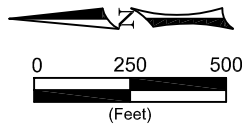
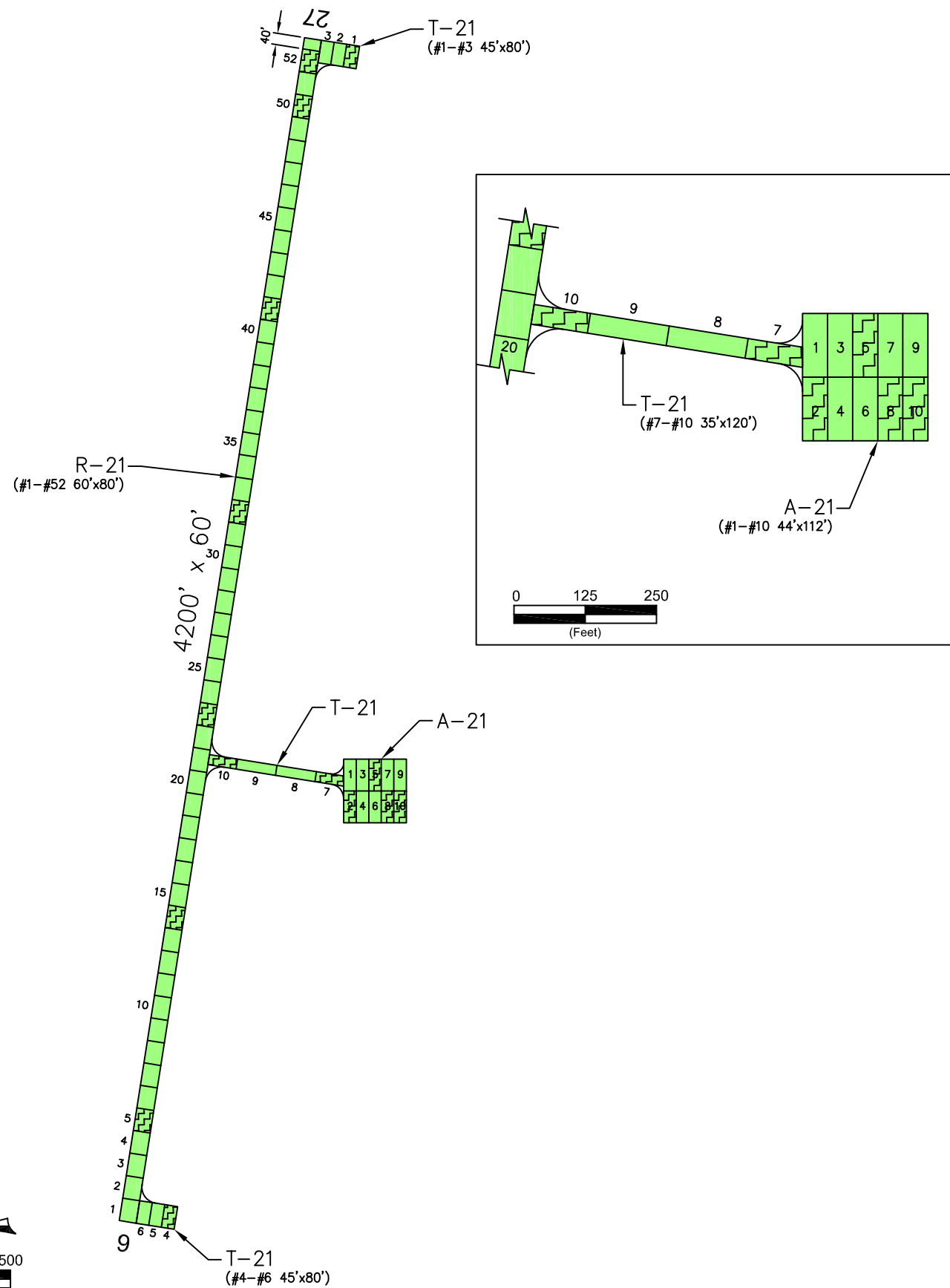


