

HARLOWTON AIRPORT

Branch: 22A

APRON

A-11

Length: 230 LF

Width: 220 LF

Area: 50,600 SF

Last Const: 1997

Family: ACAM

From: T-1

To: HANGARS

Surface: AC

Inspections

Samples Surveyed: 4

Total Samples: 8

Last Inspection Date: 8/31/2012

PCI: 65

Sample # 2

Area: 6,160 SF

Distress Description	Severity	Quantity
LONGITUDINAL/TRANSVERSE CRACKING	L	124 LF
LONGITUDINAL/TRANSVERSE CRACKING	M	110 LF
WEATHERING	L	4,928 SF

Sample # 5

Area: 6,160 SF

Distress Description	Severity	Quantity
ALLIGATOR CRACKING	L	224 SF
LONGITUDINAL/TRANSVERSE CRACKING	L	139 LF
LONGITUDINAL/TRANSVERSE CRACKING	M	109 LF
RAVELING	L	2 SF
WEATHERING	L	4,928 SF

Sample # 6

Area: 6,160 SF

Distress Description	Severity	Quantity
LONGITUDINAL/TRANSVERSE CRACKING	L	141 LF
LONGITUDINAL/TRANSVERSE CRACKING	M	90 LF
WEATHERING	L	4,928 SF

Sample # 8

Area: 6,160 SF

Distress Description	Severity	Quantity
ALLIGATOR CRACKING	M	80 SF
LONGITUDINAL/TRANSVERSE CRACKING	L	95 LF
LONGITUDINAL/TRANSVERSE CRACKING	M	140 LF
OIL SPILLAGE	N	6 SF

Extrapolated Distress Quantities*

Distress Description	Severity	Quantity	Density	Deduct
ALLIGATOR CRACKING	L	460 SF	0.91%	19.61
ALLIGATOR CRACKING	M	164 SF	0.32%	19.28
LONGITUDINAL/TRANSVERSE CRACKING	L	1,025 LF	2.03%	7.48
LONGITUDINAL/TRANSVERSE CRACKING	M	922 LF	1.82%	14.98
OIL SPILLAGE	N	12 SF	0.02%	2.00
RAVELING	L	4 SF	0.01%	1.00
WEATHERING	L	30,360 SF	60.00%	5.20

* Multiple deduct values are scaled down from their algebraic sum to keep the model consistent with experimental data.

Percent of Deduct Values Based on Distress Mechanism

56.0 % Load

41.0 % Climate/Durability

3.0 % Other

HARLOWTON AIRPORT

Branch: 22R RUNWAY

R-11

Length: 4,200 LF Width: 60 LF Area: 273,600 SF Last Const: 1997 Family: ACRML
 From: 12+00 To: 54+00 Surface: AC

Inspections

Samples Surveyed: 7 Total Samples: 46 Last Inspection Date: 8/31/2012 **PCI: 64**

Sample #	Distress Description	Severity	Quantity	Area:
3	LONGITUDINAL/TRANSVERSE CRACKING	L	43 LF	6,000 SF
	LONGITUDINAL/TRANSVERSE CRACKING	M	247 LF	
	WEATHERING	L	5,400 SF	
10	LONGITUDINAL/TRANSVERSE CRACKING	L	191 LF	6,000 SF
	LONGITUDINAL/TRANSVERSE CRACKING	M	279 LF	
	PATCHING	L	7 SF	
	WEATHERING	L	5,400 SF	
17	LONGITUDINAL/TRANSVERSE CRACKING	L	161 LF	6,000 SF
	LONGITUDINAL/TRANSVERSE CRACKING	M	244 LF	
	WEATHERING	L	5,400 SF	
24	DEPRESSION	H	3 SF	6,000 SF
	LONGITUDINAL/TRANSVERSE CRACKING	L	63 LF	
	LONGITUDINAL/TRANSVERSE CRACKING	M	304 LF	
	PATCHING	M	6 SF	
	WEATHERING	L	5,400 SF	
31	LONGITUDINAL/TRANSVERSE CRACKING	L	237 LF	6,000 SF
	LONGITUDINAL/TRANSVERSE CRACKING	M	254 LF	
	PATCHING	L	1 SF	
	WEATHERING	L	5,400 SF	
38	LONGITUDINAL/TRANSVERSE CRACKING	L	208 LF	6,000 SF
	LONGITUDINAL/TRANSVERSE CRACKING	M	284 LF	
	WEATHERING	L	5,400 SF	
45	LONGITUDINAL/TRANSVERSE CRACKING	L	51 LF	6,000 SF
	LONGITUDINAL/TRANSVERSE CRACKING	M	316 LF	
	WEATHERING	L	5,400 SF	

