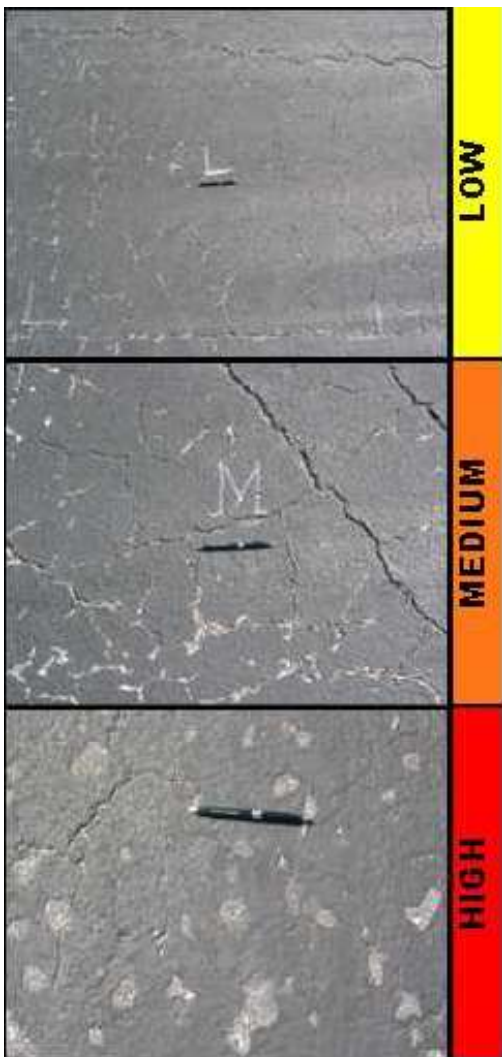
A Y]i a'gj Y]m]cW]g]Z]b]c]b]Yc]z]h]Yg]W]b]N]h]dg]Y] lgh fE:bUgi UYnFX
f]gi UYa YfLWg]g]h] YfLZhYbi aVfcZMUGYU[fUUYdUfMw]ga]gg]'
A]g]WkYb:&]b]X]'S' fEA]gg] U[fUUYWg]g]g]WkYb:&]b]X]'S'd]M]V]h]c]z]h]Y
h]Y]Ua]b]X]g]i UYnFX]gi UYa YfLWg]-ba Y]i a'gj Y]m]j]Y]h]zh]Y]g]
gaY: CS'd]h]j]U'

<]\ 'gj Y]m]cW]g]Z]b]c]b]Yc]z]h]Yg]W]b]N]h]dg]Y] lgh fE:bUgi UYnFX
f]gi UYa YfLWg]g]h] YfLZhYbi aVfcZMUGYU[fUUYdUfMw]ga]gg]'
<]g]Y(S' fEA]gg] U[fUUYWg]g]g]ac]f]h]b]'S'd]M]V]h]c]z]h]Y]Ua]b]X
g]i UYnFX]gi UYa YfLWg]-b']\ 'gj Y]m]j]Y]h]zh]Y]g]]h]Y]h] CS'
d]h]j]U'

BdY h]g]g]Ub]k]X]g]Y]g]g]b]W]h]Y]SS' g]f]Y]m



Gi ffr#7cUHfCjY8YgYAl GYfJh@Yg



@

fLHYgUyXlfUlg'YghU% dVfHfE-bhYWgCZAUrk\YYdUMB
VWWh \UgXjYcdXzhYgfZWWUgUfY'YghU%#]bWf'aaEk]X'

A

fLHYgUyXlfUlgVlkYb%UX'S dVfHfE-bhYWgCZAUrk\YY
dUMBVWWh \UgXjYcdXzhYWUgUfY%#]bWf'aaEk]Xcf[fUP'

<

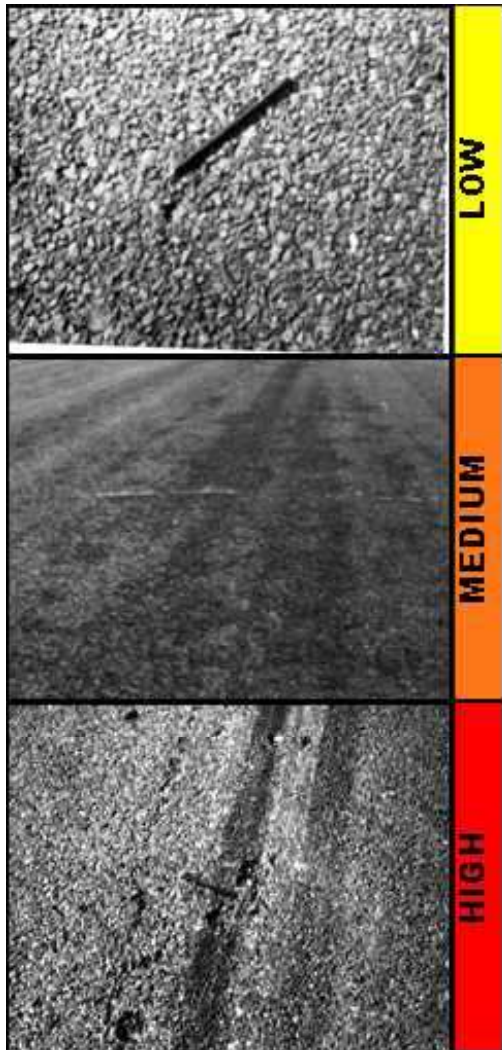
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dY]h 'cZ

Dfci g: f]Mkb7ci fgYGjYf]h>@jYg

@ =bU%gi UYZdfl#Sgi UYa YfYfYgHUIj YgadYhYbi aWfCZ
U[fYUYd]Wga]g]h]]gVlkYb) UxSSUX#cfhYbi aWfCZa]g]h]`
U[fYUYWg]f]g]Xg]h]i]VWX%

A =bU%gi UYZdfl#Sgi UYa YfYfYgHUIj YgadYhYbi aWfCZ
U[fYUYd]Wga]g]h]]gVlkYb]&UX(SUX#cfhYbi aWfCZa]g]h]`
U[fYUYWg]f]g]h]i]fYUfhU%ai]h]Xg]h]i]VWX& d]Wf]h]Z]h]YUfU

< =bU%gi UYZdfl#Sgi UYa YfYfYgHUIj YgadYhYbi aWfCZ
U[fYUYd]Wga]g]h]]g]Yf(SUX#cfhYbi aWfCZa]g]h] U[fYUYWg]f]g]h]i]fYUfhU%
]g]fYUfhU%& d]Wf]h]Z]h]YUfU



%" Fi Hh] 157L

5 fi hg Ug fZWXfYgcb]bhYk\Y'dh^\ckYVZ]ba Un]g]bWgfi lgUY
bc]MUYcbn]ZfUQb]U'k\YbhYk\Y'dhgUYZ`Yk]h kUM`Dj Ya Yh
id]Zia UicWfUch] hYgXgcZhYfi H'Fi Hh] g]hagZca Uda UbhXZcaU]cb
]bUicZhYdj Ya YhUmfcfg V![fUXZig Un]WgXV]Mhg`XU]bcf`UMU'
agj Ya YhcZhYa Un]UgX Yc]hZ]WdUg`Q[h]W]hi Hh] Wb`YXc'a Ucf
g]i WfUZ]i fycZhYdj Ya Yh

Gj Yf]g]UgXcbfi hXchL

- ◆ @ck! YghUb']bW]bXch/
- ◆ A Y]a! WkYb' Ux%]bW]bXch/
- ◆ <]]\! YW]g%]bW]bXch"

FYU]fcd]cbg

- ◆ @ck! BcU]cb/
- ◆ A Y]a! d]WU]bXcfj YU]h
- ◆ <]]\! d]WU]bXcfj YU]h



:]ifY7!."57Fi Hh]"

%"G|dd|Y7fUW|b| B57L

G|dd|Y7fUW|b| from the direction of traffic. They are produced when braking or turning wheels cause the **dj Ya Yhg fAWc:g|XUXXZfa"H|gi gUncWfkg\YhYYgUck:gN|h' g fAWa|| 'cf dcf VbXVWkYbhYg fAWUxb|hUf' cZdj Ya Yhg Vfy'**

Gj YfNg No degrees of severity are defined. It is sufficient to indicate that a slippage **VWY|g'**

FYUFD:Ng

- ◆ **Scbch|d|'**
- ◆ **Dff|U'cfZ`Xdh'dUW'**



: ||ifY7%\$ G|dd|Y7fUW|b|"

%" GkY]h] f57L

8Yg]d]b

5'gkY'lgWfUW]hXVn]bi dkUfXV' [Y]bhYdj Ya YH]g]fZW'5'gkY'aUn
cWf]g]fdn]ej YUgaU' fUcfUgUch] YZ]fUXUk]j Y9]hY]h]ncZgkY' WbWY
UWad]h]XVn]g]fZW]W]h]'5'gkY'lg]gUm]W]gXVn]Z]g]U]b]b]hY
g]V]fUXcfVn]gkY']h] g]Z]h]UgaU' gkY' WbUg]cWf]cbhYg]fZWcZ]b]g]d]Uh
g]Y]f]h]h]j YD7]H]g]U]g]]cZU]Vck! id]b]hYD7]g]U'

GjY]h]@jYg

GkY'lgWfYnj]lgVYU]X]Ug]Ua]hcf]ZW]cbhYdj Ya YH]g]f]X]ei U]h]m]g]
X]h]fa]b]X]U]h]Y]b]c]fa U]U]V]Z]g]h]X]Z]f]h]Y]d]j Ya Y]h]g]U]b]i b]X]
@ W]h]g]X]U]b]'f]d]k!g]j Y]h]n]g]k]Y' ga U]h]ch]U]k]U]g]V]c]V]g]j U]V]Z]i]h]Y]f]
Y]lg]b]W]b]V]W]b]fa X]V]n]g]j]h] U]j X]W]g]Y]h]Y]g]U]b]U]h]Y]b]c]fa U'
U]V]Z]g]h]X]5]bi dkUfX]U]W]U]b]k]]cWf]Z]h]Y]g]k]Y']g]d]f]g]h]!

GkY' WbV]c]V]g]j Y]k]h]c]i h]Z]V]h]m]b]X]U]g]U]g]]h]Z]V]h]ZW]cbhY
A dj Ya YH]g]f]X]ei U]h]m]g]X]h]fa]b]X]U]h]Y]b]c]fa U]U]V]Z]g]h]X]Z]f]h]Y]d]j Ya Y]h]
g]U]b]i b]X]W]h]g]X]U]b]'

GkY' WbV]f]D]nc]V]g]j Y]X]h]X]g]j Y]Y]n]Z]V]h]h]Y]d]j Ya YH]g]f]X]ei U]h]m]h]Y
< b]c]fa U]U]V]Z]g]h]X]Z]f]h]Y]d]j Ya Y]h]g]U]b]i b]X]W]h]g]X]U]b]'



%"KXhY[h] 157L

8Yg[d]db

H YkY[h] UkUicZhYUg[UH]bXfUXZbYU[fY UYa Uq] Zca hYdj Ya Yh
g fAW

GjY[h]e@jYg

5gkUhg fAWW[h]b[h] le'g'ck'g[h]gcZU[h] k\jWaUuYUWYUUXVn
V\auUWbY[h]dg' @cg[h]YZbYU[fY UYa Uq] l'gd[MVYU]XaUuY
@ UW\ad[h]XVnZ[h] cZhYUg[UH]c" 9N Yg'cZhYUgYU[fY UYgUfY
V[h]b[h] le VYIdgXfNg[h]U\$) jWYgcf%aaE' Dj Ya YhaUuY
fYUj Ynbk f[h]bk Ug* 'ad[h]gc'X!

A @cg'cZbYU[fY UYa Uq] l'gd[MVYU]XaYg'cZMgYU[fY UY\jYVb'
YIdgXi dlc%# k]X hZHYch Yg'gX'cZhYUgYU[fY UYX Yc hYcg'
cZbYU[fY UYa Uq] "

< 9N Yg'cZMgYU[fY UY\jYVb'YIdgX[fY UYhU]b%# k]X hZHYch Yg'
gX'cZhYUgYU[fY UYH YfYg'Wg'XU]VYcg'cZbYU[fY UYa Uq]
Y[h] le'cd[h]U'cf ga Ycg'cZMgYU[fY UY'



%" 6dk!I d!D77L

8YgAd!db

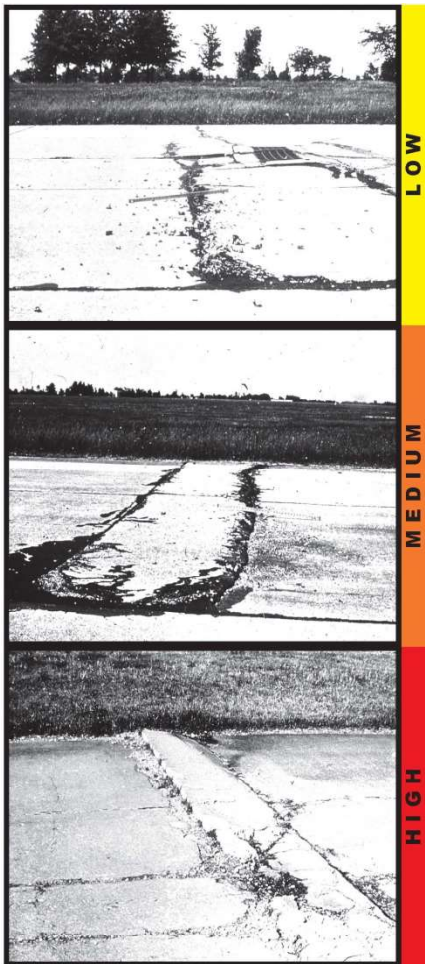
6'dki dg'cWf' b\dkYhYzi gUmHUMhg YgVWcf'cHhUhgdk|X
Yci [\ lc'dMa]hI dUgdbVihYWBWYgUG'H Y|hgZVWk|Xh lgi gUm
WigXVrhZfU|bcZ|WadYg|VYaUm|Ug|bc hY'c|hg|WK\ bY dUgdb'
WbchfY|Y Yci [\ dYg|fZU'cW|nXi dk|fXag Ya Yh|ZhYgUVX'Yg'
fi W|h|Ecf gUM|h| k|'cWf' bhYj |W|nicZhY'c|h|6'dki dg'WbUgc'cWf'Uh
i|f|h|n|Wg|U'X|U|Y|b|Yg'H|g|h|c|Z|N|g|g|g|Ua|c|U|k|U|g|f|U|f|X
|aa|Y|U|Y|m|W|W|g|c|Z|g|Y|X|a|U|Y|c|h|h|U|c|U|W|Z|I|6'dki dg'U|Y|W|X|X|Z|f
f|Z|f|W|k|\ b|W|g|X|g|U|g|f|Y|W|h| 'Y|U|U|X|Z|f|f|X|c|h|h|''

GjYf|h|e|jYg

@ 6i W|h| 'cf gUM|h| \Ug|b|f|W|X|h|Yd|j Ya Yh|bcdMUj YZ|X|c|b|n|Ug|| \h
l|a|c|h|c|Z|i [\ b|g|Y|g|g'

A 6i W|h| 'cf gUM|h| \Ug|b|f|W|X|h|Yd|j Ya Yh|bcdMUj YZ|H|U|g| |h|Z|W|h
l|a|c|h|c|Z|i [\ b|g|Y|g|g'

< 6i W|h| 'cf gUM|h| \Ug|b|f|W|X|h|Yd|j Ya Yh|bcdMUj Y'



%! 7cbf6fU_gfD77L

5 WbfVU_lgUWWhUfhgNghY'chgUUXgUWYghUbcfYiUlc'cbY
\UzhYgUVY[h'cbVch'gXgaYgjfXZca hYWbf'chYgU': cfYUadYZU
gUkjh Xa YgdcgZ& Vri& ZfhUhgUWWhUfhgNgh hY'cbh) ZfhZca`
hYWbf'cb'YgYUX% ZYidbhYchY'gW'g'dh'gXfXUWbfVU/'hg
UXU'cbUWU' <ckY YZUWWhUfhgNgh+ ZYidbhYgYUX%SZYidbhY
chY'gW'gXfXUWbfVU" 5 WbfVU_XZfgZca UWbf'gU'bhUHY
WUWYh'g'j VU'mh'ci [\ hYhYgUVh]Wbggk\]YUWbf'gU'fhgNgh
hY'chUhbU' Y'@cXfYh]cbWa VbXkjh`cg'cg'db'f'f'XW'f'h' g'ggg'
igUmU'gWbfVU_g'