HARLOWTON

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-21		CBR=2.5		2.5"P-208,10"P-207	3" P-401		12,500			1
TAXIWAYS										
T-21		CBR=2.5		9" P-208	3" P-401		12,500			1
APRONS										
A-21		CBR=2.5		9" P-208	3" P-401		12,500			1

REMARKS:

- AIP-001, 1997, REHABILITATE AND WIDEN RUNWAY; REHABILITATE TAXIWAY AND APRON.
- AIP-002, 2002, CRACK SEAL, FOG SEAL, AND REMARK ALL PAVEMENTS.
- AIP-003-2006, CRACK SEAL, FOG SEAL, AND REMARK ALL PAVEMENTS
- 1. AIP-006-2015, RECONSTRUCT RUNWAY, TAXIWAY, AND APRON (2016 CONSTRUCTION).

LEGEND

- 2006 SURVEY AREA (N/A)
- 2009 SURVEY AREA (N/A)
- 2012 SURVEY AREA (N/A)
- 2015 SURVEY AREA (NOT SURVEYED)
- 2018 SURVEY AREA
- MAINTAIN: PCI > 60
- TRANSITION: PCI 45 TO 60
- RECONSTRUCT: PCI < 45

DATE OF PAVEMENT STRENGTH SURVEY:	
EVALUATED BY:	
DATE OF MOST RECENT PAVEMENT CONDITION SURVEY:	SEPT. 6, 2018
EVALUATED BY:	N. SCHROHT
LOCATION:	HARLOWTON MONTANA

**MONTANA AVIATION SYSTEM PLAN
2018 UPDATE - PAVEMENT CONDITION INDEXES
WHEATLAND COUNTY AIRPORT
(HWQ)**

Date: Prepared For: Prepared By:

DECEMBER 2018





A-21, Overview



A-21, Patch – Tie Down



R-21, Overview



R-21, Ravel – Surface Grind



T-21, Overview



T-21, Cracking

HARLOWTON AIRPORT

Branch: 22A **APRON**

A-21

Length: 220 LF **Width:** 224 LF **Area:** 49,280 SF **Last Const:** 2015 **Family:** ACAM
From: T-21 **To:** HANGARS **Surface:** AC

Inspections

Samples Surveyed: 4 **Total Samples:** 10 **Last Inspection Date:** 9/6/2018 **PCI:** 95

Sample # 2	Distress Description NO DISTRESSES	Severity	Quantity	Area: 4,928 SF
Sample # 5	Distress Description PATCHING DEPRESSION	Severity L L	Quantity 4 SF 4 SF	Area: 4,928 SF
Sample # 8	Distress Description PATCHING LONGITUDINAL/TRANSVERSE CRACKING	Severity L L	Quantity 47 SF 22 LF	Area: 4,928 SF
Sample # 10	Distress Description PATCHING LONGITUDINAL/TRANSVERSE CRACKING RAVELING	Severity L L H	Quantity 7 SF 22 LF 1 SF	Area: 4,928 SF

Extrapolated Distress Quantities*

Distress Description	Severity	Quantity	Density	Deduct
DEPRESSION	LOW	9 SF	0.02%	0.30
LONGITUDINAL/TRANSVERSE CRACKING	LOW	110 LF	0.22%	3.25
PATCHING	LOW	143 SF	0.29%	2.10
RAVELING	HIGH	3 SF	0.01%	6.00

* 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 97.0 % Climate/Durability 3.0 % Other

HARLOWTON AIRPORT				Branch: 22R	RUNWAY	R-21
Length: 4,200 LF	Width: 60 LF	Area: 252,000 SF	Last Const: 2015	Family: ACRML		
From: 12+00		To: 54+00		Surface: AC		

Inspections

Samples Surveyed: 7	Total Samples: 53	Last Inspection Date: 9/6/2018	PCI: 96	
Sample # 5	Distress Description LONGITUDINAL/TRANSVERSE CRACKING	Severity L	Quantity 3 LF	Area: 4,800 SF
Sample # 14	Distress Description LONGITUDINAL/TRANSVERSE CRACKING RAVELING DEPRESSION	Severity L H H	Quantity 47 LF 1 SF 1 SF	Area: 4,800 SF
Sample # 23	Distress Description PATCHING	Severity L	Quantity 0.2 SF	Area: 4,800 SF
Sample # 32	Distress Description DEPRESSION RAVELING	Severity L L	Quantity 1 SF 1 SF	Area: 4,800 SF
Sample # 41	Distress Description NO DISTRESSES	Severity	Quantity	Area: 4,800 SF
Sample # 50	Distress Description NO DISTRESSES	Severity	Quantity	Area: 4,800 SF
Sample # 52	Distress Description NO DISTRESSES	Severity	Quantity	Area: 4,800 SF