HARLOWTON AIRPORT

Branch: 22R

RUNWAY

R-11

Extrapolated Distress Quantities*				
Distress Description	Severity	Quantity	Density	Deduct
DEPRESSION	H	20 F	0.01%	12.00
LONGITUDINAL/TRANSVERSE CRACKING	L	6,215 LF	2.27%	8.13
LONGITUDINAL/TRANSVERSE CRACKING	M	12,560 LF	4.59%	24.54
PATCHING	L	52 SF	0.02%	2.00
PATCHING	M	39 SF	0.01%	6.20
WEATHERING	L	246,240 SF	90.00%	5.86

* Multiple deduct values are scaled down from their algebraic sum to keep the model consistent with experimental data.

Percent of Deduct Values Based on Distress Mechanism		
0.0 % Load	80.0 % Climate/Durability	20.0 % Other

HARLOWTON AIRPORT

Branch: 22T TAXIWAY T-11

Length: 487 LF Width: 35 LF Area: 17,045 SF Last Const: 1997 Family: ACRML
 From: R-11 To: A-11 Surface: AC

Inspections

Samples Surveyed: 3 Total Samples: 4 Last Inspection Date: 8/31/2012 **PCI: 61**

<p>Sample # 2</p> <p>Distress Description LONGITUDINAL/TRANSVERSE CRACKING LONGITUDINAL/TRANSVERSE CRACKING WEATHERING</p>	<p>Severity L M L</p>	<p>Quantity 116 LF 8 LF 3,360 SF</p>	<p>Area: 4,200 SF</p>
<p>Sample # 3</p> <p>Distress Description ALLIGATOR CRACKING LONGITUDINAL/TRANSVERSE CRACKING LONGITUDINAL/TRANSVERSE CRACKING WEATHERING</p>	<p>Severity L L M L</p>	<p>Quantity 165 SF 43 LF 36 LF 3,360 SF</p>	<p>Area: 4,200 SF</p>
<p>Sample # 4</p> <p>Distress Description ALLIGATOR CRACKING LONGITUDINAL/TRANSVERSE CRACKING LONGITUDINAL/TRANSVERSE CRACKING LONGITUDINAL/TRANSVERSE CRACKING WEATHERING</p>	<p>Severity L L M H L</p>	<p>Quantity 99 SF 73 LF 116 LF 1 LF 3,360 SF</p>	<p>Area: 4,200 SF</p>

Extrapolated Distress Quantities*

Distress Description	Severity	Quantity	Density	Deduct
ALLIGATOR CRACKING	L	357 SF	2.10%	27.55
LONGITUDINAL/TRANSVERSE CRACKING	L	314 LF	1.84%	6.99
LONGITUDINAL/TRANSVERSE CRACKING	M	216 LF	1.27%	12.54
LONGITUDINAL/TRANSVERSE CRACKING	H	1 LF	0.01%	7.50
WEATHERING	L	13,636 SF	80.00%	5.71

* Multiple deduct values are scaled down from their algebraic sum to keep the model consistent with experimental data.