GjYfHg

- ◆ @ck! 7UW\lgYhY'bc'gU'h' 'cfa'bcfgU'h' fbcZfY[b'cVWNaU'Y
f'CSf'd'f'f'U'Z'cb'filled, it has a mean width less than approximately 1 #'
inch (3 millimeters); a filled crack can be of any width, but the filler material
a'g'W'j'g'g'U'W'f'n'W'X'h'cb'f'Y'U'f'U'W'k'Y'b'h'Y'W'bf'V'U' U'X'h'Y'
^'cb'g'g'g'cb'W'W'X'
- ◆ A'W'ia! One of the following conditions exists: (1) filled or non!filled c'f'U'W'g'
a'c'X'f'U'ng'U'X'h'ga'Y: CS'd'f'f'f'U'f'f'U'cb'filled crack has a mean
width between 1/8 inch (3 millimeters) and 1 inch (25 millimeters); (3) a filled
crack is not spalled or only lightly spalled, but the filler is in unsatisfactory
W'X'h'cb'f'f'f'Y'U'f'U'W'k'Y'b'h'Y'W'bf'V'U' U'X'h'Y'cb'g'g'g'[\ h'n'W'W'X'
k'h'`cc'Y'c'f'a'gg'h'`d'f'f'W'g'
- ◆ <f'f'! One of the following conditions exists: (1) filled or non!filled crack is
severely spalled, causing definite FOD potential; (2) a non!filled crack ha'g'U'
a'U'bk'X'h' [f'U'f'f'U'U'hd'ja'U'Y'm'f'W'f'f') 'a']`ja'Y'g'Z'W'U'h' U'h'Y'
X'a'U'Y'd'f'f'f'U'/'c'f'f'f'Y'U'f'U'W'k'Y'b'h'Y'W'bf'V'U' U'X'h'Y'cb'g'g'g'
g'g'Y'Y'm'W'W'X'

FYU'f'cd'f'g

- ◆ @ck! Bc'U'W'bc'f'g'U'W'W'g'
- ◆ A'W'ia! g'U'W'W'g'
- ◆ <f'f'! g'U'W'W'g'U'f'h'U'Z'`
c'f'f'f'U'W'h'Y'g'U'



X'h'd'W

: f'f'Y'7%'D'77'7'cb'f'6'f'U''

%" 7fUWg"@cb|JiXpUZHFUbgYgYUbxS|UcbU'D77L

H YgVWwGxj |XhYgU|bc lkc'cfhfYd|WgZUXIfYigUmWgXVhU
WáVhU|bcZcdXfYh|cbZf|h'gYgZUXgfb_UYgYgG"@ck'gYVlnh
VWgUfYbdhWgXfXaUcfgiVfUXgYgG'A Yfi a'cf||\gYVlnWwGufY
igUnkcf|h|VWgUxIfYWgXfXaUcfgiVfUXgYgG'

GjYfng

- ◆ @ck!%i hZ`YXWwG%#|bWlc%&|bWk|Xk|h bcZi |h|'cf gU|h|/E
VWwG'YghU%&|bWk|Xk|h`ck'gYVlnhU|h|/cf'EZ`YXWwGcZ
Unk|Xk|h ZfYcfZfa|h| |bUgU|VfinaUbfUx|bcZi |h|'cf
gU|h|/
- ◆ A Yfi a'!%i hZ`YXWwGVkYb%&lc%|bWk|Xk|h bcZi |h|'cf
gU|h|'cf&Z`YXWwGcZUnk|Xk|h Zi |h|`YghU%#|bWcf a Yfi a'
gYVlnhU|h|/
- ◆ <||\!%i hZ`YXWwGk|h Uk|h |fYfYhU%|bW&e i hZ`YXWwGcZ
Unk|Xk|h Zi |h| |fYfYhU%&|bWcf a Yfi a'gYVlnhZi |h|/cf'E
Z`YXWwGcZUnk|Xk|h Zi |h| |fYfYhU%&|bWcf||\gYVlnhZi |h|"

FYUfcdhbg

- ◆ @ck!BcU|b'cf gU VwWg/
- ◆ A Yfi a'!gU VwWg/
- ◆ <||\!gU VwWgZUdmUZ`Xh'dUWcfYfUWhYgU'



: ||ifY7%&'D77HÜjYgY7fUWg'

§' Si fUj]m7fUWgID77L

8YgAdjb

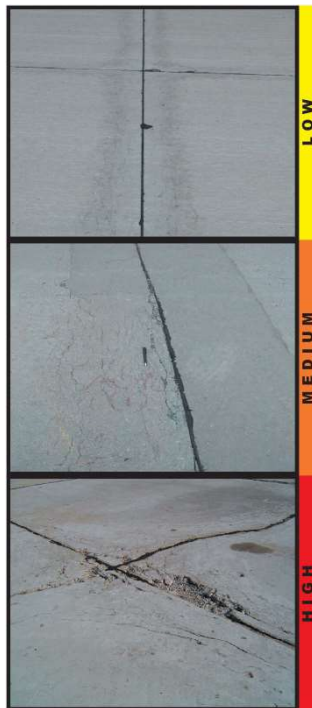
Si fUj]m7fUWg]gWgXVnhYbU]m7cZhYWBWYk]hgUXj]fdaYbU' ZWfggWgZYYhukVWg'-fi gUnldNfgUdUMB'cZMwgi bhd' parallel to a joint or linear crack. A dark coloring can usually be seen around the fine XfUj]m7fUWg'Hlgm7cZMwgd'aUnjYbUm7XlcXghN]fulbcZhY WBWYk]hb'c'SZYfSSle*SSa]`jaYgicZhY^chcfWw'

GjY]m7Yg

@ ÍSÍ Ww]d \lgXjYodXgYfUWg]MUYLa ci hZgWfNuk]h`]m7cf bcXghN]fulbcf: CS'dhN]U' cfÍSÍ Ww]d \lgWfYX]bU]ja]X fNucZhYgUzgWg]bcYcfkcbWgcfUch'cb'ch'Vih]WgUY a]gh]UXXghN]fulcb\lgWfYX'GaY: CS'dhN]U'

A ÍSÍ Ww]d \lgXjYodXgYfUWg]MUYLa ci hZgWfNuk]h`]m7cf bcXghN]fulbcf: CS'dhN]U' cfÍSÍ Ww]d \lgWfYX]bU]ja]X fNucZhYgUzgWg]bcYcfkcbWgcfUch'cb'ch'Vih]WgUY a]gh]UXXghN]fulcb\lgWfYX'GaY: CS'dhN]U'

< ÍSÍ Ww]d \lgXjYodXgYfUWg]MUYLa ci hZgWfNuk]h` XghN]fulbcZ: CS'dhN]U'



8% >chhGU'SUa U YD7L

>chhGU'SUa U YgUmWbNjdbzk\|WYbUVgg|'cfcVgk UWai 'UYbhY^chh
cfUck'g|hZUHbZ|U|bcZkUP''5Wai 'U|bcZ|WadYgVYaUM|Uglb'
hY^chhY YghYgUVZca YdbNj| UxAtinGj hbVW|qzg UM|qzcf
gU|h|"D|UVY^chh' YVbWkchYX YgZhYgUgdchWg^chhZca hY
UWai 'U|bcZaUM|UgUXUg'cfY YhgkUfZca gX|h' XkbUXgZ|h| hY
Zi bX|dbj dbf|h| hYgV' Hd|W|ndgZ^chhGU'SUa U YUfY'%g|dd|h| hY
'chhGU'SUa U gbcZ^chhGU'SUa U' HkYX|fckh/(E\UX|h| 'cZHYZ'Y')E
'cgZcbXkchYgUVX Yg Ux* EUWcfUgWcZgU|h|bhY^chh

Gj Yfng

- ◆ @ck ! |b| YbU n|ccXWbNjdbhfc| [\ci hYgW|db" GUUHgdMZfa |h' kY k|h' dbnUa |bcfUa ci bicZUncZhYUj YndgZLa U YdYg|h
- ◆ A W|a ! |b| YbU n|UfVbNjdbhfc| [\ci hYgW|dbzk|h' dbYcfacfYcZ UbcZhYUj YndgZLa U YdYg|h'cWff|h| |c UacXUUYX|fY" GUUHbXg|aa YUUYfUWa Yhkh|b&n|fg/
- ◆ <||\ ! |b| YbU n|bcfVbNjdbhfc| [\ci hYgW|dbzk|h' dbYcfacfYcZ UbcZhYUj YndgZLa U YgYg|h'cWff|h| |c Ugj YX|fY" GUUH bXg|aa YUUYfUWa Yh

FYUfcd|cbg

- ◆ @ck ! Bc U|cb/
- ◆ A W|a ! gU^chh
- ◆ <||\ ! gU^chh



: ||ifY7% 'D7 >chhGU'SUa U Y'

88! GaU DUWID77L

5' dUWlgUbUk\ YfhYcfll jBU'dj Ya Yh
has been removed and replaced by a filler

aUfjU': cfWbXjcbY U UjcbzdUWj lg'
Xj jXXjhc lkc lndg' gaU fngghU) 'gei UfY
ZNLUXUf Yfj Y) 'gei UfYZNL'@uf YdUWg'
UfYXgUfVXjbhYbl hgXjcb'

Gj Yfng:

- ◆ @k! DUWlgZbUjcbj kY'zkjh'
'jhiYcfbcXfjcfUjcb/
- ◆ A Yjia ! DUW\UgXfjcfUfXZbXf
acXfUfYgdU'j WbVYgXbUfcbXhY
YfYg'DUWa UfjU WbVYg'cX'Yz
kjh WbgXfUfYfZfifh jcf: C8'
dnhjUz/
- ◆ <ll\! DUW\UgXfjcfUfXZbXhYfVn
gdU'j UfcbXhYdUWcfWUWj'
kjhjbhYdUWz'c UgUfYk\ jWkUfUhg
fYUWa Yh

FYUfcdjcbg

- ◆ @k ÈScBchj/
- ◆ A Yjia ! FYUWdUWcfFYUWY
gU'
- ◆ <ll\ ÈFYUWdUWcfFYUWYgU'



: llif7% 'D77 GaU DUW'

&" @U[YDUWID77L

Patching is the same as defined **ZfUgaU`dUW`
 \ckYVzhYufUcZhYdUWlgacfyhUb) 'gi UY
 ZN15 i f]mWlgUdUWhUgfyUWkhY
 cf] jU'dj Ya YHMMgycZdUWa YhcZ
 i bXf ci bXi f]jNg'HYgj Ylmj YgcZLi f]m
 WlfYhYga YghcgYZffYi U'dUWj."**

GjYfng

- ◆ @ck? DUWlgZbUjcb] kY`zkjh `jhycf
bcXNfcdUjcb/
- ◆ A Yjia ! DUW\UgXNfcdUWZbXf
acXUygU]h VbVYgYbUci bXhY
YX'YgDUWa UqJU VbVYgX'Yzkjh`
WbgXUUYZcfih jcf: CS'dNHU/
- ◆ < j\ ! DUW\UgXNfcdUWZyhYVn
gdU]h Uci bXhYdUWcfVW]h k]hjb'
hYdUWZc UgUMk\jWkUffUg'
fyUWa Yh

FYUfcdhbg

- ◆ @ck E8cBch]h /
- ◆ A Yjia ! FYUWdUWcfFYUWWhYgU'
- ◆ < j\ E'FYUWdUWcfFYUWWhYgU'



: j]ifY7% `D77 @U[YDUW'

&" Dddi lgiD77L

5' dddi HgUga U' dJWcZdj Ya YHhUMFU_g`cogYZca hYg fZWX Ylc ZYH
hUk UWcbJbWa VbUcbkjh Y ddbj YU [fY UHg' Dddi lgi g UnfUj YZca`
Uddid ja UYnfbWlc(JbWYgbXLa YfUbxZca %&JbWlc &JbWgXsd"

Gj YHNg

No degrees of severity are defined for popouts. <ckY Yzddi lgaig hYV Hgij Y
VZfYh YnfyW hXUg UYg JYg' YZj YU Yddi hXghiaig hVWX
Uddid ja UYnfbYddi lgidf gi UYnfbXg YhYHjYgUVfU



: ||ifY7%. 'Dddi lgi'

&" Dadh ID77L

8YAdhb

**Dadh lghYYMbcZaUhfUvkUfhci [\ `chgdVWgWigXVhWZMcb`
cZhYgWi bWfdigh `cXg'5ghYkUf'lgYWXZ]hMfYgdffWgcZ] fJ YzghZ
WncfgHbXyj lgbUdc fYgj YcgicZdj Ya Yhg ddbHG fAWgUhh Ux
VgYcf gV fUYaUhfU'cbhYdj Ya YhVgYc `chgdVWgUfYy]XbWcZ
dadh'Dadh bMf`chgbXWgdcb'chgnUYUx'cgicZj ddbfk\]Wk]'`
`YXlcVWWh i bWfYXUX'cXg'**

GjYfm@jYg

BcX]fYgcZg] YfmfXWbX'fjggZMhlc]bXUfhUdadh Ylgg'



&" GUVh ID77L

**AUVWVh 'cfVUth fYZfgUbkcf 'czgUdczZbZcf\UFjBYVWghU
YfXcbnhfi [\ hYiddf g fZWCzhYWBWYHYVWgN6Xc]bMgNth
Uj 'YgZ/8\$X|fyg'AUVWVh 'cfVUth |lgjUmWgXVnj YZhg |hY
WBWYUxAltXk:GUh 'czYgfZWK\|W|ghYVU_XkbcZhYgU
g fZWC UXd of approximately 1/4 to 1/2 in W'GUh 'aUthg VVWgXVn
|adcfWgh VcbUXdcfU|f|UY'5bchYfW|bhXgi fWcZgdYgghY
fU|bVWkYbhYU_U|gBUcUx? &E|bga YW YlgUXWUba |bUglb
ga YU|f|Ug'DcXVZfa YVnhYVU|bVWkYbhYU_U|gUXU|f|UY
fg |bYd|gcbghUWgYUVU_Xkb|bhYWBWY'**

GjYHNg

- ◆ @k! 7Uth 'cfAUVWVh Ylggj Yg|bZVWghUVfUHYg fZW|gb
|ccXWV|cbk|hbc:GUh 'HYVWdUmbaig|WkY X|bXUx
Yg|n|W|bhX
- ◆ AYia ! GUVggVXkj YUdd |aUym)1 'cf'YgczhYgfZWK|h'gaY
: CS'dh|U/
- ◆ <||\! GUVggj YYngVYXWgh U||\: CS'dh|U'1 gUmācfYhU
)1 'czYgfZW|gUWEX



&": U 1h 1D77L

**GhYa Yhcf Zi 1h 1g UXZZYbWcZYj UjbUu'cjhcf VUWUg XVnid YjU
cf Vhg' jUjcb'**

Gj Ylbg

Severity levels are defined by the difference in elevation across the fault and the
Ugc VUXWUg Ybf Xei UjmbXg Zm lggj Ylm jWUg g'

	Fi bkUng#U jkUng	5dfbg
@	0% jW	% E% jW
A	% E% jW	% jW
<	2% jW	2% jW

FYUfCd hbg

- ◆ @k! Bc Ujcb'
- ◆ A Yia E; fbnh Uch hY'chh
- ◆ < j\ E; fbnh 'cf' chid XlUg Zfyg fUjcb'



&" G UMFYXGUVFD77L

=hfgNMh VUWgUYVUWghUMFU]hcZifcfacydWgVWU gczj YcUjh' UxwfhDSgiUYgdhffHY\| \!severity level of this distress type, as defined below, lghZffXlc UgUg UMFYXgU'ZU`dWgcfVUWgUYWdUjbxkjh bUWbf VUZhYXgUgUgVWU]cfhXUgUgY YWbfVU"

Gj YfHg

- ◆ **@k! Slab is broken into four or five pieces with the vast majority of the cracks fjh Y,) dWVhZck!gj Yfhn**
- ◆ **AWja !(1) Slab is broken into four or five pieces with over 15 percent of the VUWgZaWja gj Yfhn\| \!gj YfhnVUWg/cffgU]gVc_Y]hc'gl' cfacydWgkjh'gj Y,) dWVhZhYVUWgZck! /**
- ◆ **<|\! 5hlg^Y Y'Zgj YfhnYgU]gWYXg UMFYfHgU]gVc_Y]hc' four or five pieces with some or all of the cracks of high severity; (2) slab is Vc_Y]hc'gl' cfacydWgkjh'gj Y%) dWVhZhYVUWgZaWja! cf \|\!gj Yfhn**

FYUfcdhbg

- ◆ **@k EGU'7UWg/**
- ◆ **AWja !: i`Xdh dUWcffYUWhYgU'**
- ◆ **<|\!: i`Xdh dUWcffYUWhYgU'**



&" Gfb_ qY7fOWfD77L

Gfb_ qY7fOWfD77L
YHfYgU'HYZfa XXfj hYgU' UxWj 'zHY
WfYUxig Unk'bdNfXfci [\ hYXh 'zHYgU'

GjYfng

No degrees of severity are defined. It is sufficient to indicate that shrinkage cracks exist.