Extrapolated Distress Quantities*

Distress Description	Severity	Quantity	Density	Deduct
DEPRESSION	HIGH	8 SF	0.00%	12.00
DEPRESSION	LOW	8 SF	0.00%	0.30
LONGITUDINAL/TRANSVERSE CRACKING	LOW	375 LF	0.15%	2.72
PATCHING	LOW	2 SF	0.00%	2.00
RAVELING	HIGH	8 SF	0.00%	6.00
RAVELING	LOW	8 SF	0.00%	1.00

* 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	49.0 % Climate/Durability	51.0 % Other
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HARLOWTON AIRPORT

Branch: 22T TAXIWAY

T-21

Length: 487 LF **Width:** 35 LF **Area:** 17,045 SF **Last Const:** 2015 **Family:** ACRML
From: R-21 **To:** TURNAROUND **Surface:** AC

Inspections

Samples Surveyed: 4 **Total Samples:** 10 **Last Inspection Date:** 9/6/2018 **PCI:** 97

Sample # 1	Distress Description DEPRESSION	Severity L	Quantity 2 SF	Area: 3,600 SF
Sample # 4	Distress Description PATCHING	Severity L	Quantity 1 SF	Area: 3,600 SF
Sample # 7	Distress Description LONGITUDINAL/TRANSVERSE CRACKING PATCHING	Severity L L	Quantity 17 LF 0.2 SF	Area: 4,200 SF
Sample # 10	Distress Description PATCHING	Severity L	Quantity 0.2 SF	Area: 4,200 SF

Extrapolated Distress Quantities*

Distress Description	Severity	Quantity	Density	Deduct
DEPRESSION	LOW	5 SF	0.01%	0.30
LONGITUDINAL/TRANSVERSE CRACKING	LOW	42 LF	0.11%	2.49
PATCHING	LOW	2 SF	0.01%	2.00

* 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 94.0 % Climate/Durability 6.0 % Other

HARLOWTON AIRPORT (22)