Percent of Deduct Values Based on Distress Mechanism

46.0 % Load 54.0 % Climate/Durability 0.0 % Other

HARLOWTON AIRPORT

FIRST YEAR LOCAL: 2013

LOCAL REPAIR COST: \$48,036

Section	Distress Description	Severity	Quantity	Work Description	Quantity	Cost	Policy
A-11	ALLIGATOR CR	M	164 SF	Patching - AC Deep	220 SF	\$8,795	PREV.
A-11	L & T CR	M	922 LF	Crack Sealing - AC	922 LF	\$2,305	PREV.
A-11	OIL SPILLAGE	N	12 SF	Patching - AC Shallow	30 SF	\$609	PREV.
R-11	DEPRESSION	H	20 SF	Patching - AC Deep	41 SF	\$1,653	PREV.
R-11	L & T CR	M	12,560 LF	Crack Sealing - AC	12,560 LF	\$31,399	PREV.
R-11	PATCHING	M	39 SF	Patching - AC Deep	68 SF	\$2,730	PREV.
T-11	L & T CR	H	1 LF	Crack Sealing - AC	1 LF	\$3	PREV.
T-11	L & T CR	M	216 LF	Crack Sealing - AC	216 LF	\$541	PREV.

FIFTEEN YEAR PROJECTIONS

ESTIMATED AVERAGE ANNUAL COST: \$109,078

Plan Year: 2013				Estimated Cost: \$309,573		PCI		
Section	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	Before	After
A-11	Major Above Critical	\$0	\$0	\$0	\$147,878	\$147,878	64	100
R-11	Global MR + Preventive	\$32,614	\$68,401	\$0	\$0	\$101,015	63	66
T-11	Major Below Critical	\$0	\$0	\$60,680	\$0	\$60,680	60	100
Plan Year: 2014				Estimated Cost: \$29,055		PCI		
R-11	Preventive	\$29,055	\$0	\$0	\$0	\$29,055	65	65
Plan Year: 2015				Estimated Cost: \$33,902		PCI		
R-11	Preventive	\$33,902	\$0	\$0	\$0	\$33,902	63	63
Plan Year: 2016				Estimated Cost: \$40,339		PCI		
A-11	Preventive	\$117	\$0	\$0	\$0	\$117	88	88
R-11	Preventive	\$40,182	\$0	\$0	\$0	\$40,182	62	62
T-11	Preventive	\$40	\$0	\$0	\$0	\$40	88	88
Plan Year: 2017				Estimated Cost: \$1,109,605		PCI		
A-11	Preventive	\$306	\$0	\$0	\$0	\$306	85	85
R-11	Major Below Critical	\$0	\$0	\$1,109,197	\$0	\$1,109,197	59	100
T-11	Preventive	\$102	\$0	\$0	\$0	\$102	85	85
Plan Year: 2018				Estimated Cost: \$655		PCI		
A-11	Preventive	\$493	\$0	\$0	\$0	\$493	82	82
T-11	Preventive	\$161	\$0	\$0	\$0	\$161	82	82
Plan Year: 2019				Estimated Cost: \$1,164		PCI		
A-11	Preventive	\$904	\$0	\$0	\$0	\$904	79	79
T-11	Preventive	\$261	\$0	\$0	\$0	\$261	79	79
Plan Year: 2020				Estimated Cost: \$2,761		PCI		
A-11	Preventive	\$1,590	\$0	\$0	\$0	\$1,590	76	76
R-11	Preventive	\$716	\$0	\$0	\$0	\$716	88	88
T-11	Preventive	\$455	\$0	\$0	\$0	\$455	77	77
Plan Year: 2021				Estimated Cost: \$4,740		PCI		
A-11	Preventive	\$2,269	\$0	\$0	\$0	\$2,269	74	74
R-11	Preventive	\$1,839	\$0	\$0	\$0	\$1,839	85	85
T-11	Preventive	\$633	\$0	\$0	\$0	\$633	75	75
Plan Year: 2022				Estimated Cost: \$6,657		PCI		
A-11	Preventive	\$2,945	\$0	\$0	\$0	\$2,945	71	71
R-11	Preventive	\$2,915	\$0	\$0	\$0	\$2,915	82	82
T-11	Preventive	\$797	\$0	\$0	\$0	\$797	74	74
Plan Year: 2023				Estimated Cost: \$9,611		PCI		
A-11	Preventive	\$3,957	\$0	\$0	\$0	\$3,957	69	69
R-11	Preventive	\$4,707	\$0	\$0	\$0	\$4,707	79	79
T-11	Preventive	\$947	\$0	\$0	\$0	\$947	72	72