FYUfcdhbg

- ◆ **8cBchj**



''

' \$' >chGdUgfD77L

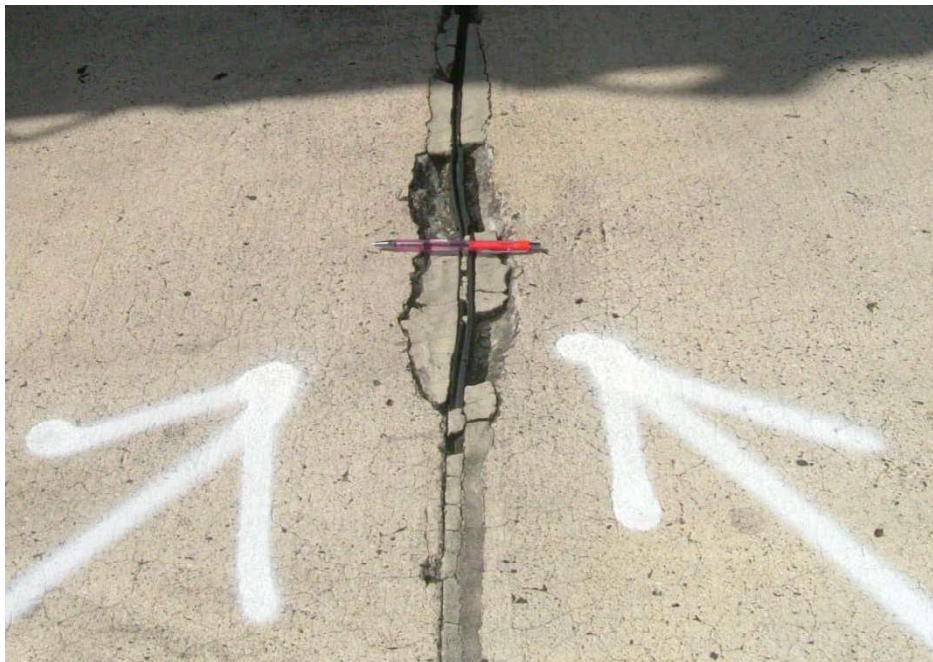
>chigU'h lghYXghN fU'bcZhYgUVX Ygkjh b&ZYh'ZhYgXyZHY'chH'
5'chigU i gUmXygdhN hXj YhU'nhci [\ hYgUzV hHhGhY'chHh
UbU' Y'GU'h' f'g' l'Zca YWg'j YgYg'gU'hY'chH'WU'gXV'h'f'f'f'f'
cZ'W'ad'f'g'VYaU'h'U'g'f'f'f'f'W'U'g' K'Y'U' W'W'Y'U'hY'chH'W'gXV'h
cj Ykcf_h'f'EWa VbXk'h'f'f'f'f'W'U'g'g'U'chY'W'g'Y'c'Z'g'U'h''

Gj YhNg

- ◆ @k! gj Y&ZYh'ch' UxlgVc_Y]hc'bc'acfyhUbhfYd]Wg'X]bXV'h
'ck'cfa Y]a' gj Y]h'W'W'g'k'h' \]h'Y'cf'bc': CS'dh]U'zcf'g&'Y'ghU'
&ZYh'ch' UxlgVc_Y]hc'bc'acfyhUbhfYd]W'g'k'h' \]h': CS'cf]Y
XaU'Y'dh]U'/
- ◆ A Y]a! gj Y&ZYh'ch' UxlgVc_Y]hc'bc'acfyhUb' 'd]W'g'X]bXV'h' \]h'
cfa Y]a W'W'g'cf'ga Y: CS'dh]U'Y']h'zcf'g&'Y'ghU'&ZYh'ch' '
UxlgVc_Y]hc' d]W'g'cf'Z]a Y]h'X'k'h' ga YcZhYd]W'g'cg'Y'cf'U'gh'z'
W'gh' W'gh'X]V'Y: CS'cf]Y'XaU'Y'dh]U'/
- ◆ <]!\! gj Y&ZYh'ch' UxlgVc_Y]hc'bc'acfyhUbhfYd]W'g'X]bXV'h'cbY
cf'acY \]h' gj Y]h'W'W'g'k'h' \]h': CS'dh]U'

FYUfCd]bg

- ◆ @k! BcU]cb/
- ◆ A Y]a! d]Z'fa Udh]U'X'h'dUW
- ◆ <]!\! d]Z'fa Udh]U'X'h'dUW'



'% 7cbfGdUgd77L

7cbfGdUd lghYfYH'cfVfUXkbcZhYgUkjh]bUdIdJaUyn&ZncZ
hYwbf"5 wbfGdU XZNgZca UwbYfVU]bhUHfgU UH'YgXkdkUX
lc]bfgNHY^]hk\]YhYVU_ YfNgj YfU nhci [\ hYgU'

GjYfNg

- ◆ @k! YhY%hYgU'lgMc_Yb]bc'dYcfkcd]WgX]bXVnck'gjYfhn
VWgkjh`j]Ycfbc: CS'ddHfU/cf&hYgU'lgX]bXVnckYaYfja'
gjYfhnVWgkjh`j]Ycfbc: CS'ddHfU/
- ◆ AYfja È%hYgU'lgMc_Yb]bc'kcd'afYd]WgX]bXVnckYaYfja'
gjYfhnVWgkjh`j]Ycfbc: CS'ddHfU/cf&hYgU'lgX]bXVnckYaYfja'
gjYfhnVWgkjh`j]Ycfbc: CS'ddHfU/cf&hYgU'lgX]bXVnckYaYfja'
gjYfhnVWgkjh`j]Ycfbc: CS'ddHfU/cf&hYgU'lgX]bXVnckYaYfja'
gjYfhnVWgkjh`j]Ycfbc: CS'ddHfU/cf&hYgU'lgX]bXVnckYaYfja'
- ◆ <||È%hYgU'lgMc_Yb]bc'kcd'afYd]WgX]bXVnckYaYfja'
gjYfhnVWgkjh`j]Ycfbc: CS'ddHfU/cf&hYgU'lgX]bXVnckYaYfja'
gjYfhnVWgkjh`j]Ycfbc: CS'ddHfU/cf&hYgU'lgX]bXVnckYaYfja'

FYUfCdHbg

- ◆ @k! BcUfcb/
- ◆ AYfja! dffUXh'dUW
- ◆ <||! dffUXh'dUW



' &'5GF 'ID77L

5GF 'lgWU gXVhWwWw JW'fUWfcbVWkYbU_UlgUkXWUfcbfUWUj Yg'JWa JbMUG
k\JWZfa U|Y' HY|YUgcfVgkUfZUg gh' Y dHgdbk\JWa UnNa UYhY
WbWfYUkXUWfHgi WfYg' 5`_UgUfYacgicZb'JfcXVWVnhYcbfUk
Ww YHkjh|bhYdj Ya YH' 5GF 'WUW|' a UnYUWYUfXVhWwWw JW'dj Ya YH
X|Wg'

JlgU|bXWUfghU5GF'a UnYdYgHh|bWXY'

% 7UW|' cZhYWbWfYdj Ya YHfZb|bUa UfdUMbL

& K\|fZVfckb|fUfchYfWcfX|Y'cfgh|b|' a UnYdYgHhUfYUW
g'fW

" 5|[fYUfddi|g

(" bWUg|bWbWfYj'c|a YfU dHgdb|hUa UnfYg' |bXgdf|bcZkXUWf'c
|h|fU'g| WfYgcf'ang|WUYa Ylg'9|UadYg'Z|dHgdb|bWXYg'c|' cZ
UgUhdj Ya Ylg'|\hWb|b|'zgUvZi |h|z'c|b|a|gU||ba YfZUkXU|f'gbcZ
'c|h|gUgcf'Y dHgdb'c|h|'Yg'

6WU g'5GF 'ga Uf|U'XVhWwWw5GF 'gl' YbU'ndYgHhfc| |\c|hYdj Ya Yh
gW|b' 7cf| UxWbWfYcNf|fU|JWUngg|ghYcb'nW|b|j Ya YhcXc'
WbZfa hYdYgWcZ5GF' HYZ`ck|h|' g'c'XY_Yh|ba|bXk\Yb|Xb|f|b|'
hYdYgWcZ5GF hfc| |\j|gU|bgW|b

%; YbU'n5GF XgYgYgUfYbdcVg|YX|bhYZf|Zk'nf|gUf'Wg|f'W|b' b
Wb|g'z|Ug|f|b|U'YUW|b| W'cWf'hYXh'cZUg|f'W|b|Ux|gUdfYh
k|h|bhYZf|n|f'

& 5GF 'gXZfYH|UfXZca 8!7UW|' VnhYdYgWcZUW|' d'fWbXWUf'c'
hY'c|hW 8!7UW|' d'fXca|b|h'mXjYcdgUgUg|Yg'ZdfUY'WUg|c'
'c|hWgUx|b|fWUW|' k|h|bhYgU'

" 5GF 'gXZfYH|UfXZca 'AUf7UW|' #GU|' VnhYdYgWcZj|gU'g|'bgcZ
YdHgcb'

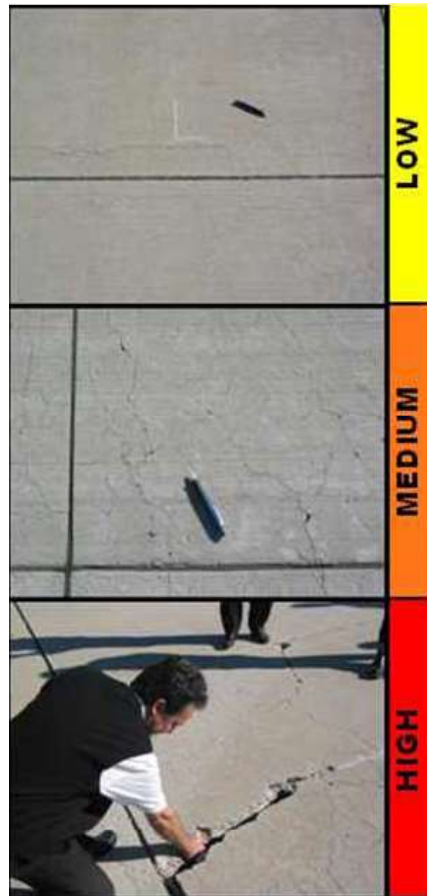
GjYfhi@jYg

@ A|jaUlebc: cf||bCVVNSUaU|YECSE'ddnh|UZca VWG/c|hgcf5GF' fYUXdddi lg/VWGUhYg fZWFYH| \HFYCa|b|hm?aa'cf~Yg|@|hY lebcY|NBWcZag Ya Yh|bdj Ya Yhcf g ffdi b|h| g| VifgcfYYa Ylg'

Gca Y: CS'ddnh|U/|b|NGXgkY|h| 'cfchY: CS'fYag U'a YhcXga UnWY f|i |fX' A UnWY|NBWcZg'Uvag Ya Yh|bX'cf ga YXa U|Yc UXW|h| g| VifgcfYYa Ylg'

A A Y|a '5GF Xg|Ng|g|N|Z|h|U|X|Z|ca ~ck Vm|U| |h| 'cbYcfadYcZhY Z`ck|h|. |b|NGX: CS'ddnh|U|Z|b|NGX|W|W|h| 'cZhYgUzga YZU|a Ylg' Uch| VWGcfU|W| |h|g|N|d|g|fYg|h|g fZWFddi lg'Z|W|N|Y|a Un cW|Z|U|b|c|Z|k|X| VWG|fYCa|b|hm?aa'cfk|X|h|U|a UnWY g V|j|X|X|h| |h| VWG'

< CbYcfVh'cZhYZ`ck|h| Y|g| %|@|cgYcfalg|h| W|N|Y|Z|U|a Ylgk|W| dg|\||\ : CS'ddnh|U|Z'EGU|g fZWF|H| |h|U|X|Z|b|d|b|g| |h|Z|W|h|n| X|f|U|X|U|X|dj Ya Yh|f|i |fY|g|aa Y|U|Y|U|f|'a UnU|c'f|i |fY|U|g|e' UXW|h|g| VifgcfYYa Ylg'



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APPENDIX D

DETAILED PAVEMENT CONDITION DATA



5@SCH7caVbYSS9%\$
; YdUPXSUY

%%-\$\$\$

DjY%Z%

BYkcf.	S7I		BuY	Dinf: jYXFYjdu5jdbfh			
GfUBW	59%		BuY	5dcb\$%\$Wdf	Ig	5DFCB	5fYU
GMjcb	\$%	cZ %	: fca.	HUkU5		H. 9NYcZDjYh	@Gj7cbg! %%%(&
GfUW	57	: Ua]m	5@SCH5dcbg	NcbY		7UWcfm	FUb. G
5fYU	%%\$ Gc h	@Y[h.	*\$: h	KPh.		&* : h	
GUg		GU@Y[h.	: h	GVKPh.	: h	>ch@Y[h.	: h
Gcd Xf.		GfYHhdY		; fUX \$		@bYg \$	
GMjcb7caaYlg							

Kcf_SUY	%%%(&	Kcf_HdY	Bk7cbg! Wcb! bYU	7cX	BI!B	=AUcFA/ F. HfY
----------------	------------------	----------------	-------------------------	------------	-------------	-----------------------

@Gjhg!SUY	%\$\$\$%	HRUladYg	' &	GfjYKX	+
7cbYjcbg	D7= +*				
-hgNjcb7caaYlg					

QadYBi aVf.	\$%	HdY	F	5fYU	(- \$\$\$Gc h	D7= , \$
QadY7caaYlg						
(, @/ H7F		@		) \$\$\$ : h		
(, @/ H7F		A		\$\$\$: h		

QadYBi aVf.	\$	HdY	F	5fYU	((* \$\$\$Gc h	D7= +(
QadY7caaYlg						
(, @/ H7F		@		%) '\$\$: h		
(, @/ H7F		A		\$\$\$: h		

QadYBi aVf.	%	HdY	F	5fYU	) \$\$\$Gc h	D7= , \$
QadY7caaYlg						
(, @/ H7F		@		*) '\$\$: h		
(, @/ H7F		A		-) '\$\$: h		

QadYBi aVf.	%	HdY	F	5fYU	) \$\$\$Gc h	D7= +
QadY7caaYlg						
(, @/ H7F		@		* \$\$\$: h		
(, @/ H7F		A		\$\$\$: h		

QadYBi aVf.	&%	HdY	F	5fYU	) \$\$\$Gc h	D7= +'
QadY7caaYlg						
(, @/ H7F		@		*) '\$\$: h		
(, @/ H7F		A		&\$\$\$: h		

QadYBi aVf.	&	HdY	F	5fYU	) \$\$\$Gc h	D7= +(
QadY7caaYlg						
(, @/ H7F		@		* \$\$\$: h		
(, @/ H7F		A		\$\$\$: h		

QadYBi aVf.	' &	HdY	F	5fYU	(+ \$\$\$Gc h	D7= +(
QadY7caaYlg						
(, @/ H7F		@		- \$\$\$: h		
(, @/ H7F		A		\$\$\$: h		

BYkcf.	87I		BláY	Dinf:]YXFY]dU5]fbbh			
GfUW	58&		BláY	5dcb\$\$BMMf	I g	5DFCB	5fU
GWch	9		cZ)	: fca.	GWkb\$%	H.	7dMMDjYh
GfUW	5D		: Ua]m	5@SCH5dldg	NbY	7U]cfm	Fub. G
5fU			'z*) G&h	@Y[h.	'& : h	K]h.	%\$: h
GUg			GU@Y[h.	: h	GUVK]h.	: h	>ch@Y[h.
Gci XE.			GfYWHdY		; fUX \$		@byg \$
GWcb7caaYlg							
Kcf_8UY	%\$%\$		Kcf_HdY	Bk7d]g	Wcb! :h]U	7cX	BI !-B
Kcf_8UY	+&#%+		Kcf_HdY	Bk7d]g	Wcb! :h]U	7cX	BI !-B
@g]hgl'8UY	%\$%\$%		HUCladYg	+		GfjYX	'
7dM]cbg	D7=)'						
-bgM]cb7caaYlg							
QádYBiaVF.	\$&		HdY	F	5fU	)\$\$\$\$G&h	D7= ()
QádY7caaYlg							
(	6@C7? 7F		A		' \$\$\$ G&h		
(	@/ H7F		A		*(\$\$\$:h		
)&	F5J9@B;		@		) \$\$\$ G&h		
QádYBiaVF.	\$		HdY	F	5fU	) \$\$\$ G&h	D7=)*
QádY7caaYlg							
(	@/ H7F		A		)* \$\$\$ :h		
)&	F5J9@B;		@		) \$\$\$ G&h		
QádYBiaVF.	\$		HdY	F	5fU	* \$\$\$ G&h	D7=)+
QádY7caaYlg							
(	@/ H7F		A		(' \$\$\$:h		
)\$	D5H7<-B;		@		) \$\$\$ G&h		
)&	F5J9@B;		@		) \$\$\$ G&h		