FIFTEEN YEAR PROJECTIONS							ESTIMATED AVERAGE ANNUAL COST:		\$25,989	
Plan Year: 2019							Estimated Cost:		\$0	
Section	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	PCI		Before	After
A-21	None	\$0	\$0	\$0	\$0	\$0	94	94		
R-21	None	\$0	\$0	\$0	\$0	\$0	95	95		
T-21	None	\$0	\$0	\$0	\$0	\$0	96	96		
Plan Year: 2020							Estimated Cost:		\$0	
Section	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	PCI		Before	After
A-21	None	\$0	\$0	\$0	\$0	\$0	91	91		
R-21	None	\$0	\$0	\$0	\$0	\$0	92	92		
T-21	None	\$0	\$0	\$0	\$0	\$0	93	93		
Plan Year: 2021							Estimated Cost:		\$115,851	
Section	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	PCI		Before	After
A-21	Preventive + Global MR	\$100	\$16,755	\$0	\$0	\$16,855	88	97		
R-21	Preventive + Global MR	\$260	\$85,679	\$0	\$0	\$85,939	89	98		
T-21	Preventive + Global MR	\$1	\$13,056	\$0	\$0	\$13,057	90	99		
Plan Year: 2022							Estimated Cost:		\$0	
Section	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	PCI		Before	After
A-21	None	\$0	\$0	\$0	\$0	\$0	94	94		
R-21	None	\$0	\$0	\$0	\$0	\$0	95	95		
T-21	None	\$0	\$0	\$0	\$0	\$0	96	96		
Plan Year: 2023							Estimated Cost:		\$0	
Section	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	PCI		Before	After
A-21	None	\$0	\$0	\$0	\$0	\$0	91	91		
R-21	None	\$0	\$0	\$0	\$0	\$0	92	92		
T-21	None	\$0	\$0	\$0	\$0	\$0	93	93		
Plan Year: 2024							Estimated Cost:		\$276	
Section	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	PCI		Before	After
A-21	Preventive	\$86	\$0	\$0	\$0	\$86	88	89		
R-21	Preventive	\$190	\$0	\$0	\$0	\$190	89	90		
T-21	None	\$0	\$0	\$0	\$0	\$0	90	90		
Plan Year: 2025							Estimated Cost:		\$1,205	
Section	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	PCI		Before	After
A-21	Preventive	\$221	\$0	\$0	\$0	\$221	86	86		
R-21	Preventive	\$878	\$0	\$0	\$0	\$878	87	87		
T-21	Preventive	\$106	\$0	\$0	\$0	\$106	87	88		
Plan Year: 2026							Estimated Cost:		\$117,620	
Section	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	PCI		Before	After
A-21	Preventive + Global MR	\$355	\$16,755	\$0	\$0	\$17,110	83	92		
R-21	Preventive + Global MR	\$1,564	\$85,679	\$0	\$0	\$87,243	84	93		
T-21	Preventive + Global MR	\$211	\$13,056	\$0	\$0	\$13,267	85	94		
Plan Year: 2027							Estimated Cost:		\$47	
Section	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	PCI		Before	After
A-21	Preventive	\$47	\$0	\$0	\$0	\$47	89	89		
R-21	None	\$0	\$0	\$0	\$0	\$0	90	90		
T-21	None	\$0	\$0	\$0	\$0	\$0	91	91		
Plan Year: 2028							Estimated Cost:		\$1,008	
Section	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	PCI		Before	After
A-21	Preventive	\$181	\$0	\$0	\$0	\$181	86	87		
R-21	Preventive	\$742	\$0	\$0	\$0	\$742	87	87		
T-21	Preventive	\$85	\$0	\$0	\$0	\$85	88	88		
Plan Year: 2029							Estimated Cost:		\$1,936	
Section	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	PCI		Before	After
A-21	Preventive	\$316	\$0	\$0	\$0	\$316	84	84		
R-21	Preventive	\$1,430	\$0	\$0	\$0	\$1,430	84	85		
T-21	Preventive	\$190	\$0	\$0	\$0	\$190	85	85		

HARLOWTON AIRPORT (22)

FIFTEEN YEAR PROJECTIONS							ESTIMATED AVERAGE ANNUAL COST:		\$25,989			
Plan Year: 2030							Estimated Cost:		\$2,860		PCI	
Section	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	Before	After	Before	After		
A-21	Preventive	\$450	\$0	\$0	\$0	\$450	81	81				
R-21	Preventive	\$2,116	\$0	\$0	\$0	\$2,116	82	82				
T-21	Preventive	\$294	\$0	\$0	\$0	\$294	82	83				
Plan Year: 2031							Estimated Cost:		\$120,453		PCI	
Section	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	Before	After	Before	After		
A-21	Preventive + Global MR	\$859	\$16,755	\$0	\$0	\$17,614	78	87				
R-21	Preventive + Global MR	\$3,659	\$85,679	\$0	\$0	\$89,339	79	88				
T-21	Preventive + Global MR	\$444	\$13,056	\$0	\$0	\$13,500	80	89				
Plan Year: 2032							Estimated Cost:		\$1,658		PCI	
Section	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	Before	After	Before	After		
A-21	Preventive	\$275	\$0	\$0	\$0	\$275	84	85				
R-21	Preventive	\$1,224	\$0	\$0	\$0	\$1,224	85	85				
T-21	Preventive	\$158	\$0	\$0	\$0	\$158	86	86				
Plan Year: 2033							Estimated Cost:		\$2,585		PCI	
Section	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	Before	After	Before	After		
A-21	Preventive	\$410	\$0	\$0	\$0	\$410	82	82				
R-21	Preventive	\$1,913	\$0	\$0	\$0	\$1,913	82	83				
T-21	Preventive	\$263	\$0	\$0	\$0	\$263	83	83				