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Plan Year: 2024		Estimated Cost: \$14,807					PCI		
Section	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	Before	After	
A-11	Preventive	\$5,512	\$0	\$0	\$0	\$5,512	67	67	
R-11	Preventive	\$8,212	\$0	\$0	\$0	\$8,212	77	77	
T-11	Preventive	\$1,082	\$0	\$0	\$0	\$1,082	71	71	

Plan Year: 2025		Estimated Cost: \$19,729					PCI		
Section	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	Before	After	
A-11	Preventive	\$7,084	\$0	\$0	\$0	\$7,084	65	65	
R-11	Preventive	\$11,437	\$0	\$0	\$0	\$11,437	75	75	
T-11	Preventive	\$1,207	\$0	\$0	\$0	\$1,207	70	70	

Plan Year: 2026		Estimated Cost: \$24,509					PCI		
Section	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	Before	After	
A-11	Preventive	\$8,679	\$0	\$0	\$0	\$8,679	63	63	
R-11	Preventive	\$14,401	\$0	\$0	\$0	\$14,401	74	74	
T-11	Preventive	\$1,429	\$0	\$0	\$0	\$1,429	69	69	

Plan Year: 2027		Estimated Cost: \$29,069					PCI		
Section	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	Before	After	
A-11	Preventive	\$10,317	\$0	\$0	\$0	\$10,317	62	62	
R-11	Preventive	\$17,101	\$0	\$0	\$0	\$17,101	72	72	
T-11	Preventive	\$1,650	\$0	\$0	\$0	\$1,650	69	69	