BYkcf.	87I		BLáY	Dinf: [YXFY]dU5]fbbh			
GfUBW	58&		BLáY	5dcb\$\$\$Wf	I g	5DFCB	5fYU
GMfch	8&	cZ)	: fca.	HU]kU7cbWf8&	H.	9(YcZDjYh	@g]7cbg] %%%(&
GfZUW	57	: Uá]m	5@SCH5dldg	NbY	7UH]cfm		FUb. G
5fYU		%(z\$\$Gc h	@Y[h.	+\$: h	K]Ph.	\$\$: h	
GUg		GU@Y[h.	: h	GUVK]Ph.	: h	>ch@Y[h.	: h
Gci Xf.		GfYWHdY		; fUX \$		@bYg \$	
GMfcb7caaYlg							
Kcf_8UY	%%%(&		Kcf_HndY	Bk7cbg]Vcb' h]U	7cXV	BI!-B	=AUcfA/ F. HfY
@g]hgl'8UY	%%8889%		HRUcláYg	'	GfjYhX	'	
7cb]ldg	D7= *-						
-hg]Vcb7caaYlg							
GládYBiaVf.	8%	HndY	F	5fYU	)&888Gc h	D7= +%	
GládY7caaYlg							
(	6C7? 7F	@		88888 Gc h			
()	89DF9GCB	@		%888 Gc h			
(	@/ H7F	@		('888 : h			
(	@/ H7F	A		- 888 : h			
)+	K95H9F-B;	@		)&888 Gc h			
GládYBiaVf.	8&	HndY	F	5fYU	)&888Gc h	D7= +\$	
GládY7caaYlg							
(	@/ H7F	@		&'888 : h			
(	@/ H7F	A		%(+'888 : h			
)+	K95H9F-B;	@		&&'888 Gc h			
)+	K95H9F-B;	A		&&'888 Gc h			
GládYBiaVf.	\$	HndY	F	5fYU	(88888Gc h	D7= *(
GládY7caaYlg							
(	@/ H7F	@		()'888 : h			
(	@/ H7F	A		%(+'888 : h			
)+	K95H9F-B;	@		88888 Gc h			
)+	K95H9F-B;	A		88888 Gc h			

BYkcf_ 871		BláY	Dinf: [YXFY]dU5]fbbh
GfUW 58&		BláY	5dcb\$\$\$Wf
GWfch \$	(	cZ)	: fca. GWfcb\$
GfUW 57		: Ua]m 5@SCH5dldg	NbY
5fU	%\$&Gh	@Y[h.	(((\$: h K]h. %* : h
GUg		GU@Y[h.	: h GUVK]h. : h >ch@Y[h. : h
Gci Xf.		GfYHhY	; fUX \$ @Ug \$
GWfcb7caaYlg			
Kcf_8UY %%%(&		Kcf_ HndY Bk7dghVcb: h]U	7cXV BI!-B -gAUcfA/ F. HfY
@ghg!8UY %\$\$\$%		HRUcláYg \$\$	GfjYhX)
7cb]dgh D7= ('			
-hgWfcb7caaYlg			
GládYBiaVf. \$		HndY F	5fU)\$\$\$\$Gh D7= (&
GládY7caaYlg			
(, @/ H7F		@	)'\$\$ : h
(, @/ H7F		A	&\$\$\$: h
)& F5J9@B;		@	&\$\$\$\$ Gh
)& F5J9@B;		A	&\$\$\$\$ Gh
GládYBiaVf. \$		HndY 5	5fU)\$\$\$\$Gh D7= *(
GládY7caaYlg			
(, @/ H7F		@	- \$\$\$: h
(, @/ H7F		A	' \$\$\$: h
)& F5J9@B;		@	)\$\$\$\$ Gh
GládYBiaVf. \$		HndY F	5fU)\$\$\$\$Gh D7= (,
GládY7caaYlg			
(, @/ H7F		A	\$\$\$\$: h
)& F5J9@B;		@	&\$\$\$\$ Gh
)& F5J9@B;		A	&\$\$\$\$ Gh
GládYBiaVf. %		HndY F	5fU)*+\$\$\$\$Gh D7= ',
GládY7caaYlg			
(, @/ H7F		A	&\$\$\$: h
)& F5J9@B;		A	)*+\$\$\$ Gh
GládYBiaVf. %		HndY F	5fU)\$\$\$\$Gh D7= ',
GládY7caaYlg			
(, @/ H7F		@	)\$\$\$ : h
(, @/ H7F		A	%)'\$\$: h
)& F5J9@B;		A	)\$\$\$\$ Gh

BYkcf.	871		BLaY	Dirf: jYXFYjdU5jfbfh			
GfUW	58&		BLaY	5dcb\$\$\$Wlf	Ig	5DFCB	5fU
GMch	\$	cZ)	: fca.	GMcb\$		H. GMcb\$	@g7cbh' %%%(&
GfUW	57	: Ua]m	5@SCH5dcbg	NbY		7UHcfm	Fb. G
5fU		'%& G&h	@Y[h.	%%:h	K]h.	\$\$:h	
GUg		GU@Y[h.	:h	GUVK]h.	:h	>ch@Y[h.	:h
Gci Xf.		GfYHhY		; fUX \$		@bYg \$	
GMcb7caaYlg							
Kcf_SUY %%%(&		Kcf_HhY	Bk7cbh' h]U		7cX BI!B		=AUcfA/ F. HfY
@g7cbh'SUY %%%&		HRUladYg)		GfjYhX '			
7cbh' D7= ,%							
-hgGMcb7caaYlg							
QladYBiaVf. \$&		HhY	F	5fU	) \$\$\$G&h	D7= -%	
QladY7caaYlg							
(, @/ H7F		@		&'\$\$:h			
(, @/ H7F		A		%\$\$:h			
QladYBiaVf. \$		HhY	F	5fU	) \$\$\$G&h	D7= +)	
QladY7caaYlg							
(, @/ H7F		@		\$\$\$:h			
(, @/ H7F		A		%)'\$\$:h			
QladYBiaVf. \$		HhY	F	5fU	*&)'\$\$G&h	D7= +,	
QladY7caaYlg							
(, @/ H7F		@		&)'\$\$:h			
(, @/ H7F		A		%\$\$:h			
(- C-@G@5; 9		B		\$\$\$ G&h			

BYkcf.	S7I		BláY	Dinf:]YXFY]dU5]fbbh			
GfUW	58&		BláY	5dcb\$\$S\$Wf	I g	5DFCB	5fU
GMch	%	cZ)	: fca.	HU]kúš		H. GM]máYBW	@g]7cbg] %%%(&
GfUW	57	: Ua]m	5@SCH5dldg	NbY		7UH]cfm	FUb. G
5fU		\$\$*(G&h	@Y]h.	:%\$:h	K]Ph.	:%&:h	
GUg		GU@Y]h.	:h	GUVK]Ph.	:h	>ch@Y]h.	:h
Gci Xf.		GfYWHdY		; fUX \$		@Ug \$	
GMcb7caaYlg							
Kcf_8UY %%%(&		Kcf_HdY	Bk7cbg]Vcb:]hU		7cX BI!B	=AUcfA/ F. HfY	
@g]hgl'SUY %%%\$%		HRUcláYg (		GfjYhX (
7cb]hbg D7= (\$							
hg]Vcb7caaYlg							
GládYBiaVf. %		HdY	F	5fU	**()'\$\$G&h	D7=)\$	
GládY7caaYlg							
(, @/ H7F		A		*\$\$ \$:h			
)\$ D5H<-B;		@		%%\$\$ G&h			
)& F5J9@B;		<		)'\$\$ G&h			
)+ K95H9F-B;		@		)&\$\$ G&h			
GládYBiaVf. \$\$		HdY	F	5fU	*\$)'\$\$G&h	D7=))	
GládY7caaYlg							
(, @/ H7F		A		(+\$ \$:h			
(, @/ H7F		<		%)\$ \$:h			
)+ K95H9F-B;		@		*\$)'\$\$ G&h			
GládYBiaVf. \$		HdY	F	5fU	)-%'\$\$G&h	D7= &	
GládY7caaYlg							
(% 5@@; 5HCF7F		<		&\$\$ G&h			
(, @/ H7F		A		,()'\$\$ \$:h			
(, @/ H7F		<		*)'\$\$ \$:h			
)+ K95H9F-B;		@		)-%'\$\$ G&h			
GládYBiaVf. \$		HdY	F	5fU	()\$\$\$\$G&h	D7= &	
GládY7caaYlg							
(% 5@@; 5HCF7F		A		%)\$ \$:h			
)& F5J9@B;		A		((-\$ \$:h			
)& F5J9@B;		<		%)\$ \$:h			

BVkf.	S7I	BuY	Dinf: jXfYjdU5jfbh
GfUW	F%*	BuY	FibkUm%!*SWMf
GWch	\$%	z %	: fca. FibkUm%9bX
GfUW	57	: Ua]m 5@SCHFKg	NbY
5fU	*%\$-\$\$Geh	@Y[h.	*2@ : h K]h.
GUg	GU@Y[h.	: h	GUVK]h.
Gci Xf.	GfYHhY	; fUX	\$
GWcb7caaYlg			
Kcf_8UY %%%(&	Kcf_HndY Bk7cbjg Vcb! :h]U	7cX BI!B	=AUcfA/ F. HfY
@ghjg!8UY %\$\$\$\$%	HRUladYg %&	GfjYhX %	
7cb]hbg D7= %*			
-hgNWcb7caaYlg			
QladYBiaVf. \$&	HndY F	5fU	)\$\$\$\$Geh D7= *(
QladY7caaYlg			
(, @/ H7F	@	\$\$\$\$: h	
(, @/ H7F	A	&\$\$\$: h	
)+ K95H9F-B;	@	)\$\$\$\$ Geh	
QladYBiaVf. \$	HndY F	5fU	)\$\$\$\$Geh D7= *\$
QladY7caaYlg			
(, @/ H7F	@	\$\$\$\$: h	
(, @/ H7F	A	)'\$\$\$ : h	
)+ K95H9F-B;	@	)\$\$\$\$ Geh	
QladYBiaVf. \$\$	HndY F	5fU	)\$\$\$\$Geh D7= %*
QladY7caaYlg			
(, @/ H7F	@	\$\$\$\$: h	
(, @/ H7F	A	&)'\$\$: h	
)& F5J9@B;	@	)\$\$\$ Geh	
)+ K95H9F-B;	@	(-) \$\$\$ Geh	
QladYBiaVf. %\$	HndY F	5fU	)\$\$\$\$Geh D7= *\$
QladY7caaYlg			
(, @CB; H 8-B5@HF5BGJ9FG' @	@	\$\$\$\$: h	
7F57?-B;			
(, @/ H7F	A	&\$\$\$: h	
)& F5J9@B;	@	\$\$\$\$ Geh	
)+ K95H9F-B;	@	(- \$\$\$ Geh	
QladYBiaVf. %&	HndY F	5fU	)\$\$\$\$Geh D7=)-
QladY7caaYlg			
(, @/ H7F	@	\$\$\$\$: h	
(, @/ H7F	A	&\$\$\$: h	
)& F5J9@B;	@	%\$\$\$ Geh	
)+ K95H9F-B;	@	(,) \$\$\$ Geh	
QladYBiaVf. %&	HndY F	5fU	)\$\$\$\$Geh D7= *'
QladY7caaYlg			
(, @/ H7F	@	\$\$\$\$: h	
(, @/ H7F	A	&\$\$\$: h	
)+ K95H9F-B;	@	)\$\$\$\$ Geh	
QladYBiaVf. %	HndY F	5fU	)\$\$\$\$Geh D7= *\$
QladY7caaYlg			
(, @/ H7F	@	\$\$\$\$: h	
(, @/ H7F	A	&\$\$\$: h	
)& F5J9@B;	@	\$\$\$\$ Geh	
)+ K95H9F-B;	@	(- \$\$\$ Geh	
QladYBiaVf. &	HndY F	5fU	)\$\$\$\$Geh D7= *&
QladY7caaYlg			

(, @/ H7F @ (\$\$\$: h
(, @/ H7F A &\$\$: h
)& F5J9@B; @)\$\$ G; h
) + K95H 9F-B; @ (-) \$\$ G; h

QádYBiaVF. '\$ HndY F 5fYU)\$\$\$\$ G; h D7=)-

QádY7caaYlg

(, @/ H7F @ '%\$\$: h
(, @/ H7F A &'\$\$: h
)& F5J9@B; @ \$\$\$ G; h
) + K95H 9F-B; @ (, \$\$\$ G; h

QádYBiaVF. '+ HndY F 5fYU)\$\$\$\$ G; h D7= *\$

QádY7caaYlg

(, @/ H7F @ ')\$\$: h
(, @/ H7F A &'\$\$: h
)& F5J9@B; @ %\$\$ G; h
) + K95H 9F-B; @ (- \$\$ G; h

QádYBiaVF. ((HndY F 5fYU)\$\$\$\$ G; h D7=)-

QádY7caaYlg

(, @/ H7F @ &'\$\$: h
(, @/ H7F A &'\$\$: h
)& F5J9@B; @ %\$\$ G; h
) + K95H 9F-B; @ (,)\$\$ G; h

QádYBiaVF.)% HndY F 5fYU)\$\$\$\$ G; h D7= *\$

QádY7caaYlg

(, @/ H7F @ '\$\$\$: h
(, @/ H7F A &\$\$: h
)& F5J9@B; @ %\$\$ G; h
) + K95H 9F-B; @ (- \$\$ G; h

QádYBiaVF.), HndY F 5fYU)\$\$\$\$ G; h D7= *&

QádY7caaYlg

(, @/ H7F @ '\$\$\$: h
(, @/ H7F A &'\$\$: h
)& F5J9@B; @)\$\$ G; h
) + K95H 9F-B; @ (-) \$\$ G; h

QádYBiaVF. *) HndY F 5fYU)\$\$\$\$ G; h D7= *&

QádY7caaYlg

(, @/ H7F @ ')\$\$: h
(, @/ H7F A &'\$\$: h
)& F5J9@B; @)\$\$ G; h
) + K95H 9F-B; @ (-) \$\$ G; h

QádYBiaVF. +& HndY F 5fYU)\$\$\$\$ G; h D7= *\$

QádY7caaYlg

(, @/ H7F @ &'\$\$: h
(, @/ H7F A &'\$\$: h
)& F5J9@B; @ %\$\$ G; h
) + K95H 9F-B; @ (- \$\$ G; h

QádYBiaVF. + HndY F 5fYU)\$\$\$\$ G; h D7= *&

QádY7caaYlg

(, @/ H7F @ &'\$\$: h
(, @/ H7F A &)'\$\$: h
) + K95H 9F-B; @)\$\$\$\$ G; h

QádYBiaVF. ,* HndY F 5fYU)\$\$\$\$ G; h D7= *(

QádY7caaYlg

(, @/ H7F @ &'\$\$: h
(, @/ H7F A &'\$\$: h
) + K95H 9F-B; @)\$\$\$\$ G; h

QádYBiaVF. -' HndY F 5fYU)\$\$\$\$ G; h D7=)*

QádY7caaYlg

(, @/ H7F
(, @/ H7F
)& F5J9@B;
)+ K95H19F-B;

@ \$\$\$:h
A '*)'SS :h
@)SS G&h
@ (-)SS G&h

BYkcf.	S7I		BláY	Dinf: [YXFY]dU5]fbbh		
GfUW	H5		BláY	HI]kúis58Wúf	IgY	H5L-K5M 5fU 'Sž'%Gh
GWfch	%	cZ %	: fca.	HI]kúis5)	H.	HI]kúis5% @gh7cbg! %%%(&
GfZUW	57	: Ua]m	5@SCH57HI]kúg	NbY	7Uf]cfm	Fub. D
5fU	'Sž'%Gh	@Y[h.	*ž+\$: h	K]h.	)\$: h	
GUg		GU@Y[h.	: h	GUVK]h.	: h	>ch@Y[h. : h
Gci Xf.		GfYWHdY		; fUX \$		@bYg \$
GWfcb7caaYlg						
Kcf_8UY %%%(&		Kcf_HdY	Bk7cbg! Vcb! :h]U		7cX BI !-B	=AUcfA/ F. HfY
Kcf_8UY -#8888		Kcf_HdY	7UWGUH] !57		7cX 7G57	=AUcfA/ F. :UgY
Kcf_8UY -#8888		Kcf_HdY	GfZUWHfUfáYh		7cX GGH	=AUcfA/ F. :UgY
@gh7cbg!8UY %8888%		HRUcláYg	*%		GfjYhX %	
7cb]cbg D7= +(
=gh]cb7caaYlg						
GládYBiaVf. \$		HdY	F	5fU	)8888Gh h	D7= ,'
GládY7caaYlg						
(, @/ H7F		@		,%88 : h		
(, @/ H7F		A		*888 : h		
GládYBiaVf. %&		HdY	F	5fU	)8888Gh h	D7= ,(
GládY7caaYlg						
(, @/ H7F		@		,888 : h		
(, @/ H7F		A		)888 : h		
GládYBiaVf. %		HdY	F	5fU	)8888Gh h	D7= +
GládY7caaYlg						
(, @/ H7F		@		%888 : h		
(, @/ H7F		A		%8888 : h		
GládYBiaVf. &		HdY	F	5fU	)8888Gh h	D7= +%
GládY7caaYlg						
(, @/ H7F		@		%888 : h		
(, @/ H7F		A		88888 : h		
GládYBiaVf. '\$		HdY	F	5fU	)8888Gh h	D7= +&
GládY7caaYlg						
(, @/ H7F		@		%888 : h		
(, @/ H7F		A		88888 : h		
GládYBiaVf. '*		HdY	F	5fU	)8888Gh h	D7= +&
GládY7caaYlg						
(, @/ H7F		@		%888 : h		
(, @/ H7F		A		88888 : h		
GládYBiaVf. (&		HdY	F	5fU	)8888Gh h	D7= *+
GládY7caaYlg						
(, @/ H7F		@		%, '88 : h		
(, @/ H7F		A		'8888 : h		
GládYBiaVf. (		HdY	F	5fU	)8888Gh h	D7= *-
GládY7caaYlg						
(, @/ H7F		@		)888 : h		
(, @/ H7F		A		'8888 : h		
GládYBiaVf. )(		HdY	F	5fU	)8888Gh h	D7= +&
GládY7caaYlg						
(, @/ H7F		A		'8888 : h		