HARLOWTON AIRPORT

8/30/2012



A-11, Overview



A-11, Surface detail with crack



A-11, Surface detail with raveling



R-11, Overview

HARLOWTON AIRPORT

8/30/2012



R-11, Surface detail with depression



R-11, Surface detail with patch



T-11, Overview



T-11, Surface detail with crack

HARLOWTON AIRPORT

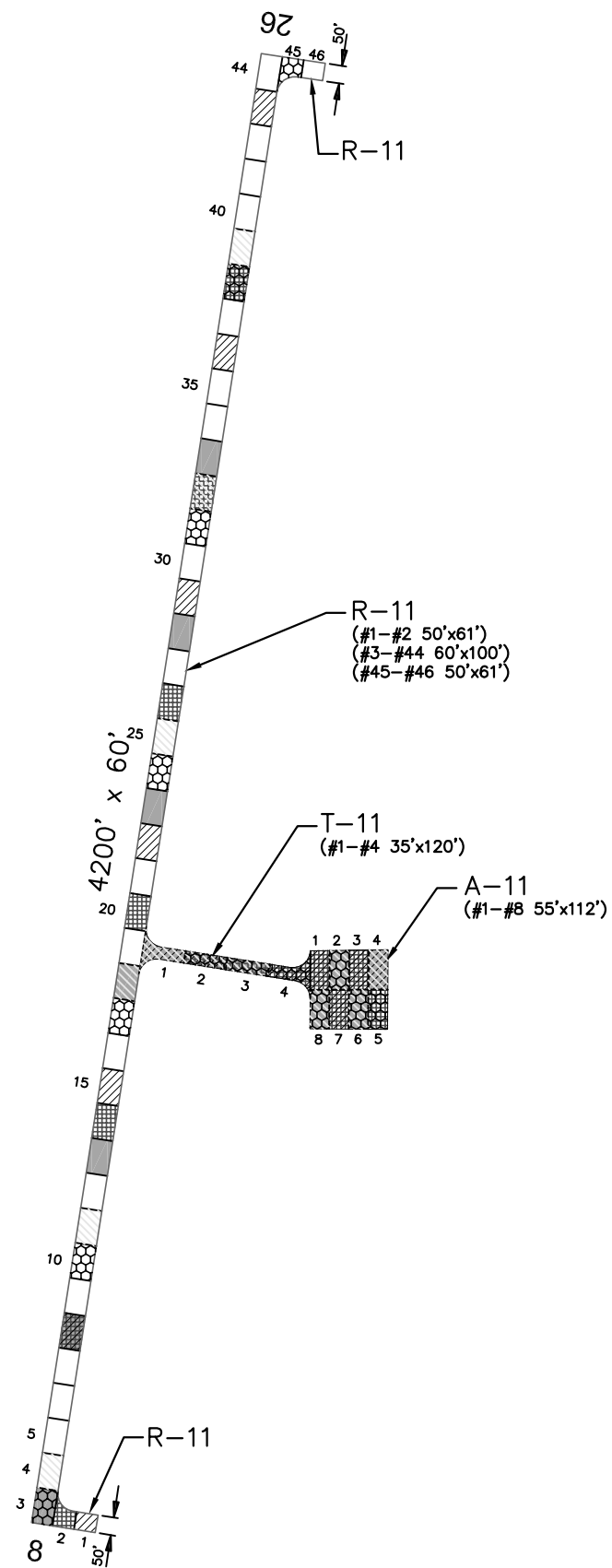
8/30/2012



T-11, Surface detail with cracking

HARLOWTON

HARLOWTON

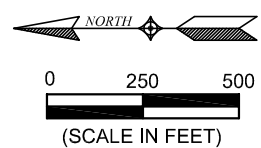




PAVEMENT STRENGTH SURVEY/PAVEMENT CONDITION SURVEY

PAVE. IDENT.	SOIL CLASS	SUB GRADE CLASS	SUBBASE COURSE	BASE COURSE	SURFACE COURSE	OVERLAY	PAVEMENT STRENGTH			REMARKS
							MAX. GROSS LOAD (LBS)			
							SINGLE	DUAL	DUAL TAN.	
RUNWAYS										
R-11			9" COMP. T-99	10" P-208, P-207	2" P-401	P-609	12,500			◀▶▶▶
TAXIWAYS										
T-11			4" P-154	5" P-208, 2" P-207	2" P-401	P-609	12,500			◀▶▶▶
APRONS										
A-11			4" P-154	5" P-208, 2" P-207	2" P-401	P-609	12,500			◀▶▶▶

REMARKS:

- ▶ AIP-01, 1997, REHABILITATE AND WIDEN RUNWAY; REHABILITATE APRON AND TAXIWAY.
- ▶ AIP-02, 2002, CRACK SEAL, FOG SEAL, AND REMARK ALL PAVEMENTS.
- ▶ AIP-003, 2006, CRACK SEAL, FOG SEAL, AND REMARK ALL PAVEMENTS [INSPECTED PRIOR TO COMPLETION].



LEGEND [Pattern] 1997 SURVEY AREA (NOT SURVEYED) [Pattern] 2000 SURVEY AREA [Pattern] 2003 SURVEY AREA [Pattern] 2006 SURVEY AREA [Pattern] 2009 SURVEY AREA [Pattern] 2012 SURVEY AREA	DATE OF PAVEMENT STRENGTH SURVEY:	SEPT. 23, 1987	MONTANA AVIATION SYSTEM PLAN 2012 UPDATE - PAVEMENT CONDITION INDEXES WHEATLAND COUNTY AIRPORT
	EVALUATED BY:	C. NEW	
	DATE OF MOST RECENT PAVEMENT CONDITION SURVEY:	AUG. 30, 2012	PREPARED FOR: 
	EVALUATED BY:	S. BROWN	
			PREPARED BY: 
			HARLOWTON MONTANA DATE: DEC. 2012