QldYBiaVF: *\$

HdY

F

5fU

)SS'SS G: h

D7= +\$

QldY7caaYlg

(@/ H7F

@

SS'SS :h

(@/ H7F

A

' \$'SS :h

BVkd.	S7I		BláY	Dinf: [YXFY]dU5]fbbh			
GfUW	H5%		BláY	HI]kúis%8Wwf	I g	H5L-K5M	5fU
GMch	\$%	cZ %	: fca.	HI]kúis		H. Filkú%!"*	@g]7d]h' %%%(&
GfUW	57	: Ua]m	5@8CH57HI]kúg	NbY		7U]cfm	Fb. G
5fU	%8% G h	@Y]h.	&) : h	K]h.		) : h	
GUg		GU@Y]h.	: h	GUVK]h.	: h	>ch@Y]h.	: h
Gci XE.		GfY]HdY		; fUX \$		@b]g \$	
GMcb7caaYlg							
Kcf_SUY %%%(&		Kcf_HdY Bk7d]h' Vcb' :h]U			7cX BI!B		=AUcfA/ F. HfY
@g]h]g]SUY %8889%		HRU]dYg (		Gf]YhX '			
7d]h]g D7= +%							
-hg]h]g]b7caaYlg							
QádYBi aVf. \$%		HdY	F	5fU	)+* \$\$\$ G h	D7= +(
QádY7caaYlg							
(, @/ H7F		A		' \$\$\$: h			
QádYBi aVf. \$&		HdY	F	5fU	)+(\$\$\$ G h	D7= +%	
QádY7caaYlg							
(, @/ H7F		@		% \$\$\$: h			
(, @/ H7F		A		%)' \$\$: h			
) + K95H 9FB;		@		&+ \$\$\$ G h			
QádYBi aVf. \$		HdY	F	5fU	(,)' \$\$\$ G h	D7= *-	
QádY7caaYlg							
(, @/ H7F		@		%' \$\$: h			
(, @/ H7F		A		&' \$\$: h			

BYkcf.	S7I		BláY	Dinf:]YXFY]dU5]fbbh			
GfUW	H5&		BláY	HI]kÚi5&8YUWf	I g	H5L-K5M	5fYU
GWfch	%	cZ %	: fca.	FibkÚi%!*		H. HI]kÚi5	@g]7cbg] %%%(&
GfZUW	57	: Úa]m	5@SCH57HI]kÚg	NbY		7U]cfm	FUb. G
5fYU		'*% &Gc h	@Y]h.	'%& h	K]Ph.	+\$: h	
GUg		GUV@Y]h.	: h	GUVK]Ph.	: h	>cb]@Y]h.	: h
Gci Xf.		GfY]HdY		; fUX \$		@Ug \$	
GWfcb7caaYlg							
Kcf_SUY %%%(&		Kcf_HdY	Bk7cbg]Vcb:]h]U		7cX BI!B	=AUcfA/ F. HfY	
@g]hgl'SUY %%%&%		HRUcláYg *		GfjYmX '			
7cb]hbg D7= +'							
hg]Wfcb7caaYlg							
GládYBiaVf. %%		HdY	F	5fYU	)- \$\$\$Gc h	D7= +&	
GládY7caaYlg							
(, @/ H7F		@		&'\$\$: h			
(, @/ H7F		A		%+'\$\$: h			
)+ K95H9F-B;		@		)- \$\$\$ Gc h			
GládYBiaVf. \$		HdY	F	5fYU	)'+)'\$\$Gc h	D7= *-	
GládY7caaYlg							
(, @/ H7F		@		+\$\$\$: h			
(, @/ H7F		A		\$\$ '\$\$: h			
)+ K95H9F-B;		@		)'+)'\$\$ Gc h			
GládYBiaVf. \$		HdY	F	5fYU	)&'\$\$Gc h	D7= +	
GládY7caaYlg							
(, @/ H7F		@		%\$\$\$: h			
(, @/ H7F		A		%'\$\$: h			

BYkcf.	S7I		BLáY	Dinf:]YXFY]dU5]fbbh			
GfUW	H5'		BLáY	HI]kÚi5' 8XWlf	I g' H5L-K5M	5fYU	(S%+ G: h
GM]ch	\$%	cZ %	: fca.	FibkÚi%!' *	H. HI]kÚi5	@G]7cbg]'	%%%(&
GfUW	57	: Úa]m	5@SCH57HI]kÚg	NbY	7U]cfm	FUb. G	
5fYU	(S%+ G: h	@Y]h.	'%& h	K]Ph.	+S: h		
GUg	GUV@Y]h.		: h	GUVK]Ph.	: h	>cb]@Y]h.	: h
Gci XE.	GfY]HdY			; fUX \$		@Ug \$	
GM]cb7caa Ylg							
Kcf_8UY	%%%(&	Kcf_ HndY	Bk7cbg] Vcb' :h]U		7cXV BI !:B	=gAUcfA/ F. HfY	
@G]7cbg]8UY	%%SS% %SSSS%	HRUcladYg	*	GfjYnX	(
7cb]cbg	D7= +&						
=g]GM]cb7caa Ylg							
GládYBiaVf.	\$%	HndY	F	5fYU	(- %)'SS G: h	D7= *(
GládY7caa Ylg							
(, @/ H7F		@		*\$SS : h			
(, @/ H7F		A		' \$SS : h			
)+ K95H 9F-B;		@		(- %)'SS G: h			
GládYBiaVf.	\$	HndY	F	5fYU	), *\$SS G: h	D7= *+	
GládY7caa Ylg							
(, @/ H7F		@		% 'SS : h			
(, @/ H7F		A		&\$SS : h			
)+ K95H 9F-B;		@		), *\$SS G: h			
GládYBiaVf.	\$	HndY	5	5fYU	+9)'SS G: h	D7= ,+	
GládY7caa Ylg							
(, @/ H7F		@		% 'SS : h			
(, @/ H7F		A		+) 'SS : h			
GládYBiaVf.	\$	HndY	F	5fYU	)&\$SS G: h	D7= +'	
GládY7caa Ylg							
(, @/ H7F		A		&\$SS : h			

BVkf.	S7I		BlaY	Dinf: jYFYjdU5jfbh				
GfUW	H5(		BlaY	HIjkUis(8XWlf	Ig	H5L-K5M	5fU	'(S* Gc h
GMch	%	cZ %	: fca.	FibkUn%!*		H.	HIjkUis	@g7dgh' %%%(&
GfUW	57	: Ua]m	5@SCH57HIjkUg	NbY		7UH[cfm		Fub. G
5fU	'(S* Gc h	@Y[h.	'%& h	K]Ph.		+\$: h		
GUg		GU@Y[h.	: h	GUVK]Ph.		: h	>ch@Y[h.	: h
Gci Xf.		GfYWHdY		; fUX \$			@byg \$	
GMcb7caaYlg								
Kcf_8UY %%%(&		Kcf_HndY Bk7dghVcb' h]U			7cXV BI!-B		=AUcfA/ F. HiY	
@g7dgh'8UY %%%(&		HRUladYg *		GfjYnX '				
7dghVcb D7=),								
hgNMcb7caaYlg								
QadYBiaVf. \$%		HndY	F	5fU	)SSSSGc h		D7=)(
QadY7caaYlg								
(, @/ H7F		@		'''SS : h				
(, @/ H7F		A		'*+'SS : h				
(, @/ H7F		<		('SS : h				
)+ K95H9F-B;		@		)SSSS Gc h				
QadYBiaVf. \$		HndY	F	5fU	)+'SSGc h		D7=),	
QadY7caaYlg								
(, @CB; H8-B5@HF5BGJ9FG' @				%)'SS : h				
7F57?-B;								
(, @CB; H8-B5@HF5BGJ9FG' A				()'SS : h				
7F57?-B;								
)+ K95H9F-B;		@		)+'SS Gc h				
QadYBiaVf. \$		HndY	F	5fU	)&)'SSGc h		D7= *'	
QadY7caaYlg								
(, @/ H7F		@		%)'SS : h				
(, @/ H7F		A		'(SSS : h				
)& F5J9@B;		@		*SSS Gc h				

BYkcf.	S7I		BLáY	Dinf: jYXFYjdU5jfbfh			
GfUW	H5)		BLáY	HIjkúis) SXMlf	I g	H5L-K5M	5fU
GMch	%	cZ %	: fca.	Fibkúh%!*'		H. HIjkúis	@g7cbg' %%%(&
GfUW	57	: Uá]m	5@SCH57HIjkúg	NbY		7UHcfm	Fb. G
5fU		&ž+&Gh	@Y[h.	'%: h	K]h.	*\$: h	
GUg		GU@Y[h.	: h	GUVK]h.	: h	>ch@Y[h.	: h
Gci Xf.		GfYHhY		; fUX \$		@bg \$	
GMcb7caaYlg							
Kcf_8UY %%%(&		Kcf_HhY	Bk7cbgVcb: h]U		7cX BI!B	=AUcfA/ F. HhY	
@g7cbg'8UY %%%&%		HRUladYg)		GfjYhX &			
7cb]cbg D7= +%							
hgNMcb7caaYlg							
QádYBiaVf. \$&		HhY	F	5fU	)-, \$\$\$Gh	D7= +%	
QádY7caaYlg							
(, @/ H7F		@		%\$\$\$: h			
(, @/ H7F		A		%)'\$\$: h			
)+ K95H9F-B;		@		)-, \$\$\$ Gh			
QádYBiaVf. \$		HhY	F	5fU	*)'\$\$Gh	D7= +%	
QádY7caaYlg							
(, @/ H7F		@		'+'\$\$: h			
(, @/ H7F		A		&\$\$\$: h			
)+ K95H9F-B;		@		*)'\$\$ Gh			

BYkcf.	871			BláY	Dirf: jYXFYjcbU5jfbfh		
GfUW	H7S%			BláY	HIjkúir7dbNMfS%SWMf	I gY	H5L-K5M 5fU)%&' G e h
GWfch	%			cZ %	: fca. HIjkúis		H. 5drbSS& @gh7cbgH' %%% \$
GfZW	57			: Ua]m 5@SCH57HIjkúg	NbY		7UH[cfm Fub. G
5fU	)%&' G e h			@Y[h.	%)) : h	K]Ph.	() : h
GUg				GU@Y[h.	: h	GVK]Ph.	: h >ch@Y[h. : h
Gci Xf.				GfYWHdY		; fUX \$	@bYg \$
GWfcb7caaYlg							
Kcf_8UY %%% \$				Kcf_HdY Bk7cbgH' Vcb' h]U		7cX BI !-B	=AUcfA/ F. HfY
Kcf_8UY -#8888				Kcf_HdY 7UWGUH !'57		7cX 7G57	=AUcfA/ F. :UgY
Kcf_8UY -#8888				Kcf_HdY GfZWfHfA Yh		7cX GGH	=AUcfA/ F. :UgY
@gh7cbgH'8UY %8888%				HRUcláYg %		GfjYhX)	
7cb]hcg D7= +							
hgNMfcb7caaYlg							
GládYBiaVf. %				HdY F	5fU	, '(\$SSGe h	D7= ,'
GládY7caaYlg							
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(, @/ H7F				A	%, '\$S : h		
GládYBiaVf. S&				HdY F	5fU	(('\$SSGe h	D7= +'
GládY7caaYlg							
(, @/ H7F				@	%SSS : h		
(, @/ H7F				A	%SSS : h		
) + K95H 9F-B;				@	(('\$SS Ge h		
GládYBiaVf. \$				HdY 5	5fU	()SSSSGe h	D7=)-
GládY7caaYlg							
() 89DF9GCB				@	' \$SS Ge h		
() 89DF9GCB				A	%SS Ge h		
(, @/ H7F				@	%'SS : h		
(, @/ H7F				A	%SSS : h		
)\$ D5H<-B;				@	%SSS Ge h		
) + K95H 9F-B;				@	('-, '\$S Ge h		
GládYBiaVf. \$				HdY F	5fU	()SSSSGe h	D7= ++
GládY7caaYlg							
() 89DF9GCB				@	* \$SS Ge h		
(, @/ H7F				@	%SS : h		
(, @/ H7F				A	%SS : h		
)\$ D5H<-B;				@	%SSS Ge h		
) + K95H 9F-B;				@	('-, '\$S Ge h		
GládYBiaVf. %\$				HdY F	5fU	' + \$SSGe h	D7= ,-
GládY7caaYlg							
(, @/ H7F				@	* \$SS : h		
) + K95H 9F-B;				@	' + \$SS Ge h		

BVkf. S71 BLaY Dinf: jYXFYjdU5jfbfh

GfUW H7S& BLaY HIjkUir7dbNMfS3SWMf IgX H5L-K5M 5fU '(z(* G&h

GWfch \$% cZ & : fca. HIjkUis H. 5drbS& @gh7dgh' %%%,-

GfZUW 57 : Ua]m 5@SCH57HIjkUg NdbY 7UH[cfm FUb. G

5fU ' &** G&h @Y[h. %S\$:h K]Ph. S\$:h

GUg GUV@Y[h. :h GUVK]Ph. :h >ch@Y[h. :h

Gci Xf. GfYWHdY ; fUX \$ @byg \$

GWfcb7caaYlg

Kcf_8UY %%%,- Kcf_HdY Bk7dghVcb' h]U 7cX BI!-B gAUcfA/ F. HiY

Kcf_8UY -#4SS\$ Kcf_HdY 7UWGUH!57 7cX 7G57 gAUcfA/ F. :Ug

Kcf_8UY -#3SS\$ Kcf_HdY GfZUWHfUfA Yh 7cX GGH gAUcfA/ F. :Ug

@gh7dgh'8UY %SS\$% HRUladYg + GfjYhX *

7dghVcb D7= %%

hgNMfcb7caaYlg

QladYBi aVf. \$% HdY F 5fU)\$ \$\$\$G&h D7= +\$

QladY7caaYlg

(, @/ H7F @ %+'\$\$:h

(, @/ H7F A)\$\$:h

)+ K95H9F-B; A)\$ \$\$\$ G&h

QladYBi aVf. \$ HdY F 5fU (- (\$\$\$G&h D7= (-

QladY7caaYlg

(% 5@; 5HCF7F @ %\$\$\$ G&h

() 89DF9GCB @ %'\$\$ G&h

(, @/ H7F @ +'\$\$:h

(, @/ H7F A \$\$'\$\$:h

)+ K95H9F-B; A (- (\$\$\$ G&h

QladYBi aVf. \$ HdY F 5fU (- \$\$\$\$G&h D7=)-

QladY7caaYlg

(, @/ H7F @ '\$\$\$:h

(, @/ H7F A '\$\$\$\$:h

)& F5J9@B; @)\$\$\$\$ G&h

)+ K95H9F-B; A ((- \$\$\$\$ G&h

QladYBi aVf. \$ HdY F 5fU &(\$\$\$\$G&h D7= %%

QladY7caaYlg

(, @/ H7F @ (,'\$\$:h

(, @/ H7F A %\$\$\$:h

)+ K95H9F-B; A &(\$\$\$ G&h

QladYBi aVf. \$ HdY F 5fU &(\$\$\$\$G&h D7= *,

QladY7caaYlg

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(, @/ H7F A)\$\$\$:h

)& F5J9@B; @ , \$\$\$ G&h

)+ K95H9F-B; @ \$\$\$ \$\$\$ G&h

QladYBi aVf. \$ HdY F 5fU &*\$\$\$\$G&h D7= *(

QladY7caaYlg

(, @/ H7F @ (+\$\$:h

(, @/ H7F A +,'\$\$:h

)& F5J9@B; A '\$\$\$ G&h

)+ K95H9F-B; A &&'\$\$ G&h

BYkcf.	S7I		BLáY	Dinf: jYXFYjdbU5jfbfh			
GfUW	H7S&		BLáY	HIjkúir7dbNMfSSSWMf	Ig	H5L-K5M	5fU
GWch	S&	cZ &	: fca.	GWkbS%		H. HIjkúir5	@g7dbgH %S4S%
GfUW	D77	: Uá]m	5@SCHD77HIjkúig	NbY		7UHcfm	Fub. G
5fU		S\$ \$Gá h	@Y[h.	)) : h	K]h.	', : h	
GUg	)	GU@Y[h.	& : h	GUVK]h.	& : h	>ch@Y[h.	+(: h
Gci Xf.		GfYWHdY		; fUX \$		@bg \$	
GWcb7caa Ylg							
Kcf_8UY	%S4S%	Kcf_HdY	Bk7dbgVcb!h]U		7cX	BI!B	=AUcfA/ F. HiY
Kcf_8UY	%S4S%	Kcf_HdY	Bk7dbgVcb!h]U		7cX	BI!B	=AUcfA/ F. HiY
@g7dbgH	%S4S%		HUCladYg	%		GfjYX	%
7db]cbg	D7=	%S					
-bgNMcb7caa Ylg							
GládYBiaVf.	%	HdY	F	5fU)'SSGUg	D7=	%S
GládY7caa Ylg							
OBc8jgYg2							

APPENDIX E
DISTRESS SUMMARY REPORT



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o		o#			° OS u k#k° #M8°.....	O	U		o7	
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o		o#			OV8ey) @° Ouk° Vd°- lo° #k° #M8°.....	#)	U		7	
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o		o#			k° †- OS°.....	#)	U		o7	
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°		°#			OV80y) @° Ouk Vd- lo · #k° #M08'.....	#)	U			7	
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o		o#			OV8ey) @° Ouk Vcf- lo` #k° #M8.....	#)	U		7	
o		o#			k†- @8.....	#)	O		o7	
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o		oh#			"O #Mk° #M8.....	#)	U		o7	
o		oh#			OV8ey) @° Ouk Vcf- lo` #k° #M8.....	#)	U		7	
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o		oh#			k†- @8.....	#)	O		o7	
k		o#			OV8ey) @° Ouk Vcf- lo` #k° #M8.....	#)	O		7	
k		o#			OV8ey) @° Ouk Vcf- lo` #k° #M8.....	#)	U		7	
k		o#			k†- @8.....	#)	O		o7	
k		o#			‡ - ° u- k@8.....	#)	O		o7	
u		o#			OV8ey) @° Ouk Vcf- lo` #k° #M8.....	#)	O		7	
u		o#			OV8ey) @° Ouk Vcf- lo` #k° #M8.....	#)	U		7	

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u		°#			OV8ey) @° Ouk Vcf- ko` #k° #M8`.....	#)	U		7	
u		°#			‡ - °u- k08`	#)	O		o7	
u		°#			OV8ey) @° Ouk Vcf- ko` #k° #M8`.....	#)	O		7	
u		°#			OV8ey) @° Ouk Vcf- ko` #k° #M8`.....	#)	U		7	
u		°#			‡ - °u- k08`	#)	O		o7	
u		°#			OV8ey) @° Ouk Vcf- ko` #k° #M8`.....	#)	O		7	
u		°#			OV8ey) @° Ouk Vcf- ko` #k° #M8`.....	#)	U		7	
u		°#			‡ - °u- k08`	#)	O		o7	
u		°#			OV8ey) @° Ouk Vcf- ko` #k° #M8`.....	#)	=		7	
u		°#			OV8ey) @° Ouk Vcf- ko` #k° #M8`.....	#)	O		7	
u		°#			OV8ey) @° Ouk Vcf- ko` #k° #M8`.....	#)	U		7	
u		°#			k†- 08`	#)	O		o7	
u		°#			‡ - °u- k08`	#)	O		o7	

APPENDIX F

PAVEMENT CONDITION REPORTS

F1: Section Forecasted Pavement Condition Rating

F2: Branch PCI Rating

F3: Branch FOD Rating



Appendix F1
Forecasted Section PCI
Pryor Field Regional Airport (DCU)

Branch ID	Section ID	Forecasted PCI						
		2021	2022	2023	2024	2025	2026	2027
A01	01	71	69	67	65	62	60	58
A02	01	35	33	31	29	26	24	22
A02	02	64	62	60	58	55	53	51
A02	03	76	74	72	70	67	65	63
A02	04	38	36	34	32	29	27	25
A02	05	48	46	44	42	39	37	35
R1836	01	49	45	41	36	32	28	23
TA	01	74	71	68	64	60	55	50
TA1	01	63	59	54	49	46	44	40
TA2	01	66	62	58	53	48	45	43
TA3	01	65	60	56	51	47	45	41
TA4	01	48	45	42	39	35	32	28
TA5	01	63	59	54	49	46	44	40
TC01	01	79	77	75	72	70	66	62
TC02	01	60	55	50	47	45	41	38
TC02	02	100	100	100	99	99	99	98

6fUw7cbXjcbFYbch
DjYaYHSUUVgy 5@SCH7ca VbYSS%\$

6fUw7s	Bi a VfcZ GMjcbg	G a 'GMjcb' @b|h HE	5j| 'GMjcb' KPh HE	Hi Y5fU Rc: HE	I gy	5j MU Y D7=	GRbXEX 8Y Jcb' D7=	KM| \HX 5j MU Y D7=
5\$%	%	* \$'\$\$	&'\$\$	%% \$ '\$\$	5DFCB	+'\$\$	\$\$\$	+'\$\$
5\$&	)	& &'\$\$	%\$\$	&&)- '\$\$	5DFCB)+'\$\$	%*'\$\$)%-\$
F%| *	%	*2@-'\$\$	%\$\$	*%&-\$\$\$	FI BK5M	*%\$\$	\$\$\$	*%\$\$
H5	%	*Z+'\$\$	) '\$\$	' \$Z' %\$\$	H5L-K5M	+('\$\$	\$\$\$	+('\$\$
H5%	%	&)'\$\$	))'\$\$	%Z%'\$\$	H5L-K5M	+%\$\$	\$\$\$	+%\$\$
H5&	%	'%\$\$	+'\$\$	' *Z' &\$\$	H5L-K5M	+'\$\$	\$\$\$	+'\$\$
H5'	%	'%\$\$	+'\$\$	(Z%+'\$\$	H5L-K5M	+&\$\$	\$\$\$	+&\$\$
H5(	%	'%\$\$	+'\$\$	' (Z *'\$\$	H5L-K5M),'\$\$	\$\$\$),'\$\$
H5)	%	'%\$\$	* '\$\$	&Z+'\$\$	H5L-K5M	+%\$\$	\$\$\$	+%\$\$
H7\$%	%	%2)'\$\$	() '\$\$	)%Z' '\$\$	H5L-K5M	+'\$\$	\$\$\$	+'\$\$
H7\$&	&	%Z)) '\$\$	&'\$\$	' (Z(*'\$\$	H5L-K5M	, \$) \$	%)' \$	*' '\$

%#&\$\$
DJ Y&cZ&

6fubW7cbYhcbFYbch

DjYa YHSUWUy 5@BCH7ca VbYSS%\$

I gY7UW| cfm	Bi a VYfcZ GWM|cbg	HEU'5fYUQe: IL	5fh a YjW 5j YU| YD7=	5j YU| YGfB' D7=	KY| \ fX 5j YU| YD7=
5DFCB	*	'+(z* &\$\$	*S'!	%!,-	*& \$
FI BK5M	%	*%& \$\$SS	*%SS	\$SS	*%SS
H5L-K5M	-	) ) \$) ('SS	+ 'SS	%&	+&'!
5@@	%	%' *2% 'SS	*+'!	%'+	*)",

%%#\$\$\$

6fUw7cbXjcbFYdch

DjY%Z&

DjY YHSUUGY 5@SCH7ca VbYSS%\$

6fUw7s	Bi a VfcZ GMjcbg	G a 'GMjcb' @b|h HE	5j| 'GMjcb' KPh HE	Hi Y5fU Rc: E	I gY	5j YU Y : CS' DcHbJU	GRbXEX 8Y Jcb' : CS DcH	KM| \HX 5j YU Y : CS DcHb
5\$%	%	* \$\$\$	&'\$\$	%% \$ '\$	5DFCB	' '\$	\$\$\$	' '\$
5\$&	)	& &'\$\$	%\$\$	&&)- '\$	5DFCB)' '\$	%('\$)	*% \$
F% ' *	%	*2\$ '\$	%\$\$	*%& \$\$\$	FI BK5M)' '\$	\$\$\$)' '\$
H5	%	*Z+\$ '\$	) '\$	' \$Z' '\$	H5L-K5M	' - '\$	\$\$\$	' - '\$
H5%	%	&)' '\$	)' '\$	%Z% '\$	H5L-K5M	(\$\$\$	\$\$\$	(\$\$\$
H5&	%	'%\$\$	+\$	' *Z \$	H5L-K5M	(\$\$\$	\$\$\$	(\$\$\$
H5'	%	'%\$\$	+\$	(Z%+' '\$	H5L-K5M	(\$\$\$	\$\$\$	(\$\$\$
H5(	%	'%\$\$	+\$	' (Z * '\$	H5L-K5M)+' '\$	\$\$\$)+' '\$
H5)	%	'%\$\$	* '\$	&Z+\$ '\$	H5L-K5M	(\$\$\$	\$\$\$	(\$\$\$
H7\$%	%	%2)' '\$	() '\$	)%Z' '\$	H5L-K5M	'%\$\$	\$\$\$	'%\$\$
H7\$&	&	%Z)) '\$	&' '\$	' (Z (* '\$	H5L-K5M	&' '\$	&' '\$	(+' '\$

%#&\$\$
DjY&cZ&

6fubW7cbYhcbFYhfh

DjYaYHSUWUy 5@BCH7ca VbYSS%\$

I gY7UW| cfm	Bi a VYfcZ GWIcbg	HEU'5fYUQe: IL	5fha YfW 5j YU Y: CS	5j YU YGB' : CS DcHbJU	KY| \HX 5j YU Y: CS D
5DFCB	*	'+(z* &\$\$	)&'	%'9	)S(-
FI BK5M	%	*%&\$\$)' '\$\$	\$\$\$)' '\$\$
H5L-K5M	-	)\$)( '\$\$	', '%	%'%	(S(%
5@@	%	%' *2% '\$\$	((',	%' * &	(+', +

APPENDIX G

SAFETY AND PREVENTIVE MAINTENANCE POLICIES



Appendix G1
Localized Safety (Stopgap) Repair Policy

Distress	Distress Severity	Description	Code	Work Type	Work Unit
41	High	ALLIGATOR CR	PA-FD	Patching - AC Full-Depth	SqFt
43	High	BLOCK CR	CS-AC	Crack Sealing - AC	Ft
45	High	DEPRESSION	PA-FD	Patching - AC Full-Depth	SqFt
47	High	JT REF. CR	CS-AC	Crack Sealing - AC	Ft
48	High	L & T CR	CS-AC	Crack Sealing - AC	Ft
50	High	PATCHING	PA-FD	Patching - AC Full-Depth	SqFt
53	High	RUTTING	PA-FD	Patching - AC Full-Depth	SqFt
54	High	SHOVING	PA-PD	Patching - AC Partial-Depth	SqFt
55	NA	SLIPPAGE CR	PA-PD	Patching - AC Partial-Depth	SqFt
56	High	SWELLING	PA-FD	Patching - AC Full-Depth	SqFt
61	High	BLOW-UP	SL-PC	Slab Replacement - PCC	SqFt
61	Medium	BLOW-UP	PA-PF	Patching - PCC Full Depth	SqFt
62	High	CORNER BREAK	PA-PF	Patching - PCC Full Depth	SqFt
63	High	LINEAR CR	PA-PF	Patching - PCC Full Depth	SqFt
63	Medium	LINEAR CR	CS-PC	Crack Sealing - PCC	Ft
64	High	DURABIL. CR	SL-PC	Slab Replacement - PCC	SqFt
64	Medium	DURABIL. CR	PA-PF	Patching - PCC Full Depth	SqFt
66	High	SMALL PATCH	PA-PP	Patching - PCC Partial Depth	SqFt
67	High	LARGE PATCH	PA-PF	Patching - PCC Full Depth	SqFt
70	High	SCALING	SL-PC	Slab Replacement - PCC	SqFt
71	High	FAULTING	GR-PP	Grinding (Localized)	Ft
72	High	SHAT. SLAB	SL-PC	Slab Replacement - PCC	SqFt
74	High	JOINT SPALL	PA-PP	Patching - PCC Partial Depth	SqFt
75	High	CORNER SPALL	PA-PP	Patching - PCC Partial Depth	SqFt
76	High	ASR	SL-PC	Slab Replacement - PCC	SqFt

Appendix G2
Localized Preventive Repair Policy

Distress	Distress Severity	Description	Code	Work Type	Work Unit
41	Medium	ALLIGATOR CR	PA-AD	Patching - AC Full-Depth	SqFt
41	High	ALLIGATOR CR	PA-AD	Patching - AC Full-Depth	SqFt
42	N/A	BLEEDING	PA-AS	Patching - AC Partial-Depth	SqFt
43	High	BLOCK CR	PA-AD	Patching - AC Full-Depth	SqFt
43	Medium	BLOCK CR	CS-AC	Crack Sealing - AC	Ft
44	Low	CORRUGATION	PA-AS	Patching - AC Partial-Depth	SqFt
44	High	CORRUGATION	PA-AS	Patching - AC Partial-Depth	SqFt
44	Medium	CORRUGATION	PA-AS	Patching - AC Partial-Depth	SqFt
45	Medium	DEPRESSION	PA-AD	Patching - AC Full-Depth	SqFt
45	Low	DEPRESSION	PA-AD	Patching - AC Full-Depth	SqFt
45	High	DEPRESSION	PA-AD	Patching - AC Full-Depth	SqFt
47	High	JT REF. CR	CS-AC	Crack Sealing - AC	Ft
47	Medium	JT REF. CR	CS-AC	Crack Sealing - AC	Ft
48	High	L & T CR	CS-AC	Crack Sealing - AC	Ft
48	Medium	L & T CR	CS-AC	Crack Sealing - AC	Ft
49	N/A	OIL SPILLAGE	PA-AD	Patching - AC Full-Depth	SqFt
50	High	PATCHING	PA-AD	Patching - AC Full-Depth	SqFt
50	Medium	PATCHING	PA-AD	Patching - AC Full-Depth	SqFt
52	High	RAVELING	PA-AS	Patching - AC Partial-Depth	SqFt
53	High	RUTTING	PA-AD	Patching - AC Full-Depth	SqFt
53	Low	RUTTING	PA-AD	Patching - AC Full-Depth	SqFt
53	Medium	RUTTING	PA-AD	Patching - AC Full-Depth	SqFt
55	N/A	SLIPPAGE CR	PA-AD	Patching - AC Full-Depth	SqFt
56	Low	SWELLING	PA-AD	Patching - AC Full-Depth	SqFt
56	Medium	SWELLING	PA-AD	Patching - AC Full-Depth	SqFt
61	Low	BLOW-UP	PA-PF	Patching - PCC Full Depth	SqFt
61	Medium	BLOW-UP	PA-PF	Patching - PCC Full Depth	SqFt
61	High	BLOW-UP	PA-PF	Patching - PCC Full Depth	SqFt
62	Medium	CORNER BREAK	PA-PF	Patching - PCC Full Depth	SqFt
62	High	CORNER BREAK	PA-PF	Patching - PCC Full Depth	SqFt
62	Low	CORNER BREAK	CS-PC	Crack Sealing - PCC	Ft
63	Medium	LINEAR CR	CS-PC	Crack Sealing - PCC	Ft
63	High	LINEAR CR	PA-PP	Patching - PCC Partial Depth	SqFt
64	Medium	DURABIL. CR	PA-PF	Patching - PCC Full Depth	SqFt
64	High	DURABIL. CR	SL-PC	Slab Replacement - PCC	SqFt
65	High	JT SEAL DMG	JS-LC	Joint Seal (Localized)	Ft
65	Medium	JT SEAL DMG	JS-LC	Joint Seal (Localized)	Ft
66	High	SMALL PATCH	PA-PP	Patching - PCC Partial Depth	SqFt
66	Medium	SMALL PATCH	PA-PP	Patching - PCC Partial Depth	SqFt
67	Medium	LARGE PATCH	PA-PF	Patching - PCC Full Depth	SqFt

Appendix G2
Localized Preventive Repair Policy

Distress	Distress Severity	Description	Code	Work Type	Work Unit
67	High	LARGE PATCH	PA-PF	Patching - PCC Full Depth	SqFt
69	N/A	PUMPING	JS-LC	Joint Seal (Localized)	Ft
70	Medium	SCALING	PA-PP	Patching - PCC Partial Depth	SqFt
70	High	SCALING	SL-PC	Slab Replacement - PCC	SqFt
71	High	FAULTING	GR-PP	Grinding (Localized)	Ft
71	Medium	FAULTING	GR-PP	Grinding (Localized)	Ft
72	Medium	SHAT. SLAB	SL-PC	Slab Replacement - PCC	SqFt
72	High	SHAT. SLAB	SL-PC	Slab Replacement - PCC	SqFt
74	High	JOINT SPALL	PA-PP	Patching - PCC Partial Depth	SqFt
74	Medium	JOINT SPALL	PA-PP	Patching - PCC Partial Depth	SqFt
75	Medium	CORNER SPALL	PA-PP	Patching - PCC Partial Depth	SqFt
75	High	CORNER SPALL	PA-PP	Patching - PCC Partial Depth	SqFt
76	Medium	ASR	SL-PC	Slab Replacement - PCC	SqFt
76	High	ASR	SL-PC	Slab Replacement - PCC	SqFt

APPENDIX H

M&R UNIT COSTS

H1: M&R Unit Costs

H2: Component Costs for Repair

H3: Airport Category

Maintenance and Repair (M&R) Unit Costs

The M&R costs developed for the ALDOT PMP include costs for maintenance, preservation, and repair activities and are described below.

Unit Costs Source Data

The source for the M&R costs data is RSMMeans, which has data for 14 locations throughout Alabama, as identified by the yellow highlighted boxes in Figure 1. The cost data is presented in terms of individual line items like asphalt wearing course, aggregate base etc., which were consolidated to develop the activity costs described below.

The cost data show a distinct difference in costs between locations north and south of Birmingham, especially for the higher value items like the asphalt layers. Therefore, the unit costs were developed accordingly for the airports north and south of Birmingham, as identified in Figure 1. Appendix H2 presents the component costs used in developing the M&R costs.

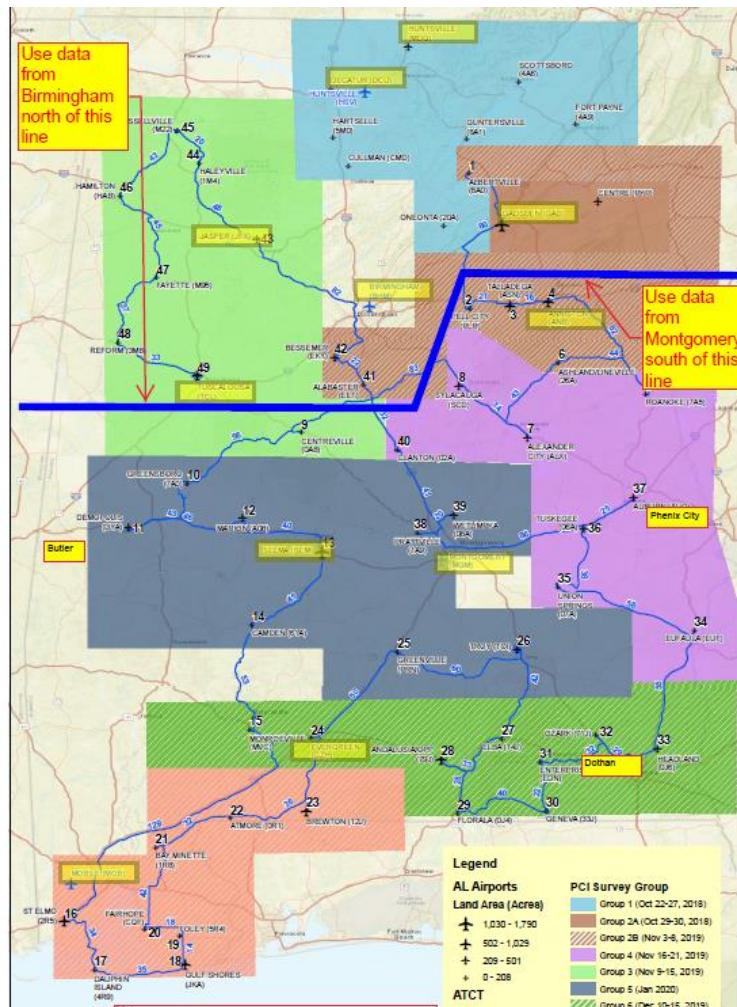


Figure 1: RSMMeans Unit Costs Locations.

Maintenance & Repair (M&R) Activities

Maintenance activities are localized activities which are typically assigned in the first year of the M&R plan based on the observed distresses.

Repair activities are further subdivided into preservation, rehabilitation, and reconstruction. Repair activities are conducted for larger areas, typically at the section level and are assigned based on the Critical Pavement Condition Index, denoted as CP in Table 1. The CP is based on the section’s rank or importance within the overall network and typically ranges from 55 to 70. The CP was set at 70 for the ALDOT runway pavements and 65 for the other pavements.

Table 1: Repair Activities.

Activity Type	PCI	Activity
Preservation	> CP	Runway Surface Treatment
		Taxiway and Apron Surface Treatment
Rehabilitation	> CP	2" AC OL ¹
	55 - CP	Mill 2" & 2" AC OL
	45 - 55	Mill 2" & 3" AC OL
Reconstruction	0 - 45	Reconstruct with AC

¹For Sections with Structural Distress and PCI greater than Critical PCI

The depths for the milling and overlay (AC OL) in Table 1 were established by creating a balance between removal of surficial distress and providing additional pavement structural capacity. All overlay options include full-depth patching to repair localized distresses.

From the FAA 5010 records, the Alabama airport network includes a wide range of allowable aircraft loads. The airports were divided into three categories of allowable aircraft loads based on requirements for minimum pavement thickness and the use of a P-401 surface layer. The categories are based on the aircraft maximum gross takeoff weight (MGTOW) and include: less than 12,500 lbs, 12,500 to 30,000 lbs, and 30,000 to 100,000 lbs. Appendix H3 presents the category for each airport.

For any sections requiring reconstruction, the pavement sections were established primarily in accordance with the requirements in Table 3 of the FAA’s Advisory Circular 150/5320-6F. The pavement sections used for developing the cost estimates are:

≤ 12,500 lbs	4" P-403 (State HMA Mix) + 6" P-209 Base
12,500 – 30,000 lbs	4" P-403 (State HMA Mix) + 8" P-209 Base
30,000 – 100,000 lbs	5" P-401 + 10" P-209 Base

It is important to note that while the FAA requires a stabilized base for those pavements that support aircraft operations with MGTOWs that are greater than 100,000 lbs, the number of such operations is minimal for those airports shown in Appendix H3. As a result, the cost of a stabilized base is excluded in the development of the unit costs for ALDOT’s PMP update. However, based on the Engineer’s future design and aircraft fleet mix development, project-level construction work could include the use of a stabilized base at that time.

M&R Unit Costs

Paving projects typically include additional project costs like mobilization, design, construction administration and inspections, and drainage improvements. A summary of non-direct pavement construction line items has been included in the unit costs in Tables 5 and 6 as described below. These non-direct items are expressed as a percentage of the total component costs for each activity.

These non-direct pavement construction items were developed from API’s extensive experience with APMP project cost estimation. These percentages may vary for Alabama airport construction projects; however, since the direct pavement scope of work is estimated in a network-level evaluation, these conservative estimates serve as a good starting point for the development of realistic total project costs and annual APMP budgets for ALDOT. For repair activities such as Mill & Overlay, which typically do not include significant drainage work, the corresponding multiplier was reduced by 50 percent. The non-direct cost factors are presented in Table 2.

Table 2: Cost Factors.

Factor	Function of	Estimate		
		Preservation	Rehabilitation	Reconstruction
Mobilization	All costs, less design	10%	10%	10%
Drainage Improvements	Paving costs	-	4%	8%
Contingency	All costs, less mobilization and design	10%	20%	20%
Design & CM	All costs, less mobilization and design	15%	20%	20%

The M&R unit costs for maintenance, preservation, and repair activities were developed from the RSMMeans cost data and are presented in the following section.

Maintenance

The maintenance activities include crack seal, and full and partial-depth patching. The unit costs are presented in Table 3.

Table 3: Unit Costs for Maintenance.

Activity	Unit Cost	Unit
Seal Cracks - AC	\$3.95	lf
AC Full-Depth Patching	\$25.05	sf
AC Partial-Dept Patching	\$16.28	sf
Seal Cracks – PCC	\$6.00	lf
PCC Full-Depth Patching	\$35.00	sf
PCC Partial-Depth Patching	\$175.00	sf
Jt. Seal	\$8.00	lf
Slab Replacement	\$20.00	sf

Preservation

The unit costs for the surface treatments are presented in Table 4. They include sealing of cracks and application of pavement markings.

Table 4: Unit Costs for Preservation Activities.

Activity	Unit Cost	Unit
Runway Surface Treatment	\$0.57	sf
Taxiway and Apron Surface Treatment	\$0.88	sf

Rehabilitation and Reconstruction

As discussed previously, repair activities are also divided into rehabilitation and reconstruction. The unit costs for airport repair for the Northern Region (Birmingham Area) and Southern Region (Montgomery Area) are shown in Tables 5 and 6, respectively.

Table 5: Unit Costs for Repair Activities, Northern Region.

Activity Type	Activity	MGTOW, thousand lbs		
		≤ 12.5	12.5-30	30-100
Rehabilitation	2" AC OL	\$3.78		\$4.19
	Mill 2" & 2" AC OL	\$4.15		\$4.56
	Mill 2" & 3" AC OL	\$5.18		\$5.79
Reconstruction	AC Reconstruction	\$8.40	\$9.10	\$10.91

Table 6: Unit Costs for Repair Activities, Southern Region.

Activity Type	Activity	MGTOW, thousand lbs		
		≤ 12.5	12.5-30	30-100
Rehabilitation	2" AC OL	\$3.54		\$3.91
	Mill 2" & 2" AC OL	\$3.90		\$4.27
	Mill 2" & 3" AC OL	\$4.82		\$5.37
Reconstruction	AC Reconstruction	\$7.63	\$8.25	\$9.87

Appendix H2
Component Costs for Repair

Activity Type	Unit	Birmingham (Northern)	Montgomery (Southern)	Comments
Milling 1" to 3"	SY	\$2.08	\$2.01	
Pavement Demolition	SY	\$6.34	\$6.12	
Haulage - For Demolition & AC	CY	\$6.08	\$5.87	
Haulage for 12" Thick Demolition	SY	\$2.03	\$1.96	
Haulage for 2" Thick AC Paving	SY	\$0.34	\$0.33	
Haulage for 3" Thick AC Paving	SY	\$0.51	\$0.49	
Haulage for 4" Thick AC Paving	SY	\$0.68	\$0.65	
AC Wearing Course	Ton	\$97.42	\$86.90	
AC Binder Course	Ton	\$87.80	\$78.17	
P401 - For airports with >60 kip aircraft	Ton	\$116.90	\$104.28	Assumed P401 cost to be 20% greater than AC Wearing Course
6" Aggregate Base (P208)	SY	\$10.17	\$9.12	
8" Aggregate Base (P208)	SY	\$13.29	\$11.89	
6" P209 Aggregate Base	SY	\$12.20	\$10.94	Assumed P209 cost to be 20% greater than P208
8" P209 Aggregate Base	SY	\$15.95	\$14.27	Assumed P209 cost to be 20% greater than P208
10" P209 Aggregate Base	SY	\$19.94	\$17.84	Direct multiplier for 10" from 8"
4" P154 Aggregate Base	SY	\$5.42	\$4.86	Assumed P154 cost to be 20% lower than P208
6" P154 Aggregate Base	SY	\$8.14	\$7.30	Assumed P154 cost to be 20% lower than P208
Pavement Markings	sf	\$1.48	\$1.39	

**Appendix H3
Airport Category**

Region	City	FAA ID	Max Gross Weight (Thousand lbs)			Max GW	Category
			S	D	2D		
Birmingham	Reform	3M8	12.5	-	-	12.5	<= 12,500
	Fayette	M95	15.0	-	-	15.0	12,500-30,000
	Hamilton	HAB	15.0	-	-	15.0	12,500-30,000
	Scottsboro	4A6	15.0	-	-	15.0	12,500-30,000
	Alabaster	EET	16.0	-	-	16.0	12,500-30,000
	Centre-Piedmont	PYP	16.0	-	-	16.0	12,500-30,000
	Fort Payne	4A9	16.0	-	-	16.0	12,500-30,000
	Haleyville	1M4	20.0	-	-	20.0	12,500-30,000
	Hartselle	5M0	20.0	-	-	20.0	12,500-30,000
	Guntersville	8A1	24.0	-	-	24.0	12,500-30,000
	Cullman	CMD	30.0	-	-	30.0	12,500-30,000
	Russellville	M22	30.0	-	-	30.0	12,500-30,000
	Jasper	JFX	50.0	-	-	50.0	> 30,000
	Oneonta	20A	20.0	35.0	55.0	55.0	> 30,000
	Bessemer	EKY	60.0	60.0	-	60.0	> 30,000
	Albertville	8A0	60.0	90.0	130.0	130.0	> 30,000
	Madison	MDQ	60.0	75.0	140.0	140.0	> 30,000
	Decatur	DCU	75.0	125.0	150.0	150.0	> 30,000
	Tuscaloosa	TCL	61.0	87.0	168.0	168.0	> 30,000
	Gadsden	GAD	90.0	115.0	195.0	195.0	> 30,000
Montgomery	Floralia	0J4	-	-	-	-	<= 12,500
	Elba	14J	4.0	-	-	4.0	<= 12,500
	Headland	0J6	12.0	-	-	12.0	<= 12,500
	Roanoke	7A5	12.0	-	-	12.0	<= 12,500
	Greenville	PRN	15.0	-	-	15.0	12,500-30,000
	Union Springs	07A	15.0	-	-	15.0	12,500-30,000
	Wetumpka	08A	15.0	-	-	15.0	12,500-30,000
	Atmore	0R1	16.0	-	-	16.0	12,500-30,000
	Clanton	02A	16.0	-	-	16.0	12,500-30,000
	Eufaula	EUF	16.0	-	-	16.0	12,500-30,000
	Geneva	33J	16.0	-	-	16.0	12,500-30,000
	Greensboro	7A0	16.0	-	-	16.0	12,500-30,000
	Centreville	0A8	18.0	-	-	18.0	12,500-30,000
	Ashland-Lineville	26A	20.0	-	-	20.0	12,500-30,000
	Sylacauga	SCD	20.0	-	-	20.0	12,500-30,000
	St. Elmo	2R5	23.0	-	-	23.0	12,500-30,000
	Ozark	71J	-	25.0	-	25.0	12,500-30,000
	Camden	61A	27.0	-	-	27.0	12,500-30,000
	Bay Minette	1R8	28.0	-	-	28.0	12,500-30,000
	Foley	5R4	28.0	-	-	28.0	12,500-30,000
Tuskegee	06A	28.5	-	-	28.5	12,500-30,000	

**Appendix H3
Airport Category**

Region	City	FAA ID	Max Gross Weight (Thousand lbs)			Max GW	Category
			S	D	2D		
Montgomery	Alexander City	ALX	30.0	-	-	30.0	12,500-30,000
	Dauphin Island	4R9	30.0	-	-	30.0	12,500-30,000
	Pell City	PLR	30.0	-	-	30.0	12,500-30,000
	Prattville	1A9	30.0	-	-	30.0	12,500-30,000
	Enterprise	EDN	-	-	-	-	> 30,000
	Evergreen	GZH	30.0	50.0	-	50.0	> 30,000
	Marion	A08	30.0	50.0	-	50.0	> 30,000
	Selma	SEM	33.0	54.0	-	54.0	> 30,000
	Fairhope	CQF	36.0	58.0	-	58.0	> 30,000
	Brewton	12J	40.0	60.0	-	60.0	> 30,000
	Demopolis	DYA	30.0	38.0	60.0	60.0	> 30,000
	Monroeville	MVC	70.0	-	-	70.0	> 30,000
	Auburn-Opelika	AUO	45.0	75.0	-	75.0	> 30,000
	Talladega	ASN	30.0	65.0	95.0	95.0	> 30,000
	Gulf Shores	JKA	80.0	100.0	-	100.0	> 30,000
	Troy	TOI	24.0	80.0	140.0	140.0	> 30,000
	Anniston	ANB	28.0	43.5	260.0	260.0	> 30,000
Andalusia-OPP	79J	98.0	160.0	275.0	275.0	> 30,000	

APPENDIX I

PAVEMENT CAPITAL IMPROVEMENT PROGRAM

I1: PCIP Summary

I2: Year 1 Maintenance Plan



Appendix I1
PCIIP Summary
Pryor Field Regional Airport (DCU)

Branch & Section	2021	2022	2023	2024	2025	2026	2027
A01 01	Preventive \$4641.74 Before:71.14 After:71.14	Preventive \$5853.07 Before:68.93 After:68.93	Preventive \$7932.37 Before:66.72 After:66.72	Required Project Major Below Critical \$830562.39 Before:64.51 After:100	Preventive \$413.07 Before:97.78 After:97.78	Preventive \$849.18 Before:95.57 After:95.57	Preventive + Required Project Global MR \$114643.19 Before:93.36 After:97.79
A02 01	StopGap \$2753.55 Before:35.14 After:35.14	Required Project Major Below Critical \$260133.12 Before:32.93 After:100	Preventive \$53.8 Before:97.79 After:97.79	Preventive \$110.83 Before:95.58 After:95.58	Preventive + Required Project Global MR \$14997.75 Before:93.36 After:97.79	Preventive \$117.58 Before:95.58 After:95.58	Preventive \$181.66 Before:93.37 After:93.37
A02 02	StopGap \$238.31 Before:64.14 After:64.14	StopGap \$279.64 Before:61.93 After:61.93	StopGap \$322.8 Before:59.72 After:59.72	StopGap \$365.47 Before:57.51 After:57.51	Required Project Major Below Critical \$98784 Before:55.3 After:100	Preventive \$38.47 Before:97.79 After:97.79	Preventive \$79.25 Before:95.58 After:95.58
A02 03	Preventive + Required Project Global MR \$28592.49 Before:76.14 After:82.78	Preventive \$646.76 Before:80.57 After:80.57	Preventive \$736.93 Before:78.36 After:78.36	Preventive \$829.99 Before:76.15 After:76.15	Preventive \$927.98 Before:73.94 After:73.94	Preventive \$1031.1 Before:71.73 After:71.73	Preventive \$1213.6 Before:69.52 After:69.52

Appendix I1
PCIP Summary
Pryor Field Regional Airport (DCU)

Branch & Section	2021	2022	2023	2024	2025	2026	2027
A02 04	StopGap \$7622.61 Before:38.14 After:38.14	Required Project Major Below Critical \$1233293.16 Before:35.93 After:100	Preventive \$255.08 Before:97.79 After:97.79	Preventive \$525.46 Before:95.58 After:95.58	Preventive + Required Project Global MR \$71104.45 Before:93.36 After:97.79	Preventive \$557.46 Before:95.58 After:95.58	Preventive \$861.27 Before:93.37 After:93.37
A02 05	StopGap \$1191.48 Before:48.14 After:48.14	Required Project Major Below Critical \$231639.75 Before:45.93 After:100	Preventive \$90.21 Before:97.79 After:97.79	Preventive \$185.83 Before:95.58 After:95.58	Preventive + Required Project Global MR \$25146.47 Before:93.36 After:97.79	Preventive \$197.15 Before:95.58 After:95.58	Preventive \$304.59 Before:93.37 After:93.37
R1836 01	StopGap \$13174.07 Before:58.78 After:58.78	StopGap \$16771.7 Before:53.3 After:53.3	StopGap \$19899.18 Before:49.04 After:49.04	StopGap \$23403.81 Before:44.77 After:44.77	Required Project Major Below Critical \$4103904 Before:40.5 After:100	Preventive \$940.55 Before:98.7 After:98.7	Preventive \$1876.55 Before:97.48 After:97.48
TA 01	Preventive \$8096.4 Before:73.56 After:73.56	Preventive \$9072.36 Before:71.06 After:71.06	StopGap \$3989.7 Before:67.99 After:67.99	StopGap \$5403.49 Before:64.21 After:64.21	StopGap \$7132.42 Before:59.74 After:59.74	Required Project Major Below Critical \$1670048.95 Before:54.84 After:100	Preventive \$380.72 Before:98.98 After:98.98

Appendix I1
PCIP Summary
Pryor Field Regional Airport (DCU)

Branch & Section	2021	2022	2023	2024	2025	2026	2027
TA1 01	StopGap \$324.73 Before:63.29 After:63.29	StopGap \$424 Before:58.7 After:58.7	StopGap \$529.31 Before:53.76 After:53.76	StopGap \$636.89 Before:49.1 After:49.1	Required Project Major Below Critical \$127794.24 Before:45.78 After:100	Preventive \$22.94 Before:98.98 After:98.98	Preventive \$50 Before:97.85 After:97.85
TA2 01	StopGap \$501.14 Before:66.41 After:66.41	StopGap \$671.2 Before:62.33 After:62.33	StopGap \$866.66 Before:57.63 After:57.63	StopGap \$1073.98 Before:52.68 After:52.68	Required Project Major Below Critical \$242471.04 Before:48.2 After:100	Preventive \$43.52 Before:98.98 After:98.98	Preventive \$94.86 Before:97.85 After:97.85
TA3 01	StopGap \$622.59 Before:64.84 After:64.84	StopGap \$825.42 Before:60.48 After:60.48	StopGap \$1044.62 Before:55.62 After:55.62	StopGap \$1274.18 Before:50.76 After:50.76	Required Project Major Below Critical \$269989.44 Before:46.77 After:100	Preventive \$48.46 Before:98.98 After:98.98	Preventive \$105.63 Before:97.85 After:97.85
TA4 01	StopGap \$634.16 Before:61.8 After:61.8	StopGap \$814.36 Before:57.04 After:57.04	StopGap \$1004.46 Before:52.11 After:52.11	StopGap \$1192.78 Before:47.76 After:47.76	Required Project Major Below Critical \$229125.12 Before:45.23 After:100	Preventive \$41.13 Before:98.98 After:98.98	Preventive \$89.64 Before:97.85 After:97.85
TA5 01	StopGap \$491.3 Before:63.29 After:63.29	StopGap \$641.49 Before:58.7 After:58.7	StopGap \$800.83 Before:53.76 After:53.76	StopGap \$963.59 Before:49.1 After:49.1	Required Project Major Below Critical \$193347.84 Before:45.78 After:100	Preventive \$34.71 Before:98.98 After:98.98	Preventive \$75.64 Before:97.85 After:97.85

Appendix I1
PCIP Summary
Pryor Field Regional Airport (DCU)

Branch & Section	2021	2022	2023	2024	2025	2026	2027
TC01 01	Preventive \$1113.29 Before:78.61 After:78.61	Preventive \$1242.29 Before:76.66 After:76.66	Preventive \$1381.06 Before:74.65 After:74.65	Preventive \$1541.59 Before:72.36 After:72.36	StopGap \$613.92 Before:69.58 After:69.58	Required Project Major Below Critical \$279219.85 Before:66.15 After:100	Preventive \$63.65 Before:98.98 After:98.98
TC02 01	StopGap \$664.61 Before:60.09 After:60.09	StopGap \$837.41 Before:55.21 After:55.21	StopGap \$1018.03 Before:50.38 After:50.38	StopGap \$1187.85 Before:46.53 After:46.53	Required Project Major Below Critical \$219515.52 Before:44.72 After:100	Preventive \$39.4 Before:98.98 After:98.98	Preventive \$85.88 Before:97.85 After:97.85
TC02 02	Do Nothing Before:99.87 After:99.87	Do Nothing Before:99.72 After:99.72	Do Nothing Before:99.53 After:99.53	Do Nothing Before:99.27 After:99.27	Do Nothing Before:98.97 After:98.97	Do Nothing Before:98.6 After:98.6	Do Nothing Before:98.19 After:98.19

Appendix I2
Localized Maintenance Plan
Pryor Field Regional Airport (DCU)

Branch ID	Section ID	Policy	Distress Code	Description	Severity	Distress Qty	Distress Unit	Percent Distress	Work Description	Work Qty	Work Unit	Unit Cost	Work Cost
A01	01	Preventive	48	L & T CR	Low	2,765	Ft	1.71	No Localized M & R	0		\$0.00	\$0
A01	01	Preventive	48	L & T CR	Medium	4,969	Ft	3.07	Crack Sealing - AC	4,969	Ft	\$3.95	\$19,626
A02	01	Safety	41	ALLIGATOR CR	High	233	SqFt	1.04	Patching - AC Full-Depth	299	SqFt	\$25.05	\$7,484
A02	01	Safety	41	ALLIGATOR CR	Medium	156	SqFt	0.69	No Localized M & R	0		\$0.00	\$0
A02	01	Safety	48	L & T CR	High	209	Ft	0.93	Crack Sealing - AC	209	Ft	\$3.95	\$826
A02	01	Safety	48	L & T CR	Medium	1,881	Ft	8.37	No Localized M & R	0		\$0.00	\$0
A02	01	Safety	50	PATCHING	Low	1,361	SqFt	6.06	No Localized M & R	0		\$0.00	\$0
A02	01	Safety	52	RAVELING	High	15	SqFt	0.06	No Localized M & R	0		\$0.00	\$0
A02	01	Safety	52	RAVELING	Medium	4,364	SqFt	19.43	No Localized M & R	0		\$0.00	\$0
A02	01	Safety	57	WEATHERING	Low	16,724	SqFt	74.45	No Localized M & R	0		\$0.00	\$0
A02	02	Preventive	43	BLOCK CR	Low	200	SqFt	1.36	No Localized M & R	0		\$0.00	\$0
A02	02	Preventive	45	DEPRESSION	Low	10	SqFt	0.07	Patching - AC Full-Depth	27	SqFt	\$25.05	\$670
A02	02	Preventive	48	L & T CR	Low	114	Ft	0.78	No Localized M & R	0		\$0.00	\$0
A02	02	Preventive	48	L & T CR	Medium	413	Ft	2.81	Crack Sealing - AC	413	Ft	\$3.95	\$1,631
A02	02	Preventive	57	WEATHERING	Low	9,975	SqFt	67.86	No Localized M & R	0		\$0.00	\$0
A02	02	Preventive	57	WEATHERING	Medium	4,725	SqFt	32.14	No Localized M & R	0		\$0.00	\$0
A02	03	Preventive	48	L & T CR	Low	977	Ft	3.09	No Localized M & R	0		\$0.00	\$0
A02	03	Preventive	48	L & T CR	Medium	534	Ft	1.69	Crack Sealing - AC	534	Ft	\$3.95	\$2,110
A02	03	Preventive	49	OIL SPILLAGE	N/A	4	SqFt	0.01	Patching - AC Full-Depth	16	SqFt	\$25.05	\$396
A02	04	Safety	48	L & T CR	Low	606	Ft	0.57	No Localized M & R	0		\$0.00	\$0
A02	04	Safety	48	L & T CR	Medium	3,983	Ft	3.74	No Localized M & R	0		\$0.00	\$0
A02	04	Safety	52	RAVELING	Low	29,553	SqFt	27.75	No Localized M & R	0		\$0.00	\$0
A02	04	Safety	52	RAVELING	Medium	76,949	SqFt	72.25	No Localized M & R	0		\$0.00	\$0
A02	05	Safety	43	BLOCK CR	Medium	706	SqFt	1.88	No Localized M & R	0		\$0.00	\$0
A02	05	Safety	48	L & T CR	Medium	3,837	Ft	10.19	No Localized M & R	0		\$0.00	\$0
A02	05	Safety	50	PATCHING	Low	1,177	SqFt	3.12	No Localized M & R	0		\$0.00	\$0
A02	05	Safety	52	RAVELING	Low	36,488	SqFt	96.88	No Localized M & R	0		\$0.00	\$0
R1836	01	Safety	48	L & T CR	Low	29,809	Ft	4.88	No Localized M & R	0		\$0.00	\$0
R1836	01	Safety	48	L & T CR	Medium	32,747	Ft	5.36	No Localized M & R	0		\$0.00	\$0

Appendix I2
Localized Maintenance Plan
Pryor Field Regional Airport (DCU)

Branch ID	Section ID	Policy	Distress Code	Description	Severity	Distress Qty	Distress Unit	Percent Distress	Work Description	Work Qty	Work Unit	Unit Cost	Work Cost
R1836	01	Safety	52	RAVELING	Low	8,482	SqFt	1.39	No Localized M & R	0		\$0.00	\$0
R1836	01	Safety	57	WEATHERING	Low	602,218	SqFt	98.61	No Localized M & R	0		\$0.00	\$0
TA	01	Preventive	48	L & T CR	Low	5,546	Ft	1.81	No Localized M & R	0		\$0.00	\$0
TA	01	Preventive	48	L & T CR	Medium	12,453	Ft	4.06	Crack Sealing - AC	12,453	Ft	\$3.95	\$49,191
TA1	01	Preventive	48	L & T CR	Low	318	Ft	1.67	No Localized M & R	0		\$0.00	\$0
TA1	01	Preventive	48	L & T CR	Medium	833	Ft	4.38	Crack Sealing - AC	833	Ft	\$3.95	\$3,291
TA1	01	Preventive	57	WEATHERING	Low	3,436	SqFt	18.07	No Localized M & R	0		\$0.00	\$0
TA2	01	Preventive	48	L & T CR	Low	984	Ft	2.73	No Localized M & R	0		\$0.00	\$0
TA2	01	Preventive	48	L & T CR	Medium	1,020	Ft	2.83	Crack Sealing - AC	1,020	Ft	\$3.95	\$4,027
TA2	01	Preventive	57	WEATHERING	Low	25,718	SqFt	71.28	No Localized M & R	0		\$0.00	\$0
TA3	01	Preventive	48	L & T CR	Low	447	Ft	1.11	No Localized M & R	0		\$0.00	\$0
TA3	01	Preventive	48	L & T CR	Medium	1,749	Ft	4.35	Crack Sealing - AC	1,749	Ft	\$3.95	\$6,909
TA3	01	Preventive	57	WEATHERING	Low	22,271	SqFt	55.43	No Localized M & R	0		\$0.00	\$0
TA4	01	Safety	48	L & T CR	High	9	Ft	0.03	Crack Sealing - AC	9	Ft	\$3.95	\$34
TA4	01	Safety	48	L & T CR	Low	1,209	Ft	3.55	No Localized M & R	0		\$0.00	\$0
TA4	01	Safety	48	L & T CR	Medium	2,515	Ft	7.38	No Localized M & R	0		\$0.00	\$0
TA4	01	Safety	52	RAVELING	Low	131	SqFt	0.38	No Localized M & R	0		\$0.00	\$0
TA4	01	Safety	57	WEATHERING	Low	22,647	SqFt	66.42	No Localized M & R	0		\$0.00	\$0
TA5	01	Preventive	48	L & T CR	Low	395	Ft	1.37	No Localized M & R	0		\$0.00	\$0
TA5	01	Preventive	48	L & T CR	Medium	938	Ft	3.26	Crack Sealing - AC	938	Ft	\$3.95	\$3,706
TA5	01	Preventive	57	WEATHERING	Low	28,772	SqFt	100	No Localized M & R	0		\$0.00	\$0
TC01	01	Preventive	45	DEPRESSION	Low	163	SqFt	0.32	Patching - AC Full-Depth	219	SqFt	\$25.05	\$5,479
TC01	01	Preventive	45	DEPRESSION	Medium	12	SqFt	0.02	Patching - AC Full-Depth	30	SqFt	\$25.05	\$750
TC01	01	Preventive	48	L & T CR	Low	501	Ft	0.98	No Localized M & R	0		\$0.00	\$0
TC01	01	Preventive	48	L & T CR	Medium	693	Ft	1.35	Crack Sealing - AC	693	Ft	\$3.95	\$2,738
TC01	01	Preventive	50	PATCHING	Low	329	SqFt	0.64	No Localized M & R	0		\$0.00	\$0
TC01	01	Preventive	57	WEATHERING	Low	32,376	SqFt	63.19	No Localized M & R	0		\$0.00	\$0
TC02	01	Safety	41	ALLIGATOR CR	Low	221	SqFt	0.68	No Localized M & R	0		\$0.00	\$0
TC02	01	Safety	45	DEPRESSION	Low	22	SqFt	0.07	No Localized M & R	0		\$0.00	\$0

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Branch ID	Section ID	Policy	Distress Code	Description	Severity	Distress Qty	Distress Unit	Percent Distress	Work Description	Work Qty	Work Unit	Unit Cost	Work Cost
TC02	01	Safety	48	L & T CR	Low	612	Ft	1.87	No Localized M & R	0		\$0.00	\$0
TC02	01	Safety	48	L & T CR	Medium	1,280	Ft	3.92	No Localized M & R	0		\$0.00	\$0
TC02	01	Safety	52	RAVELING	Low	855	SqFt	2.62	No Localized M & R	0		\$0.00	\$0
TC02	01	Safety	52	RAVELING	Medium	47	SqFt	0.14	No Localized M & R	0		\$0.00	\$0
TC02	01	Safety	57	WEATHERING	Low	3,331	SqFt	10.2	No Localized M & R	0		\$0.00	\$0
TC02	01	Safety	57	WEATHERING	Medium	28,432	SqFt	87.04	No Localized M & R	0		\$0.00	\$0